EBS REVIEW

CHANGE AND GROWTH
INNOVATION AND ELECTRONICS

Tallinn 2002

ISSN-1406-0264

EBS REVIEW

Contents

Winter 2002

Editorial

Capturing the challenge

Current issue of the EBS Review is compiled of the various contributions that all reflect the different pieces of the present development agenda for both business and public sector. These are issues of the innovation, continuous learning, leadership and human concerns of the development. While ICT development could be described as global and borderless process, the consequences and concrete shapes of the transfer patterns have remained local, often as subjects of national or regional economy and policies. This publication is gathering together the most challenging and debated topics in one of the fastest growing region in global information society – Baltic Sea region.

Recent decades have been the era of rapid developments in IT and telecommunications (ICT) leading to different theories of information society and arguments about the emergence of the 'new economy'. Whether economic fundamentals really have changed or such transformations have similarities from history, remains largely debated. Similarly to other key factors (like cotton, coal and iron, steel, oil and plastics) that had all-pervasive influence in the productive sphere, and a capacity, based on a set of interwoven technical and organisational innovations, to reduce costs and change the quality of capital equipment, labour, and products, it is believed that the ICT also carries enormous potential.

As the success of all modern developed countries lies in industrial and services sector liberalization and innovation, the role of the state policies is crucial here. Articles in this publication cover also the cases of the implementation of policies that help research and development expenditure to be transformed into the potential growth of economy and higher welfare of society.

The situation in the European Union candidate countries is that both R&D expenditure and average productivity are still much lower than the average within the European Union. According to the 1998 figures, the EU economy as a whole was 2.5 times more productive than that of the candidate countries. The Estonian overall labour productivity is 37% of the EU, which is also very close to the candidate countries average of 41%. In the Estonian ICT cluster productivity is the highest in the telecommunications sector and this sector has also the highest added value generating ability. Computer services at the same time hold a medium position. Further growth potential and the growth span of IT companies is on of the studies of this publication.

Current productivity increase has followed mainly from foreign enterprises and through foreign direct investments (FDI) resulting in major productivity increase in new, small enterprises or those sectors where foreign enterprises were willing to act as restructuring agents. Those restructured enterprises seem to outperform domestic firms that are based on local capital.

However, Estonia's rapid increase in productivity could be explained by the catching up model. According to catching up argumentation, relatively backward countries grow faster than advanced countries, because they would be able to imitate technological knowledge, and hence converge to the frontier value of per capita income more rapidly. Technological accumulation plays a crucial role here, but besides technological aspects, there are also issues of 'social capability' that mark a broad description of the set of institutions that facilitate the international diffusion of technological knowledge.

Estonia's transfer to market economy could be used as a standard economics textbook example of the neoliberal laissez faire approach to economics. Estonian economic policy is described as having a heavy reliance on market mechanisms, 'getting the state out of the economy', rapid and largescale privatisation, free trade and liberal investment laws. Without proper innovation policy and staying at the present knowledge intensity level and R&D investments growth rate, Estonia would likely end up in the European Union, but would be forced to compete using extensively basic factor advantages, marginalised in terms of technology development and high value added production linkages, excessively dependant on budgetary transfers.

It is therefore essential that the mechanisms for co-ordination between the various national policies, affecting R&D and innovation, should be developed further. It is also essential to monitor continuously the development patterns both for public and private sectors, transform the analysis into the applicable strategies and actions. I wish analysis and reflections of this publication would help to capture the challenge of the present for those in lead of the fast and vibrant development.

Linnar Viik

E-citizen in an E-state

Tarmo Loodus, *Minister of Internal Affairs, Estonia*

We all know today that Estonia has picked the fast lane in almost all walks of life. For the public sector, this choice has been no less than written down in several acts that regulate the sector. Public Information Act, Digital Signatures Act, Identity Documents Act, Population Register Act, to name a few, have been prepared in view of the rapid progress in information technologies. These acts impose an obligation on the state to introduce information technologies, geared to provide the people with better services and more economical governance. Hopefully, the majority of people have worked this out and have approved the choice. Any new development feels strange at first, and may be disparaged, condemned or simply ignored. Nevertheless, in a free world, it will come anyway. The advent of cars is a striking example. Society met them with fierce resistance, but today, whence to find a horse to stroke its man?!

The speed of our advancement is most critical for us. Therefore, I have always been envious of the people who are able to keep pace with new solutions, and know how to build on these solutions to make their own life and the life of their fellow countrymen easier. The state has a lot to do here. First of all, the state has to set the course of our journey by means of acts, government resolutions.

The incumbent Government has been active in doing this in every respect. Even too active, since every now and then we have failed to clarify our positions to our coalition partners to a full extent. That, for example, was what happened in connection with identity cards (ID cards). In 1995, we began preparations for the introduction of ID cards in Estonia. The national ID cards programme was formally launched in 1998, and final approval was given in spring 1999. Now, on the eve of the year 2002, one of the coalition parties decided to change the rules of the game. Well, things happen.

In my capacity as the Minister of Internal Affairs, I have been engaged in preparing our administrative-territorial reform (designed to change boundaries and make democracy work in the local governments). In the course of preparations for the reform, through a pilot project, we came to the conclusion that a rapid introduction of information technologies will be the basis for our success.

E-citizen operating in an e-state is pending

It is Tuesday morning and the ministers hurry to the meeting of the Government of the Republic. The ministers carry no heavy brief cases with materials for the meeting, but have small notebooks instead. For about a year, the meeting of the Government of the Republic of Estonia has been a pretty attractive sight – all the ministers sit in front of computer screens and click their mice, rather than leaf through papers. There are no piles of paper on the tables, since all the materials supplementary to the draft under discussion are in the computer, just a few clicks away...

The minister may add his or her reasoning to the draft prior to the meeting, so that other ministers have time to examine it in advance and address the issues raised before the meeting begins. What is even better, the Government members may vote without being present at the meeting, since an Internet connection is all they need. However, we are just at the beginning of a long road and there is a long way to our destination, i.e. a real e-state and e-government.
Think of all that forest we saved!

But our aim is more ambitious than that. We want the doors of our state agencies to be open to the citizens for service 24 hours a day, 7 days a week and 12 months a year, regardless of office hours. So we need to develop IT solutions which provide every citizen with as many services as possible on the Internet. By means of information technologies, we are able to prevent rural areas from turning into outlying areas, and people can save shoe-leather in their communication with local government and state. People will be able to speak with a stronger voice about the issues concerning their life in the community. Up to the point that people may even be able to vote in local government elections on the Internet in the near future.

At the same time there has to be a guarantee that the many individual services are provided to the right person. The local government, too, must know for sure that the request was sent by that very individual. Openness needs to be extremely secure. All this requires …

…a common strategy and concerted action.

Today, electronically transmitted information co-exists with piles of paper. The reasons for this are deficiencies of both a technical and legal nature. Moreover, in some issues we have not even come to political agreement. When e-governance extends to the level of county governments and local governments and is no longer limited to the central government, may we say that we have real e-governance. To achieve this, electronic operations need to be introduced in a co-ordinated manner based on a common strategy. Efforts should be made to speed up the introduction of electronic signatures and the electronic determination of a person's identity.

Here, an efficient division of activities between the central authority and local governments is critical. No less important is a close co-ordination between various national development programmes and projects. Yet it is rather difficult to find and implement effective economic and motivation models.
Electronic operations between agencies on the one hand and agencies and customers on the other hand should become a norm; databases have to be cross-functional; both the private and public sectors should be actively engaged in the development, expansion and mediation of the services. Only then can we say that the e-state of Estonia operates 24 hours a day, 7 days a week and 365 days a year.

There are many unsolved problems

E-governance is not just an information technology change in operations. Above all, it is an organisational change, because an active application of information technologies leads to the reorganisation of the rules of procedure, duties and resources of administrative machinery. And vice versa, it is the reorganisation of the rules of procedure that underlies a more efficient use of the potential of information technologies.

Despite numerous visions and analyses and pilot projects dealing with the issue, quite a few unsolved problems remain. We lack a comprehensive vision; no ultimate targets have been set with a focus on IT applications; our activities are not sufficiently co-ordinated; several key resolutions have not been passed; people responsible are not in place; even our plans so far have not been implemented in a consistent manner. We are short of both human and financial resources. In order to make swift progress, problems need to be addressed without delay in the following fields:

strategy:
- we need to set our overall goal correctly
- define our principles
- define the scope and links within the project as an integral whole
- decide the areas of responsibility.

principles:
- customers: what are the customers' needs and requirements for the service?
- implementation: how to implement?
- organisation: who deals with what?

Here the customer means a resident, company or organisation. The first task is to specify the needs of the customer and the purposes for which they should use IT. The next task is to find out how to put the ideas into practice.

At the national and local government levels alike, we should be guided by the needs of the end consumer. The introduction of IT should improve efficiency and administration should accelerate considerably.

In order to achieve this, the processes have to be optimised and standardised throughout the state machinery. A clear-cut distribution of tasks is required – who is responsible for which processes. In addition, there has to be a single data communication network covering the entire country; harmonised and cross-functional databases; automated records management routines, including self-service via the Internet. The latter relieves the state and local government specialists of excessive routine tasks. Naturally, electronic administration and its attributes – the identity card and digital signature - ensure all this.

However, it is obvious that…

…the individual presents the main problem.

A new service will work, if it is economically affordable to many, and technically simple to use. We probably need even more favourably priced home PCs, and more public access to the Internet. All our village libraries should definitely have Internet connections, since libraries are among the institutions most frequented by rural residents. The project "Vaata Maailma" (Look@World) should be paid tribute as a project based on the collaboration of the public and private sectors that develops public access to the Internet and creates training opportunities.

A service has to be comprehensible and consumable upon the first encounter. Any application shall include e-training such as operating instructions (explanations of the content, background information). The already operational services, such as completing income declarations on the Internet, on-line shopping, e-banking, TOM (a portal through which citizens may submit proposals to the Government), and so on may serve as a starting point.

A service works well when it is simple and clear and becomes routine and continuous. Which means that 90% of services designated as "significant for people" need to be pre-defined and should change little over time in the e-service environment. At the same time, these 90% comprise only 1% of the services available for the public. The main bottleneck is human ability, so the key issue is, how to raise people's preparedness and capability to cope in the new environment.

The following levels need to be provided in the e-environment:

- personal user interface
- individualised directory of services
- general directory of services (queries)
- queries execution layer
- databases and registers

Plan for further actions

- definition of services and priorities
- standards, principles and recommendations
- pilot projects
- training

We must attain the following objectives in the next couple of years:

- the citizen, company or organisation are ensured of a high-standard public service;
- data collection from the customer is made as easy and comfortable as possible;
- participation in local governance is facilitated (realised participatory democracy).

Estonia has the key acts required for e-governance (Public Information Act, Digital Signatures Act, Public Procurement Act, etc.).
The executive power has to complete the following tasks in the next two years:

- identity card programme
- data communication reform
- database reform
- digital signature application
- document management programme
- e-public procurement programme
- computer driving license for officials
- ICT reform at the county and local government levels

There is more to e-governance than better services

To characterise the current situation in the public sector in Estonia we may say that our state agencies are seriously interested in the e-state, since there are no alternatives to it in a small country with limited resources. All the more so, because young people expect to use information and communication technologies wherever possible today, and it is they who will govern the state of Estonia tomorrow.

However, it should be taken into account that the people may be unprepared and unable to use the new ICT applications efficiently, which is a likely main obstacle in the penetration of e-services. An individualised portal shall be the means by which a resident can quickly and easily access the services, which are relevant for him or her personally. And naturally, the provision of services has to be in compliance with the actual needs of the people.

There is more to e-governance than improved services. E-governance leads to a more active use, at the level of both the politicians and officials,

of information and communication technologies in shaping public opinion and providing services.

Thus e-governance marks a new level in the following areas:

- provision of services and information
- transparency
- better opportunities to have a say in the decision making processes
- enhanced co-operation
- a citizen-oriented administration
- development of a digital environment that attracts all groups of the population
- enhanced collaboration of local government structures and state structures, which have more sophisticated ICT systems.

And in conclusion, when providing people with services our state and local government agencies should keep asking themselves a few questions. Have they substantiated the provision of the service? Have the consumers of the service been consulted beforehand?

While the Internet is becoming the principal means of communication between state agencies, local governments and the people in Estonia, we should not forget the traditional channels, such as personal contact, writing letters or calling by phone. The good old traditional means of communication must remain while new means emerge. Then the majority of our population will be satisfied with our state.

I wish every success to those who can, are able and want to give their support to the e-state!

Political Economy of Internet

Penetration in Finland and Sweden (1995-2000)

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"... The small corporatist states can continue to prosper – not because they have found a solution to the problem of change but because they have found a way to live with change."[1]

Peter Katzenstein

Introduction

The Nordic countries Finland and Sweden have among the highest Internet penetration rates in the world. The rate of Internet penetration serves as a precondition and symbol of the Information economy[2]. Considering the high levels of state intervention experienced in these economies, their success poses a challenging political economy puzzle. The relevance of the issue is not only limited to Finland and Sweden, but rather putting together the pieces of this puzzle can lead to fascinating lessons for other countries through better a understanding of the potential of social democratic corporatism[3].

Firstly, the successes of the *new economy* and the *Internet revolution* are commonly associated with the United States, the largest and one of the freest economies in the world.[4] How then have similar results in levels of Internet penetration, for example, been achieved by more statist political economy models? In theory, social democratic corporatism with heavy regulation and government involvement should stunt initiative. The underlying question here is whether the *new economy* really requires a free economy or can the same ends be achieved through state intervention.

Secondly, the experiences of Sweden and Finland are especially relevant for many governments around the world, both in developed and developing countries, who are trying to create preconditions for and even engineer directly an *information economy.* Both Sweden and Finland provide recipes for achieving high Internet penetration. Considering their political economy model, the recipe should be different from that used in the United States, which is a large closed economy. Small open economies, in particular, can learn from the Swedish and Finnish experience.

This paper will look at the economic circumstances and the roles of the public and private sector in encouraging the high Internet penetration in Finland and Sweden. The following discussion begins with Internet penetration in these countries and its relevance for political economies. The discussion proceeds by looking at the background and current characteristics of the social democratic corporatist regimes of Finland and Sweden. Then, the paper focuses on the key drivers behind the "internetisation" of Finland and Sweden during the period of 1995-2000. The comparison of Sweden and Finland highlights the similarities and differences in achieving such a high level of Internet penetration. The conclusion draws lessons for achieving this high level of Internet penetration in other countries.

Relevance of Internet Penetration

a) Importance of Information economy

The *information economy* is usually associated with information and communication technology (ICT)[5] companies. Certainly the entrepreneurs in this sector are the key drivers of the phenomena but the implications are much larger. The ICT industry serves as a role model for many multinational enterprises (MNEs) in different industries.[6] Companies and especially MNEs around the world are increasingly knowledge intensive; they find themselves facing similar challenges to those of the ICT industry.

Yet the *information economy* is more than just transforming companies, it is about the transformation of the whole economy from the manual labour-intensive manufacturing and service sectors into more knowledge intensive industries. Even in cases where MNEs operate and use

resources around the globe, their most knowledge intensive and, thus, most important units in the value chain are usually located in the developed world. Serving as a home base is also beneficial for these developed countries' governments because it brings in more tax revenue and advances the overall economic development.

This broad context implies that even failing revenues and bankruptcies of ICT firms cannot change the phenomenal role of the *information economy.* The role of Internet and the number of people in an economy connected to the Internet are not just symbolic but differentiate between the economies in substance. Internet penetration is the driving force behind economic change, and governments around the world are trying to create suitable environments for the new economy. While some countries trust the invisible hand of the market (USA, Hong Kong), other countries put more emphasis on social engineering (EU, Malaysia, Singapore) in achieving this goal.

d) Nordic challenge

When considering per capita Internet penetration as the primary success factor in the *information economy,* the Nordic countries stand out from the EU average and challenge US leadership in the field. And it is not just Internet penetration that makes Nordic countries similar to the United States, but overall development of ICT and its utilization in these countries are like-minded as well. These countries, too, are home to some of the most successful ICT companies in the world.[7] According to the International Data Corporation/ World Times Information Society Index of January 2001, Sweden is the world's leading information technology nation. Norway scored second, Finland third and the United States placed fourth before another Nordic country, Denmark.[8] But this essay focuses mainly on Internet penetration as an essential pre-condition for having a successful knowledge intensive economy. In this respect differently from other non-Nordic EU countries, Sweden and Finland have as many Internet users per capita as the US. The Internet penetration rate is over fifty percent in all these countries. Even more, comparisons of Internet users in Sweden and Finland and the US indicate that the percentage of Internet users who can access the Internet from their home PC is roughly the same (around 40-45 percent of all Internet users).

f) Price of Internet access

Flat local call rates in the US make it virtually free to use Internet by dial-up connection[9], which charges only for the local call connection[10]. In Finland and Sweden, dial-up users have to pay for local calls according to the duration of the call.[11] It puts Swedish and Finnish users at a disadvantage compared to US users. The OECD points out that the average user in Finland, who in principle is as sophisticated as the Internet user in the US, spends much less time online than a US counterpart.[12] Knowing that in the case of dial-up connection in Finland every minute counts toward the bill may force customers to be more time-wary.

Price of connection cannot solely explain the high Internet penetration rates in Finland and Sweden. Even more, the existence of metered charging in Finland and Sweden, though inexpensive compared to many other countries with metered charging,[13] forces us to look at other features of the political and economic framework of Scandinavian countries to find reasons for the tremendous growth of Internet penetration.

Performance of Social Democratic Corporatism in Finland and Sweden

Conventional wisdom tends to see Finland and Sweden as heavily state-run economies.

Typically it would be possible to argue that the state simply has made Internet available just as it has provided other essential public services. But the reality of social democratic corporatism is more complex, and the following insight is useful for a better understanding of the connection or lack of connection between Internet penetration and social democracy.

a) Background to Finnish and Swedish economies

Historically, public sector expenditure of Swedish GDP has been the highest in the world and in Finland it is one of the highest and it has remained so.[14] In 1999, government spending as a percentage of GDP was almost 57 percent in Sweden and 49 percent in Finland.[15] Before the 1990s both Finland and Sweden were relatively open traders with heavy capital controls[16]. Despite the big welfare state, in 1990 trade was around 60 percent of Swedish GDP.[17] This trade openness certainly offered more opportunities for entrepreneurship than would have been possible in the case of a closed economy.

Finland and Sweden have implemented economic reforms in the 1990s.[18] Sweden cut top income tax rates, increased the independence of the Central Bank, and both countries removed capital controls in the respective packages of political reforms for joining the European Union in 1995.[19] These reforms did not undermine the role of the state. The nature of intervention may have changed, but quantitatively speaking, it has stayed the same. For instance, instead of taxing income, social democratic corporatist governments have moved toward taxing consumption.[20]

Another characteristic element of Sweden and Finland is a high level of labour union membership and consensus building between political parties, labour unions and companies. Despite the power of labour unions, the high level of the countries' government intervention with corporate tax rates among the highest in the world, the Swedish and Finnish economies are thriving. In 1999, Finland's GDP grew four percent and Sweden's GDP 3,8 percent[21], which are similar to the US figures. In 1999, unemployment remained high at over ten percent in Finland and 7,2 percent in Sweden, but especially in the case of Finland, this represented a dramatic change from the early 1990s when almost 17% of the working population was unemployed. Nevertheless, the EU average rate of unemployment was 9,2 percent in 1999.[22]

b) Political economy explanations

Political economist Geoffrey Garrett argues that the social democratic corporatist governments of the Nordic countries prove that US-type market liberalism is not the only option for achieving good macroeconomic performance. Social democratic corporatist regimes offer a strong alternative and globalisation has not undermined performance but rather strengthened it as the governments may have given up some old methods and found new ways for intervening.[23]

Another political economist Mancur Olson pointed out that the negative externalities of labour unions' power could be mitigated in cases where labour market institutions are "encompassing".[24] Highly centralized labour unions of the Nordic countries are able to internalise externalities that occur in the countries with fragmented labour unions (e.g. the UK). Olson sees this as an exception to neoclassical economics. According to Garrett, when the centralized labour unions are associated with strong left-wing political parties in the government, as is the case in the Nordic countries, they offer a viable alternative to the neoliberal model.[25]

c) Beyond the state

Government spending in the Nordic countries has been mainly in the form of providing public services, such as education, health care etc. Government ownership of infrastructure companies has been considered more successful than in many other parts of the world.[26] Public ownership of telecommunications and other companies in Finland and Sweden has been motivated by the microeconomic market failures but even more so by some other factors.[27]

Most importantly, public ownership remained quite limited and many large companies, especially in Sweden, where actually privately owned. Differently from Japan, where governments tried to engineer new industries by supporting particular companies through so-called targeted intervention, and from post-World War II United Kingdom, where governments nationalized whole industries in order to create national champions (e.g. British Steel), Sweden and Finland considered such strategies misplaced.[28] "The main function of policy is therefore to help industry adapt to a changing competitive order as opposed to protecting industry from this competition," political economist, Peter Katzenstein, characterised the policies of Sweden and Finland.[29]

The Finnish and Swedish governments taxed companies heavily but allowed much more freedom in operations. Heavy taxation was compensated by government subsidies, which included temporary assistance and support for regaining competitiveness.[30] Also, high levels of taxes are easier to overcome than some other forms of state intervention (e.g. nationalization). A recent study by the International Monetary Fund shows that Sweden has the largest shadow economy in Europe, which has mushroomed to 20 percent in 2000, from 7 per cent of GDP in 1970.[31] The Finnish shadow economy was 18 percent of official GDP in 2000.[32] Also, large multinationals, such as Sweden's Ericsson and Finland's Nokia, have many opportunities for overcoming taxes, as many of their units are located around the world.

Indirectly, heavy taxation is also compensated by institutional factors, both informal and formal[33].

Institutional factors like high levels of education[34], the protestant work ethic[35], work experience gained due to the existence of large Swedish multinational companies, social openness (knowledge of foreign countries and travel) which was encouraged by an outward looking economy and foreign language (especially English)[36] skills, all gave good reason for many companies to find Finland and Sweden advantageous business locations. These institutional factors are especially important when the argument put forth by Douglass North, Nobel prize winner in economics, is considered: "The performance of economies is a consequence of the incentive structures put into place; that is, the institutional framework of the polity and economy. These are in turn a function of the shared mental models and ideologies of the actors."[37]

Informal institutional factors, such as education and literacy, are essential in adapting to use of the Internet and utilising it in daily life. Without high levels of education and literacy, the high Internet penetration would not be possible because "technologies become diffused widely only if they are embraced widely by citizens in democratic societies".[38] According to John Peterson and Margaret Sharp, technology policies – which traditionally have been producer-driven – need to take account of the demand side. A broad and similar lesson may be drawn from the cases of nuclear power in the 1970s, cattle growth hormones in 1980s, and gene technologies in the 1990s: new technologies will not catch on unless they are viewed by the citizens as safe, ethical and consumer-friendly. Successful diffusion depends just as much on social attitudes as it does on technology. The Scandinavian firms, Nokia and Ericsson, have benefited enormously from the social attitudes of the people.[39]

The political economy factors forces us to take a closer look at Finland and Sweden in respect to the growth of Internet penetration in these countries. The following chapters will elaborate on the different factors figuring in the achievement of a high level of Internet penetration, first in Finland and then in Sweden. A close look is taken at the initial conditions, the liberalisation of the telecommunications market, education and research and development spending and the role of individuals and companies in the achievement of high Internet penetration rates.

The spending on education is important. Government may make Internet available for every citizen but if citizens lack the skills and knowledge necessary for utilising the Internet, the whole idea will become pointless. At the same time, an educated population who is willing to utilise the Internet in every-day life does not necessarily need the government to make the Internet available for them; they are willing to spend their own resources for obtaining the Internet access.

Spending on research and development (R&D) encourages Internet penetration. First, it encourages innovation in ICT industries that help utilise the Internet. As MIT professor Richard Schmalensee argues: "In many modern markets, competition occurs largely, though not exclusively, through research and development decisions."[40] Secondly, R&D employees are representatives of knowledge workers who find more ways to use the Internet than, say, manual workers.

Political Economy of Internet Penetration in Finland and Sweden Compared

a) Creative destruction and economic change

Sweden and Finland are strikingly similar in political economy factors that have encouraged the growth of per capita Internet penetration. Both countries experienced economic difficulties before the rapid growth of Internet use in the period 1995-2000. In Finland the difficulties took the more severe form of a recession, after which the structure of the Finnish economy had substantially changed. The recession was one of the main driving forces behind the demand for new skills and work methods essential in the *information economy.* This argument fits into the paradigm of 'the creative gale of destruction' that Joseph Schumpeter[41] used to explain the emergence of the new phases of economic development, widely used in describing the phenomenon of the new economy.

The crisis of the early 1990s was an important event in the transformation of the Swedish economy.[42] While the economic recession in Sweden was not as fundamental as that seen in Finland and unemployment remained lower at 9,2% in 1994[43] (it was only 1,7 percent in 1990), as in Finland, Sweden's economic crisis served as a springboard to the *information economy* by abolishing many old ways of doing business, and forcing individuals

and businesses to look for new opportunities. But the change was much more gradual than in Finland. Sweden already had many large multinational companies (Volvo, Scania, ABB, Ericsson) and its economy was much more integrated into the world markets than the Finnish economy.

b) Research and Development spending

In terms of R&D spending, Finland and Sweden are more similar to the United States than to the EU average.

Finnish spending on R&D in 1985 was 1,6 percent of the GNP[44], in 1991 it had grown to 2,1 percent and by 1998 it had reached almost 3 percent of GNP. Tremendous growth has occurred in private sector R&D, which accounted for 70 per cent of total Finnish R&D spending in 1998.

The increase of Finnish R&D spending by all sectors did not slow down during the economic recession of the early 1990s. This stability shows that government and government funded institutions (most Finnish universities are government funded), did see R&D as a long-term priority and did not want to sacrifice R&D spending for short-term job-creation to ease the situation of the unemployed.

In terms of public sector spending on R&D, Sweden does not spend more as a percentage of GDP than the EU average.[45] The total Swedish R&D expenditure was 3,9 percent of GNP in 1997, which was almost one percentage point higher than any other country in the OECD. From 1985 to 1991 Swedish R&D spending was 2,9 percent of GNP, but has increased drastically since 1993.[46]

What fundamentally differentiates Sweden from the other OECD countries is the fact that growth in R&D spending came from the private sector; in 1997 the private sector funded 75 percent of total R&D spending. Private sector spending grew from 2,0 in 1985 and 1991 to 2, 9 percent of GDP in 1997. Sweden has a "…better record on civilian R&D expenditure than the USA."[47] By looking at individual companies, one can see that the large Swedish multinationals are especially big spenders on R&D.[48]

The weight of private resources in R&D spending indicates that the possible government role in direction setting for the economy by allocating R&D resources is quite small. "In a world of intense competition and global oligopoly, any MNC worth its salt should be spending on R&D anyway. There is no need to pay them to do what they are already doing. Subsidising their R&D raises suspicion about "the use of research policy as a substitute for an undeclared industrial one."[49]

c) Liberalization of the telecommunications market

Directly, the increase in Internet penetration was encouraged by a liberalisation of the telecommunications markets in both countries, a move that made Internet access more affordable than in most OECD countries.

Finland and Sweden were in the forefront of liberalising its telecommunication market in the 1980s and the 1990s.[50] As Finland and Sweden joined the EU in 1995, the liberalisation of the telecommunications market was also supported by the legislation of the EU[51] The de-regulation and liberalisation of the telecommunication market has resulted in the one of the lowest prices for Internet connections in OECD countries.[52] That is one of the key reasons for the rapid increase of Internet use seen since 1995.

d) Similarities and differences

In spite of recession in the first half of the 1990s, liberalisation of the telecom market and high spending on R&D make Finland and Sweden strikingly similar to the US, which has a level of Internet penetration as high as the Nordic countries. What about the unique characteristic of social democratic corporatism? Is there something that differentiates Finland and Sweden from the US that might have encouraged Internet use?

Both Finland and Sweden are high spenders of public money on education. This has created preconditions for information literacy and has indirectly encouraged Internet use.

The educational policy of the Finnish public sector - offering equal opportunities for all citizens - has created mental prerequisites for the development of the use of the Internet among the general population. Finland's public expenditure on education as a percentage of GDP has been one of the highest in Europe. What is remarkable is the fact that even when Finland was in recession it still spent more on education than other EU countries.

Sweden's public expenditure on education as a percentage of GDP was the highest in Europe

with the exception of Denmark. At the beginning of the rapid increase in Internet usage in 1995, Swedish expenditure on education was 7,8 percent of GDP.[53]

Sweden's attention to education has made it the country with the highest literacy skills in the world. According to the OECD and Statistics Canada, only "8 per cent of the adult population encounters a severe literacy deficit in every day life and at work".[54] This survey measured not just the respondents' ability to read but also their comprehension skills, vital for using the Internet effectively. The importance of education in this context is supported by the fact that, in 2000, seventy percent of highly educated people used the Internet in Sweden and forty percent of those with low educational levels used the Internet. Internet usage increased between both educational categories during the 1995-2000 period, but the increase among the highly educated has been more rapid.[55]

This is not, however, meant to suggest that the more government spends on education, the better education it delivers. There can be many examples of how high government spending does not necessarily guarantee quality of education. But in the context of this Swedish and Finnish example it is possible to argue that government spending on education has also delivered quality of education.

Sweden has a much larger number of homes with Internet access than Finland. Swedish government tax legislation has directly encouraged the purchase of home computers. The amendment regarding so-called personal purchases (personalköp) means that employers can make monthly debits from wages that, after a set number of years, allow the employee to buy the computer. Debits are made from the gross wage, which provides a certain tax subsidy for the employees, especially considering the high taxes in Sweden.[56] According to figures from May 1998, 10 percent of the working population in Sweden (aged 18-64 years) had bought a computer via their employer.[57] There are also other opportunities for employers to provide employees with computer access. For instance, employees can borrow or hire a computer from an employer.[58]

Its impact has not been as high to explain the whole difference between Finnish and Swedish home-connectivity to the Internet and is balanced by the lower prices of Internet access in Finland.

e) Common recipe

Finland and Sweden provide a common recipe for achieving a high level of Internet penetration, which in some respects is different from the United States. In terms of government measures, liberalization of the telecom market is key to increasing the possibilities for Internet penetration. Countries leading in Internet penetration have the lowest costs of local telephony services as a result of tough competition in the market. Competition is not only important for achieving an affordable price for Internet access but also for encouraging innovation and R&D spending among ICT firms, in turn resulting in more innovative services; these attract more Internet users and encourage existing ones to spend more time on the Internet.

A highly educated population tends to be more information literate and therefore is more eager to use the Internet and utilize it in every day life. Sweden and Finland have encouraged an increase in the level of education of their populations through heavy government spending on education.

Most importantly, government policies that have encouraged Internet penetration in Finland and Sweden have been indirect. Individuals and firms were the main actors in the rapid rise of Internet penetration in Finland and Sweden in the period of 1995-2000, and the government provided a policy framework for this development. The general attitude is well characterised by a statement by the Finnish Science and Technology Policy Council: "The measures taken by the public sector are not generally sector-specific, influencing one sector only. Science and technology policy is not mere "research promotion" or "technological development", policy measures are intended to influence, and do influence, society as a whole. Change based on innovation and knowledge means that the rationale behind the development of government research financing no longer stems from a traditional input-driven strategy".[59]

Conclusion

The outward looking economies of Finland and Sweden, social openness and skills among the people, and yet other "soft" factors may compensate

for higher taxes or other regulations witnessed in these economies that may distort the increase of Internet penetration.

The Internet penetration of Finland and Sweden is to a large extent the result of similar government policies and circumstances in the world economy as these experienced by the United States. In some respects, different government policies, such as education policies, have encouraged Internet use in Sweden and Finland more than in the United States. But the direct impact of education policies is hard to measure.

Thus, it can be argued that the high level of Internet penetration in Finland and Sweden is a result of indirect government policies and many other factors, which have been so powerful that widespread use of Internet has occurred despite many social democratic policies that may be thought to hinder the growth of Internet use. It can be argued that the increased Internet use has occurred rather despite the welfare state not because of it. The Swedish and Finnish experience demonstrates to the would be aspirants of the *information society* that government policies in liberalising the telecom market and ensuring availability and quality of education matter more than making "Internet access a human right" and trying to increase Internet penetration to 100 percent.

Notes

[1] Katzenstein (1985), p. 211.

[2] The meaning of Information economy is broad. In principle, it means economy with high density of knowledge-based industries and knowledge workers. Sometimes, especially in the EU, the expression Information Society is used instead of Information economy. The meaning to the concept will be given later in the paper.

[3] The term "social democratic corporatism" here is used as defined by Garrett (1998). According to Garret, social democratic corporatist countries are Austria, Denmark, Finland, Norway and Sweden.

[4] According to the Heritage Foundation/Wall Street Journal Index of Economic Freedom 2001 the US was fifth freest economy in the world. Available at http://database.townhall.com/heritage/index/indexoffreedom.cfm

[5] The ICT sector includes the electronics industry and IT-related service companies. The electronics industry includes companies that produce electrical products. IT-related service companies comprise wholesale and retail trade, telecommunications, and certain activity-based operations such as software consultants and certain research and development companies.

[6] Hoch et al (1998), p. 250.

[7] Financial Times (2001).

[8] International Data Corporation (2001).

[9] The most important part of Internet dial-up connection in the US is the monthly fee of Internet Service Provider.

[10] The most popular method of connecting to Internet among home-users, e.g. 89 percent of Swedish home users uses dial-up connection with modem. Sika Institute (2001) p. 10.

[11] Sika Institute (2001), p. 45. In Sweden users pay for for using telephone for a local call – a fixed fee, a starting fee for each call and the minute cost, in 2000, for instance, a three minute local call with the largest service provider Telia AB cost 0,21 SEK. Sweden there are also unmetered Internet access providers, such as DSL, so it makes the Swedish case a bit less clear-cut due to the existence of metered and unmetered services depending on the provider. At the same time, OECD (2000) points out that Internet access in Sweden is more expensive than in the US. In Finland there was unmetered access before the rapid rise of Internet users in 1995. For instance Elisa, second largest telecom company in Finland (previously Helsinki telecom) provided umetered access but changed it to metered one in mid-1990s. OECD (2000), p. 33.

[12] OECD (2000) p. 23. E.g. in 1999 average US user of AOL spent online 27 hours per month. Only 14 percent of Finnish users spent that much time or more online in 1999.

[13] OECD (2000), p.33.

[14] Garrett (1998) p. 153.

[15] The Economist (2001), p. 38.

[16] Garrett (1996), p. 96.

[17] Garrett (1998) p. 57

[18] Garrett (1996), 101.

[19] Ibid.

[20] Garrett (1998), p. 153.

[21] Eurostat (2000), p. 193

[22] Eurostat (2001 b), p.14.

[23] Garrett (1998), p. 153-157.

[24] Olson (1982), p. 48. According to Olson encompassing labour unions' members "…own so much to the society that they have an important incentive to be actively concerned about how productive it is; they are in same position as a partner in a firm that has only a few partners."

[25] Garrett (1998), p. 49.

[26] Willner (1999), p. 305.

[27] Ibid

[28] Katzenstein (1985), p 65.

[29] Ibid.

[30] Ibid.

[31] Sproule (2001)

[32] Schneider (2001), p. 6

[33] According to the institutional economist Douglass North, institutions are the rules of the game of a society. Formal

rules are statute law, common law and regulations. Informal rules are customs, conventions, and norms of behaviour and self-imposed codes of conduct.

[34] Global Marticulation Index (1999).

[35] Weber (1976).

[36] Proficiency in English of Finns and Swedes can have a strong impact on development of ICT sector and internetisation.

[37] Denzau & North (1993), p. 15.

[38] Peterson and Sharp (1998), p. 20,

[39] Ibid.

[40] Schmalensee (1992), p. 119.

[41] Schumpeter (1954).

[42] Keohane & Milner (1996), p. 254.

[43] Eurostat (2001) b, p. 14 and Moene and Wallerstein (1999), p. 252.

[44] Sika Institute (2001), p. 102.

[45] Eurostat (2001), p. 35.

[46] Sika Institute (2001), p. 102

[47] Peterson and Sharp (1998), p. 229.

[48] Ibid, p. 226.

[49] Ibid.

[50] Willner, (1998), p. 177.

[51] Vogel (1996), p. 233.

[52] OECD (2000).

[53] Eurostat (1998).

[54] OECD and Statistics Canada (2000), p. xiii.

[55] Sika Institute (2001), p.50.

[56] Ibid, p.26.

[57] Ibid.

[58] Ibid.

[59] Science and Technology Policy Council of Finland (2000).

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Growth Potential and Growth Factor of the IT Company Operating in Estonia

Summary of the study conducted between August – October 2001

Aimar Meltsa, *NOVO BCS*

A lead character in the novel "Necessary but Not Sufficient" (Goldratt, 2001) Scott Duncan, CEO of BGSoft, the largest company in the IT industry, characterises the growth of IT companies by saying that all major players in the industry announce an annual 40% growth rate in every single quarter, which is the current standard of the industry. The "business novel about the theory of constraints in the information systems business" (as the authors have defined the subject) describes the growth problems (market saturation, change in customer demand, product development, etc.) of an international IT company engaged in software development in the years 1998 – 1999. What is the situation in IT companies in Estonia?

The objective and methodology of the study

This study aims to estimate the growth potential of the IT company operating in Estonia and to define the factors that most influence (promote and prevent) growth. The study focused on the IT company engaged in software development.

The study was conducted in the period August-October 2001, and data was collected from managers of IT companies (chief executives, management and supervisory board members) using a structured interview approach. This means interviewees were asked questions within the same framework, which did not exclude a more in-depth addressing of certain questions or aspects. The structured interview comprised open-ended questions as well as estimates against a pre-determined scale. We used the median to generalise numerical estimates, because a result that significantly differs from other results would strongly affect the arithmetic average in a small sample.

Sampling criteria and participants in the study

The size of the sample (10-15 companies) was dictated by the methodology (interviews) and time schedule (about two months) of the study.

The following sampling criteria were applied:

- diversity of the companies studied
- long-term operating experience of the companies studied
- sufficient size (impact) of the companies in the market

Our study concentrated on the estimates of growth potential and growth factors of the IT company **dealing with software development,** which considerably limited the selection of IT companies potentially involved in the study.

Diversity of the sample was achieved by covering the following features:

a) ownership structure (Estonian capital-based vs. foreign capital-based companies)
b) business strategy (companies with a single area of activity (software development) vs. multiple areas of activity (sale of hardware, training, software development, etc.))
c) large companies (turnover ≥ EEK 50 mill. in 2000) vs. small companies (turnover < EEK 50 mill. in 2000).

The "long-term experience" criterion was met, if the company had been operating in the market for at least 5 years.

"Sufficient size (impact)" criterion was met, if the company had been listed in the "TOP 100 IT companies" published by the business daily "Äripäev", and had a minimum turnover (in 2000) of 5 m EEK in software development. *(the only exception being IT Meedia OÜ with turnover of 4.5 m EEK.in software development in 2000 - a rapidly growing company engaged solely in software development, and therefore of substantial interest).*

Tabel 1.

		Ownership Structure	Diversity Business Strategy	Size	Experience Years	Impact (EEK mill.)
1.	Abobase Systems AS	Estonian capital	Multiple activities	Large	10	110.6
2.	Andmevara AS	Estonian capital	Multiple activities	Small	10	29.3
3.	Cell Network Eesti AS	Foreign capital	Multiple activities	Large	9	73.4
4.	Baltic Computer Systems AS	Estonian capital	Multiple activities	Large	12	131.0
5.	Datel AS	Estonian capital	Multiple activities	Large	11	82.3
6.	Helmes AS	Estonian capital	Multiple activities	Large	10	102.9
7.	IT Grupp AS	Estonian capital	Multiple activities	Large	10	108.1
8.	IT Meedia OÜ	Estonian capital	Single activity	Small	5	4.5
9.	Microlink Süsteemide AS	Estonian capital	Multiple activities	Large	5	118.9
10.	NOVO BCS AS	Foreign capital	Single activity	Small	6	8.3
11.	Proekspert AS	Estonian capital	Single activity	Small	8	10.1
12.	Profit Software AS	Foreign capital	Single activity	Small	9	20.0
13.	Reaalsüsteemide AS	Estonian capital	Single activity	Small	8	7.0
14.	Softronic Baltic AS	Foreign capital	Single activity	Small	9	6.7
15.	TietoEnator Eesti AS	Foreign capital	Single activity	Small	7	24.2

The completed sample with underlying criteria is shown in Table 1.

Senior managers of two out of fifteen companies included in the sample chose not to participate, and therefore we have analysed the estimates of thirteen senior managers of the companies with

- diverse ownership structures (69% are based on Estonian capital; 31% are based on foreign capital)
- diverse business strategies (54% are multiple-activity companies; 46% are single-activity companies)
- diverse sizes (46% are large; 54% are small).

Explanation of the term "Estonian IT company"

The term **"Estonian IT company"** is the principal term used in the study, and can be interpreted in more than one way.

At the conference "From Visions to Solutions", seeking an answer to the question how to define "the Estonian company", the Chairman of the Management Board of AS Eesti Telekom, Jaan Männik, proposed the following features:

1) location of the head office
2) "domestic market" – main market where the company operates
3) ethnic nationality of the management and employees
4) name of the company (in what language)
5) ownership structure

In this study, we attempt among other things to compare the growth of companies with differing ownership structures, and therefore the above definition does not fit. Defining a company based on its name and location would be somewhat superficial, so we built our definition on the "input" and "output" of the company. That is, from which labour market does the (main) workforce come and in which market does the company operate.

Within the framework of this study, "the Estonian IT company" shall meet the following criteria:

- the majority of the workforce is hired from the Estonian labour market
- at least part of the products/services of the company (also) go to the Estonian market.

Growth drivers of the IT company

A listed company's growth is driven by the investors' expectations that the value of their investment will rise. However, since Estonian IT companies are not listed on the exchange, is their growth driven by ambition? The majority of managers in IT companies (85%) see the growth of Estonian IT companies as inevitable. The growth drivers (directly independent of the company) may be combined under two notions by four key words:

- **growth as a process**
  market growth – in order to expand or at least to retain its market share, a successful company has to grow as fast as the market leaders do, or at least as fast as the whole market.

- **growth as a project** (size as a result, which gives a competitive edge)
  credibility – large companies (i.e. the companies that have operated longer = "grown larger") have it easier when it comes to expanding customer portfolio, because their credibility is higher.
  concentration of knowledge/skills – large companies provide more integral solutions (it is easier for them to respond to the various requirements of the customer), because large companies have lots of diverse competencies and a wider range of skills.
  ability to use/attract internal and external resources – large companies have more resources and opportunities for development and marketing activities (development of new products/services and taking these to the customer).

Conclusion
In a rapidly growing market, in order to increase/ retain their market share, Estonian IT companies are forced to follow (keep pace with) the growth process. In addition, the companies have to complete the "growth project" and grow to a certain extent and reach a "critical mass", which gives them a competitive edge.

Managers' estimates of the expansion of the IT market

The managers of Estonian IT companies are optimistic about the next few years. At the conference "Business Plan 2002" Allan Martinson, head of the Microlink Group, proposed two scenarios *(Annex to "Äripäev" of 27 September 2001):*

a) 5% growth of the economy will continue; IT sector will grow by 15-20%
b) slowdown in economic growth; 0-growth or a slight fall in the IT market.

Participating managers of IT companies in this study projected neither economic slowdown nor 0-growth in their sector. **The managers estimated a stable 5% growth in the economy, and an average of 12% growth in the IT sector in the years 2002-2003. In their estimates, software development will see an even more rapid growth of 16% on average.** Only one of the interviewed managers forecast 0% growth in the IT sector in Estonia in 2002 – 2003, and his arguments were the following:

- throughout the world, investment in the IT sector has been too optimistic to date, which has already caused setbacks in America and Europe; the effect of these setbacks will show in Estonia in 2002 –2003
- there will be an overall cooling of the economic climate (including Estonia). The IT sector grows, if the companies seek aggressive growth. Companies operating in a highly competitive environment will lose much of their ability to invest in information technologies in a cooling economic climate.

Obviously, counter-arguments can be found to each of the arguments:

- reduced investments in the IT sector (IT companies have problems with finding additional investments) will not directly bring market growth in IT to a standstill. Failure of newly established dot-com companies to earn profit will result in investors being less willing to invest in the IT companies on the exchange, but will not reduce companies' demand (market demand) that information systems, which support corporate business processes, be developed further
- increasingly intense competition in a cooling economic climate drives the companies to look for new ways to improve efficiency and add value for the customer. The companies (market) increase IT investments, seeking a competitive advantage through higher efficiency thereby providing added value.

A manager's ability to analyse various scenarios and his/her preparedness for a rapid and flexible response is a critical criterion for company growth in the swiftly evolving IT area. However, in our study we did not attempt to identify the various scenarios and their probability. Instead, we concentrated on managers' estimates of economic and IT sector growth and the average growth projections of the companies that participated in the study.

According to the managers' estimates , stable economic growth will continue in the years 2002-2003. The IT sector will grow about twice as quickly as GDP. The managers themselves believe that a large majority of the companies included in the sample will continue to be very competitive

(one sampling criterion had been "sufficient size" (impact)). Almost all the managers forecast more rapid growth than in the IT sector as a whole for their own companies (i.e. market capture from the competitors). Only one interviewee projected growth slower than, and another interviewee projected growth similar to, that of the IT sector as a whole.

Growth of the companies participating in the study between 1995 – 2000

In order to be able to determine whether the average 21% growth, projected by the managers, is rapid or slow, we have to take a look at the growth rates of the companies to date [1].

The average growth rate during a specified period of time was found by the formula:

$$g = (T_n / T_1)^{1/n} - 1 ,$$

where

g = growth rate (%)
T1 = turnover in the initial period
Tn = turnover in the final period
n = number of periods.

1) In our study, we compared the growth rates of participating companies with the growth rates in the software development (part of the IT sector), the IT sector and the Estonian economy. In addition, we attempted to find common features in the acceleration and deceleration of the growth rates of the companies studied (continuity of growth, general trend in prospect). Given this objective, we considered it not relevant to compare company growth in absolute values.

Our attempts to identify common features in the group of companies whose growth rates were above the average, and in the group of companies whose growth rates were below the average (in 1995-2000), led us to the following findings:

1) **In the faster growing group single-activity (software development) companies prevail** (75%), whereas in the slower growing group (Companies below Average) multi-activity companies prevail (86%)
2) **In the faster growing group, small companies prevail** (turnover less than EEK 50 mill.) (75%), whereas in the slower growing group large companies prevail (turnover more than EEK 50 mill.) (71%)
3) **The faster growing group had more foreign capital-based companies,** compared to the slower growing group (75% of foreign capital-based companies are in the group of faster growing companies).

Conclusions

1) In the years 1989-1992, IT companies were mainly founded in Estonia on the basis of Estonian capital, and were mostly multi-functional (i.e. they were engaged in hardware and software sales, training and software development). By the beginning of the period examined in the study (1995-2000), these companies had put behind them the first phase of rapid "take off growth" and the second phase of "accelerated growth", and had entered into the third phase of more stable and tranquil growth.
2) Foreign investments reached the Estonian IT sector in the years 1994 – 1996, when the economic environment had stabilised and credibility had risen. Joint ventures as well as subsidiaries of large groups were established in Estonia. In the beginning of the examined period, the established companies were in their first phase of rapid growth, and therefore they moved ahead faster than the companies that had been established in the years 1989-1992.
3) By 1995 – 1996 there was already sufficient demand for software development in the market (this area grew faster than hardware and software sales). For this reason single-activity software development companies were also established on the basis of Estonian capital. Market demand grew fast and so did the newly established small companies (much more rapidly than the earlier founded multiple-activity companies).

The growth phases of an IT company are illustrated in (the continuous line shows the average actual growth rates of companies included in the sample, and the broken line is the smoothed curve). The growth periods of companies may be divided as follows:

- years 1 – 3 - take-off period (growth 100% - 300%)
- years 3 – 6 - accelerated advancement (growth 50% - 100%)

Table2.

IT Company Growth Factors

Companies with Estonian owners	Companies with foreign owners
1. Market expansion/contraction	1. Market expansion/contraction
2. Availability of competent workforce	2. Application of novel technologies
3. Enhancement of the organisation and management	3. Economic environment
…	… …
9. Collaboration with partners	9. Availability of financial resources

- ❑ years 6 – 9 - calming down period (growth 20% - 50%)
- ❑ year 9 – … - stability period (growth 10% - 20%)

The first period is a period of surge, followed by deceleration in the second and third periods (however, the growth remains fast). The fourth period is a period of stable organic growth.

It is estimated that the growth rates of the companies will have levelled off by the years 2002-2003. The average growth forecast for 2002-2003 was approximately the same for the group with above average growth rates as well as for the group with below average growth rates (in 1995-2000), ***approximately* 21%.** The results of the study show that managers foresee **stable** (constant) **growth** in their companies in the next few years. Only one interviewee projected accelerated growth and one projected decelerated growth in the company.

Projected average growth in these companies for the next few years is about two times slower (app. 21%) than their average growth to date - in the years 1995-2000 (45%). Slower average growth in 2002-2003 may be explained by the fact that all those companies participating in the study will enter their third and fourth growth phases at that time (app. 20% growth).

At the conference "Business Plan 2002", Allan Martinson forecast that large companies (those with a turnover of more than EEK 100 mill.) and small companies (those with a turnover of less than EEK 10 mill.) would be the main growth engines in the IT sector *(Annex to "Äripäev" of 27 September 2001, p. 10)*. The results of our study support this statement. If we group our sample into small, medium and large IT companies by applying the same criteria, we see that **small and large companies are planning for faster growth in 2002-2003, compared with medium-sized companies** (with a turnover between EEK 10 mill. -100 mill.):

- ❑ average growth projection of small companies 22%
- ❑ average growth projection of medium companies 16%
- ❑ average growth projection of large companies 23%.

The study also indicated that growth is no longer the most significant goal for the companies participating in the study; neither currently nor in the near future (in their third-fourth growth phases). As regards goals, reference was most frequently made to **profitability** (28%). Growth was defined more as a means of boosting the company's value or to retain the company's market position. Recurring key words were the need to **achieve and maintain high quality and create an environment which is attractive to the employees.**

Growth factors

The managers of the IT companies participating in the study believe that external factors (independent of the company) are those that affect the growth of IT companies in Estonia most. For example:

1) **market expansion or contraction, and**
2) **availability of a competent workforce**

Third and forth come the factors that directly depend on the company:

3) **application of novel technologies**
4) **enhancement of the organisation and management**

Somewhat surprisingly, collaboration with partners was considered as the least important in seeking growth (*"IT Company Growth Factors"*).

Table 3.

Companies with Growth Rates Above Average	Companies with Growth Rates Below Average
Factors that have promoted IT company growth	
1. Market expansion	1. Market expansion
2. Market launch of new products/services	2. High profile, positive image
3. Application of new technologies	3. Extensive collaboration with partners
Factors that have prevented IT company growth	
1. Market contraction	1. Limited availability of labour resources
2. Limited availability of labour resources	2. Lack of novel management ideas
3. Low profile, neutral image	3. Market contraction

Figure 4. compares estimates made by groups of faster growing and slower growing companies (1995-2000). The former group attributes a little more influence to the "market expansion or contraction" and "availability of competent workforce" than the latter group does.
While the estimates of both groups of companies coincided with regard to factors independent of the company (external), their estimates of company-dependent factors (internal), which ranked only third in terms of their effect, differed. The faster growing group ranked **"application of novel technologies"** as the third growth factor, whereas the slower growing group ranked the **"enhancement of the organisation and management"** as third.

A comparison of growth factors ranked by the managers of Estonian capital- based and foreign capital-based companies is given in *Table 2*.

The managers of both Estonian capital-based companies and foreign capital-based companies listed external factors among the top three factors that affect a company's growth most. As regards internal factors, the most influential internal factors are "enhancement of the organisation and management" for the managers of the companies where the owners are Estonians and "application of novel technologies" for the managers of the companies where the owners are foreigners. Apparently, such ranking (of internal factors) are substantially affected by previous experience. The companies with Estonian owners are newly established organisations in their development stage, their experience is not that broad and all successes or failures have a stronger effect and role. Foreign owners are likely to see the "transfer" of the parent company's experience as the first means of organisational development. Risks and the need to learn play a smaller role, and therefore the "enhancement of the organisation and management" is not seen as such an important growth factor. On the other hand, IT development in Estonia has a shorter history, compared, for example, with our Nordic neighbours Finland and Sweden, so the solutions that are used are relatively novel. For foreign owners, the negative experience of "insufficient application of novel technologies" is more relevant, and therefore novel technologies have a higher priority as a growth factor.

The results of the interviews suggest that the top two factors, which have most **promoted** IT company **growth,** are:

1) **market expansion**
2) **high profile, positive image**
   ("Factors that Promoted IT Company Growth")

The results of the interviews suggest that the top two factors, which have most **prevented** IT company **growth,** are:

1) **limited availability of labour resources**
2) **market contraction**
   ("Factors that Prevented IT Company Growth").

In the years 1995-2000, along with market expansion, innovation was another growth engine in the companies whose growth rates were above average (**market launch of new products/services** and **application of novel technologies**). Whereas, **positive image** and **collaboration with partners** were growth engines in the companies whose growth rates were below average (see *Table 3*). According to manager estimates, while market expansion promoted company growth, market contraction was the key factor that prevented companies from growing. **Limited availability of**

Table 4.

Actions for Growth		Factors that had Promoted Growth	
1	Adaptation to customer's demand	-	
2-3	Increased role of the customer	-	
2-3	Extended customer portfolio	Market expansion	1
4-5	Extended collaboration networks	Extensive collaboration with partners	3-4
4-5	Market launch of new products/services	Market launch of new products/services	3-4
Actions for Growth		**Factors that had Prevented Growth**	
1	Adaptation to customer's demand	Market contraction	2
2-3	Increased role of the customer	Market contraction	2
2-3	Extended customer portfolio	-	
4-5	Extended collaboration networks	Insufficient collaboration with partners	3-4
4-5	Market launch of new products/services	Lack of new products/services	5-6

workforce put the brakes on for both faster and slower growing companies.

The difference between faster and slower growing companies lies in internal constraints. While the former saw **low profile** as the key factor preventing their growth, the latter saw as such the **lack of novel management ideas.**

If we compare our interviews' results with the findings of the Estonian Institute of Economic Research (Estonian Institute of Economic Research, Information Technology Survey), which measured the factors that **prevent IT company growth** (turnover), we see that critical factors coincide. With the reservation that the Information Technology Survey measures only external factors, independent of the company.

The top three constraints to the growth of turnover were:

- (tough) competition in the sector *(market expansion/contraction)*
- low demand in the domestic market *(market expansion/contraction)*
- shortage of qualified labour *(limited availability of labour resource)*

Whereas, the estimates of all three factors show a small but steady growth trend (i.e. intensifying competition in winning orders and hiring workforce).

Conclusions

1) *The development of the IT company in Estonia is most influenced by*
   - *market expansion/contraction*
   - *availability of labour resources*
   - *application of novel technologies*

   Thus the factors, which are independent of the company, have a stronger effect than company-dependent factors. Market expansion and contraction is the factor, which affects company growth most and in both directions (by promoting and preventing company growth, respectively). Insufficient availability of labour resources is primarily a negative constraint factor; sufficient availability of labour resources is not a major growth engine in the IT company. The strongest catalyst for growth, which depends on the IT company, is the ability to apply novel technologies.
2) ***In the group of companies with growth rates above average,*** *smaller and mostly single-activity organisations dominated (software development).* ***Innovative*** *capabilities and ability to apply novel technologies is the competitive edge smaller companies have. Along with external factors, low profile was what slowed the growth of smaller and faster growing companies. The enhancement of the organisation and management problems were not yet relevant for small companies in their early phase of growth.*

   In the group of companies with growth rates above average, *large and mature, mostly multi-activity organisations dominated. These companies had attracted a certain amount of attention from the public, and had captured a market position that underpinned their continuous growth. The structure and management of the companies had grown more sophisticated, and therefore the organisational enhancement and application of efficient management tools had become a prerequisite for their continued growth in a later phase.*

Table 5.

Growth Factors	Actions for Growth
Companies with growth rates above average	
Factors that have promoted IT company growth	
1. Market expansion	Extended customer portfolio (1)
	Increased role of the customer (3)
2. Market launch of new products/services	Market launch of new products/services (2)
3. Application of novel technologies	-
Factors that have prevented IT company growth	
1. Market contraction	Increased role of the customer (3)
	Penetration of new markets (5)
2. Limited availability of labour resources	-
3. Low profile, neutral image	Promoting/changing corporate image (4)
Companies with growth rates below average	
Factors that have promoted IT company growth	
1. Market expansion	Extended customer portfolio (2-4)
	Increased role of the customer (2-4)
2. High profile, positive image	-
3. Extensive collaboration with partners	Extended collaboration networks (2-4)
Factors that have prevented IT company growth	
1. Limited availability of labour resources	Extended collaboration networks (2-4)
2. Lack of novel management ideas	Organisational enhancement, application of novel ideas(5)
3. Market contraction	Adaptation to customer's demand (1)
	Increased role of the customer (2-4)

Actions for continued growth

Those managers interviewed intend to seek continued growth for their company primarily through market (customer)-oriented activities and collaboration and innovation. Comparison between the planned actions and the factors that had most promoted/prevented company growth, leads to an interesting conclusion. **The managers plan to enhance, first and foremost, their companies' strong points,** i.e. they attempt to strengthen the effect of the factors that had promoted their growth in the first place, rather than pay equal attention to the constraint factors *(see Table 4.)*.

Although **market expansion/(contraction)** is at the top of both growth promotion and growth prevention factors (which may be interpreted as intensifying competition and decelerating growth in a market that is still expanding), it ranks first as a facilitator of and second as a constraint on growth. **Market launch of new products/ services** (or lack thereof) has rather promoted growth (positions 3-4) than prevented (positions 5-6). **Limited availability of labour resources** has been seen as the strongest constraint on growth. However, **neither hiring consultants/top specialists in the foreign market nor head-hunting" of rivals' top specialists,** both directly related to labour recruitment, were mentioned among the top five activities required for growth. Apparently, **buying up competitors and their merger with the company** would have partly alleviated workforce shortage problems, but this activity was not mentioned among the top five activities either. (True, it may well be that the two last-mentioned activities were not listed because they were sensitive and/or confidential. Which means that their absence reflected an unwillingness to disclose such plans rather than a lack of such plans). The constraining effect of the **limited availability of labour resources** on company growth is partly alleviated by managers' plans to **extend collaboration networks.** Company growth through collaboration with partners is probably slower and more complicated in the short term, yet more stable and synergetic in the long term.

In order to demonstrate, which factors companies intend to address most, we have shown links between the factors (top three), which have promoted/prevented growth, as well as actions designed to promote growth (top three) in *Table 5.* The table presents separately generalised estimates in the group with growth rates above average and

in the group with growth rates below average (in 1995-2000).

Comparing plans for growth produced by the managers of Estonian capital-based and foreign capital-based companies, showed that Estonian companies are more prepared to adapt (to customer's demand), while companies in foreign hands are more willing to seek new markets. Estonian companies are also more prepared to enhance the organisation, while companies in foreign hands are more inclined to alter a company's image and introduce quality systems.

Conclusions

1) In the short term (in the years 2002-2003), the prevailing majority of companies plan organic growth. The growth projections (app. 20%) as well as action plans (merging with competitors was mentioned only once as a significant action for growth, and even then not as a No 1 priority) are proof of this. But, as said before, non-disclosure of plans may be a sign of their confidentiality.

2) The activities directly related to the expansion and retention of company market share are seen as a priority. Plans to grow faster than the market (app. 9%) as well as the priority of action plans (adaptation to customer demand and the extension of customer portfolio are defined as substantial actions) prove this.

3) More attention is paid to the promotion of strong points, rather than remedying weak points (actions to remove (internal) growth constraints have been ranked 4th-5th, and not 1st-2nd).

4) Smaller and faster growing (in 1995-2000) companies pay more attention to innovation (market launch of new products/services), whereas larger and slower growing (in 1995-2000) companies prefer to enhance their organisation and to expand collaboration

5) Larger organisations consider it more important to adapt to customer demand than smaller organisations do. There may be several reasons for this:

- *smaller organisations believe that they are flexible enough, and do not see adaptation to customer demand as a bottleneck.*
- *smaller organisations define their activities in a specific field where competition is weaker than in the IT sector as a whole*
- *smaller organisations have less resources (opportunities) to adapt to customer (special) requests (a standard solution requires less (additional) resources than a customer's "special order" does).*

Combining conclusions 4) and 5):

Larger organisations are more customer-focused ("providing to whom"), whereas smaller companies are more product/service-focused ("providing what").

Specific actions for growth

About half (54%) of the interviewed managers named specific actions, which have been taken to ensure growth. Companies with slower growth rates in 1995-2000 have been more active (app. 70% have taken specific steps to ensure growth). In the group of faster growing companies the relative share of active companies was half (app. 34%). The actions for growth were related to:

- **the enhancement and change of the organisation** (restructuring of the organisation and its departments)
- **management** (application of Balanced Score Card, decentralisation)
- **market and customers** (customer relationship management)
- **performance/work arrangements** (project management methodology)

Whereas most attention was paid to the organisation's enhancement and improvement of efficiency.

A manager's acquisition of managerial knowledge and new ideas, which they implement for growth, mostly occurs through training courses, but the independent study of literature is no less significant. Practical knowledge is considered important, and so is communication with colleagues and partners (the third most important source of information). The Internet, as an extensive databank of knowledge, is seldom used for finding new managerial ideas.

Conclusion

Development is so rapid in the phases of take-off growth and accelerated growth (growth periods II and I), that companies are not dealing with the assurance of growth as yet. Rapid growth may lead to the need to streamline (internal) operating processes (e.g. introduction of project management methodologies) in the growth phases II-III, but there is no active promotion of organisational development and customer/market-oriented activity yet. In the calming down and stability phases (growth phases III and IV), when the organisation

has grown larger in size and more sophisticated in structure, organisational development and implementation of novel management methodologies becomes relevant. Company growth is slower in this period ("fewer customers queuing up behind the door") which pushes them into active promotion of customer and market-oriented activities.

Summary

The study conducted in August-October 2001 aimed at estimating the growth potential of the IT company operating in Estonia, and defining its (promoting and preventing) growth factors. The study concentrated on IT companies engaged in software development. Estimates by senior managers of thirteen companies with different ownership structures, operational strategies and sizes were analysed in the study.

On the basis of the results, the growth periods of IT companies may be divided as follows:

- *year 1 – 3 - take-off period (growth 100% - 300%)*
- *year 3 – 6 - accelerated advancement (growth 50% - 100%)*
- *year 6 – 9 - calming down period (growth 20% - 50%)*
- *year 9 – ... - stability period (growth 10% - 20%).*

In a rapidly growing market, the Estonian IT companies are forced to follow the growth process (growing with the market), and to complete the "growth project" (grow by a definite amount, reach the "critical mass", which gives them a competitive edge).

The managers of Estonian IT companies were optimistic about the next few years, and forecast neither slowdown of economic growth nor 0-growth in the IT sector. According to the managers interviewed, the stable 5% economic growth will continue; the IT sector will grow at an average of 12% per year in 2002-2003, and the software development area will see even faster growth – 16% on average. The development of the IT company in Estonia is most influenced by:

- *market expansion/contraction*
- *availability of labour resources*
- *application of novel technologies*

So, factors independent of the company play a bigger role than factors dependant on the company. Market expansion/contraction was the most influential growth factor, with a bi-directional effect (promoting and preventing company growth by expanding and contracting, respectively). Insufficient availability of labour resources had, above all, a negative, constraining effect; sufficient availability of labour resources is not a principal growth engine in the IT company. The skill to apply novel technologies is the strongest company-dependant catalyst for growth.

In the period under study (the years 1995-2000), innovative capability (ability and skill to develop novel technologies) provided the competitive edge of faster among growing (smaller, usually concentrated on a single activity - software development) companies. Larger, mainly multi-activity companies built their growth on high profile and market position.

About half (54%) of the interviewed managers have implemented specific action plans aimed at growth through the promotion of organisational development and management. Primarily, actions for growth were concerned with an organisation's structural reorganisation, performance management, customer relationship management and project management. Most attention was devoted to the improvement of organisational efficiency.

In the nearest future (in 2002-2003), the prevailing majority of companies plan organic growth, and their growth projections (app. 20%) and action plans (merging with a competitor as a significant action for growth was mentioned only once) show this. Primarily, attention is paid to an external factor, independent of the company – market expansion - with a view to increase/retain one's market share. Adapting to customer demand and extension of customer portfolio are defined as priorities. As regards internal, company-dependant factors, the managers devote their attention to the enhancement of a company's strong points. They attempt to strengthen the effect of the factors that had facilitated their growth in the first place (which for larger companies is their market position and reputation and for smaller companies is innovation).

In the next few years (in 2002-2003), IT company managers plan a 21% growth, which is twice as

slow as the average growth of the same companies between 1995-2000 (app.45%).

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E-Supply Chains: Competitive Advantage?

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Most academia and practitioners have agreed by now that the new e-technologies, even if revolutionary, have not fundamentally changed our economy and that there is no 'new economy' as such. The new technologies are just means to additional value creation; to create additional value, these new technologies should be implemented in the right areas, at the right time, and for the right reasons. Supply chain management seems to be one of the "right" business areas where the potential benefit of new e-technologies is not questioned.

The purpose of this paper is to analyze whether new technologies in the supply chain management area can be a source of sustainable competitive advantage. First, modern theories and practices in supply chain management are discussed, focusing on the Continuous Replenishment Program (CRP), which is also known by the term Vendor Managed Inventory (VMI). Then, the benefits and drawbacks of the VMI strategy are analyzed in more detail. Finally, the potential for using a VMI system in smaller economies and in smaller companies is examined, using the Telema VMI system in Estonia as an example.

Supply Chain Management and New Technologies

According to one of the latest definitions, **supply chain management** embraces all activities under demand fulfilment: sourcing, manufacturing, service provision, distribution, and planning for these activities (Bell, 2001). Of course, planning demand fulfilment should be done in harmony with business objectives being pursued by the other half of the organization, the generation of demand: marketing, sales, customer management, etc.

When Business-to-Business (B2B) e-commerce first emerged, it promised to revolutionize supply chain processes – but as a "technology-only" solution focused on cost reduction rather than capability enhancement (Taylor, 2001). As Alain Fein from Pembroke Consulting states, "By now, it should be clear to all but the most naïve proponents of e-commerce that distributors will not disappear. Despite impressive press releases to the contrary, the vast majority of start-up e-businesses are floundering as they seek to attract a critical mass of buyers and suppliers. The combination of existing channel relationships and Internet-resistant buyers has brought a new degree of market sobriety to e-business in the supply chain" (Fein, 2000).

The next generation of B2B commerce is focused on uniting suppliers and retailers in closer relationships—collaborating over the entire supply chain. The basic definition of **collaboration** in business is trading partners working together and sharing information to benefit both companies. Through a collaborative network, companies can achieve visibility across their entire logistics operation, empowering them to optimize the deployment of assets by communicating effectively with new and existing trading partners. The result is shared efficiencies and cost savings throughout the supply chain.

Over the last twenty years, the majority of large organizations have spent many millions of dollars implementing Enterprise Resource Planning (ERP) systems, making ERP the most prevalent software tool deployed. ERP is successfully used to standardize the financial and transactional processing needs of the organization. However, companies have not focused on information flow between and across trading partners. Andrew White (Logility, Inc) has worded the question: "ERP is internally focused and ensures all departments talk the same language. But what about their customers or suppliers? What ensures that all parties talk the same language there?" (White, 1999).

Electronic integration has provided the means for enabling true collaboration, by moving goods more quickly through the supply chain to the market. The introduction of Electronic Data Interchange (EDI) systems over ten years ago was the first

step towards achieving greater integration between companies.

The electronic information exchange made possible Efficient Consumer Response (ECR), Quick Response (QR), Continuous Replenishment Programs (CRP) and other similar supply chain management strategies. These efforts in turn have had a great impact on today's latest supply chain management trends, such as Collaborative Planning, Forecasting and Replenishment (CPFR).

In this paper, the strategy under closer examination is the **Continuous Replenishment Program** (CRP). CRP could be viewed as a stepping-stone towards a collaboration process or part of such a process. Its scope is not as wide as the scope of CPFR, but in many situations CRP alone is found to be an extremely efficient method of controlling the supply chain.

CRP describes a process by which the responsibility for ordering products is transferred from the retailer (or wholesaler) back to their suppliers. This will typically involve a retailer sending inventory data (consumer demand/withdrawals, on-hand and on-order) electronically to suppliers on a daily or weekly basis. The supplier uses this data to put together the most efficient and cost effective order according to the inventory management objectives agreed to by the retailer and the supplier (Intentia, 2001).

This sharing of data typically results in more efficient movement of products, better preparation for promotion events, reduction in inventory and improved service levels. While the primary benefit of CRP is related to the reduction of excess inventory in the supply chain, there are many other significant benefits for both wholesalers and suppliers. CRP is also frequently referred to by the term Vendor Managed Inventory.

Vendor Managed Inventory

Vendor-managed inventory (VMI) is one of the most widely discussed partnering initiatives for improving multi-firm supply chain efficiency. In a VMI partnership, the supplier makes the main inventory replenishment decisions for the consuming organization. This means that the vendor monitors the buyer's inventory levels (physically or via electronic messaging) and makes periodic resupply decisions regarding order quantities, shipping, and timing. VMI focuses on cutting costs by using the most efficient means for replenishing products in stock.

The objectives of VMI are to (Intentia, 2001):

- Decrease out-of-stock inventory
- Increase sales
- Improve customer service
- Increase gross margins
- Stabilize vendor's production
- Reduce overall inventory in the supply chain.

Also known as supplier-managed inventory, VMI was popularized in the late 1980's by Wal-Mart and Procter & Gamble. Successful VMI initiatives have been reported by other companies in the United States, including Campbell Soup and Johnson & Johnson and by European firms such as Barilla, the pasta manufacturer. Industries facing complex situations have been among the last to adopt automated VMI. For example, supermarkets have typically taken longer than department stores to implement VMI. There are often more than 20 000 items in one store, which have meant greater complexity in tracking and using sales data. Today, VMI automation at its peak can be seen in industries such as automotive and paper manufacturing (Intentia, 2001).

VMI Benefits

Success in supply chain management usually derives from understanding and managing the relationship between inventory cost and the customer service level (Waller et al, 1999). A traditional answer to addressing customer service problems has often been to increase inventories. The more inventory there is throughout the supply chain, the smaller the probability that consumers will have to face products being out of stock. However, inventory bears a high cost in terms of capital consumption and expense. In the food and beverage industry, higher stock cannot be the solution, since issues such as shelf life and promotions make it impossible to simply increase inventory.

VMI is focusing on trying to find the minimum level of inventory in the supply chain, minimizing the stock-out probability at the same time. VMI benefits suppliers and customers alike. Figure 1 organizes some of the VMI benefits:

Figure 1. Vendor Managed Inventory (VMI) benefits suppliers and buyers alike.

Supplier benefits:	Customer benefits:	Dual benefits:
❑ Visibility to the customer's point-of-sale data simplifies forecasting. ❑ Promotions can be more easily incorporated into the inventory plan. ❑ Customer ordering errors, which in the past would often lead to a return, are reduced. ❑ Stock level visibility helps identify priorities (replenish stock versus a stock-out). ❑ The supplier can see the potential need for an item before the item is ordered.	❑ Fill rates from the supplier, and to the end consumer, improve. ❑ Stock-outs and inventory levels decrease. ❑ Planning and ordering costs decrease since the responsibility is shifted to the supplier. ❑ The overall service level is improved by having the right product at the right time. ❑ The supplier is more focused than ever on providing superior service.	❑ Data entry errors are reduced due to computer-to-computer communications. ❑ Overall processing speed is improved. ❑ Both parties strive to offer better service to the end consumer. All parties involved benefit when the correct item is in stock when the end consumer needs it. ❑ A true collaborative partnership is formed between the supplier and the customer.

Source: www.vendormanagedinventory.com/benefits.htm

The companies who have implemented VMI have reported solid cost reductions and other benefits, leading to increased profits. According to Intentia, a company offering e-collaboration solutions, VMI implementation has resulted in:

- ❑ Eliminated repetitive purchasing activities (85% reduction in receiving costs)
- ❑ Lowered cost of processing claims (95% reduction)
- ❑ Reduced inventory (40% to 50%)
- ❑ Increased inventory turns (from 3.1 to 5.5)
- ❑ Solidified customer-vendor relationship.

An additional example of achieved results was highlighted in a KSA report, which estimated that, for dry grocery, inventory at a wholesaler's warehouse could go from an average of 40 days down to an average of 12 days supply (Kurt Salmon Associates, 1993).

Long-term VMI benefits include more efficient promotion handling, improved product introductions, more efficient product distribution and an eventual increase in sales.

Issues with VMI

Collaboration requires companies to look beyond the technology. There are two main potential problem areas in implementing VMI:

1. Strategic level problems;
2. Operational level problems.

At the strategic level, a high level decision must be made about how the company wants to position itself (KPMG, 1996). Are there definite benefits to stronger supply chain cooperation? Has a top management level decision been made to share the necessary information? Many companies have not yet recognized the importance of supply chain and will not give supply chain managers the necessary authority and support needed for VMI implementation.

Operationally, job functions, processes and performance measurements will all need to change. Resistance will be felt from employees who fear change (most employees do). The new organizational culture must acknowledge that the consumer has ultimate power, that the supply chain itself is a competitive tool, and that the cooperation between trading partners is essential.

There are some other potential pitfalls when implementing VMI (KPMG, 1996):

1. Vendor's administrative costs may increase, and more work needs to be done, at least initially.
2. VMI is hard to use with volume discounts and special pricing—the agreements must be worked out before implementing the system.
3. The retailer risks loss of control or flexibility, especially when procedures are new and understanding and ability to control procedures is low.
4. The supplier must take one time volume reduction as inventory is withdrawn from the supply chain.
5. In the short run, the system might seem very complicated, while the roles of employee, vendor and customer are yet unclear.

Both parties must understand it is a learning process. Errors will occur, and for that there need to be clear rules concerning how to deal with them. Industry results show, unfortunately, that many retailers have canceled VMI programs. The fault is often shared equally between the parts to the process. Truly effective VMI programs depend on strong partnerships with active communication, information sharing, joint problem solving and commitments to continued development (Intentia, 2001).

VMI in Estonia: Telema Solutions

By turning the focus now to Estonia, the question of VMI strategy suitability in small economies with relatively advanced technology but small enterprises can be examined. By small enterprises, firms with low turnover and profit, in terms of absolute numbers, are referred to. These firms just cannot afford to implement the most advanced ERP systems, or to begin using EDI for data exchange (both components of a classical VMI system). Could VMI still be implemented?

Telema Group, an Estonian company founded in late 1999, has developed a B2B Internet exchange that brings together Estonian retailers, wholesalers, producers and logistics firms. Telema's system allows different enterprises to exchange electronic documents—purchase orders, invoices, shipping notices, etc—from one management information system, e.g., Navision, to another, e.g., Scala. Telema's main services are Telema Ordering System, Telema Mobile Sales System, and Telema VMI System.

Telema Ordering System is targeted at big retailers and retail chains that want to improve their inventory management and procurement system, and wholesalers or producers that want to optimize their ordering process. The buyers enter orders in their own management information system (MIS), Telema forwards it automatically to suppliers while converting it to the supplier's MIS format so that the supplier can process orders in their own MIS.

Telema Mobile Sales System, known as Telema MMT, is targeted at big wholesalers and producers who are used to ordering for their clients at site. The Telema MMT application allows supplier's sales agents to connect to the central company's database over the Internet (using PDAs and mobile phones) from remote locations to insert real-time purchase orders for clients, check inventory levels, clients' credit standing, etc. Interestingly, Telema MMT can be viewed as a form of VMI, suitable for suppliers whose clients are not technologically advanced at all.

Telema VMI System is targeted at retailers who are willing to hand over inventory control to suppliers, and suppliers who want to control their inventories at retailers. The retailer's MIS creates sales reports concerning sales of a supplier's products at retailer every day (or week, as agreed) and Telema forwards it in a format compatible with the supplier's MIS. Based on that report, the supplier will make the decision to replenish the merchandise at retailer.

Telema VMI is an ASP service

Once companies have picked VMI as their supply chain management strategy, they face three viable alternatives (Young, 2001):

- Develop a custom system internally,
- Install and implement a traditional VMI software system,
- Implement an Internet-based VMI solution, using an Application Service Provider (ASP).

When *developing a special system internally,* it is important to keep in mind that the trading partners should view the system as adding value to them as well. The VMI system should handle lower demand, smaller lot sizes and different transaction costs. These issues would be different for any trading partners, and would likely vary from partner to partner. There is the need to worry about data definitions for each of the data elements exchanged. Trading partners use different software packages to run their businesses; each of these packages has its own definitions for the base data. All of these data elements would somehow have to be mapped into the software for each of the trading partners. Developing the system internally implies a lot of free internal resources in terms of IT specialists, time, and money. This, as alleged, is not usually the case with Estonian companies.

The second option is *implementation of classical VMI software:* for that, a company needs an ERP system in place, plus necessary EDI applications. This is costly: ERP system implementation expenditures start at around a hundred thousand US dollars. EDI implementation is not inexpensive

either. A Traditional VMI software implementation approach would require hardware investment, IT staff, and most importantly – time. Installation, testing and customization of such a package would take months, even up to a year. On the positive side, a traditional VMI software package supplier would provide expert knowledge of distributor inventory management. Nevertheless, issues for individual trading partners remained.

Using an Application Service Provider (ASP) could combine best-of-breed software with the necessary IT support services. The software is built for VMI and allows clients to treat each trading partner uniquely. The software service provider masks the data content variations and MIS considerations from the user of the system. This would free up the trading partner's resources to focus on on-going business relationships, rather than dealing with software installation and maintenance.

Timing is another deciding factor in the decision. Once the benefits of VMI are sold to key trading partners, the organization should be committed to realizing the promoted vision. The ASP approach proves to be advantageous, since it allows for a much quicker implementation.

Renting a VMI solution from an application service provider allows for minimizing upfront time, resources, and costs. This enables even the smallest companies to implement the new supply chain management strategies and reap the benefits associated.

There are many companies in the world offering VMI ASP services. In Estonia, Telema offers the only VMI solution; and it is an ASP solution. The most well known Telema VMI system implementation integrates Baltika (an apparel manufacturer) and Tallinna Kaubamaja (one of the biggest retail chains in Estonia). Both sides report excellent results. Tallinna Kaubamaja and its subsidiary, A-Selver, have expressed strong interest in implementing VMI with many of their other suppliers. Suppliers on the other side (Kalev, the confectionary; and Saku, the brewery, among others) are contemplating the move.

Conclusions: the Future of E-Supply Chains

While no technology in itself can be a source of sustainable competitive advantage, new technologies may be the critical success factors in implementing a new business strategy that does give rise to sustainable competitive advantage.
Gillian Taylor said in a recent supply chain management conference: "In the excitement around the Internet and the rush to implement 'me too' technology, alignment of technology strategies with business objectives and ways of working are not always achieved. It is important for organizations to establish a clear set of objectives and performance criteria before choosing technology solutions." (Taylor, 2001).

VMI is one of the new business strategies that would not have been possible without the new technologies. VMI makes suppliers and retailers collaborate towards the same goal—selling more products to the end consumer more efficiently. This changes the supplier's focus from pushing the product on the retailer to thinking about the end customer. For those companies that have properly implemented the new strategy, VMI has produced remarkable results. Sales, service and profitability have all been improved by changing the traditional trading relationship.

The era of Internet and new standards have made it possible to implement VMI and similar strategies in smaller economies and for smaller companies just as successfully, sometimes even to greater benefit. One of the real-life examples of a successful electronic supply chain system—integrating small-scale suppliers and retailers—is the Telema VMI ASP service in Estonia. At the moment, the first results in increased sales and decreased costs for both sides to the new business relationship are already visible, long-term benefits remain to be seen.

Can the e-supply chain strategies be a source for sustainable competitive advantage? Implemented and interpreted incorrectly, the new technologies might be just "new technologies". But managed properly, e-supply chain strategies will play a critical role in a collaborative approach to doing business, as well as help companies improve their bottom-line results.

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E-learning as a Learning Community Tool

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Abstract

E-learning opportunities and goals are discussed in the context of different learning paradigms. Innovative learning, learning organization and knowledge management concepts are presented as part of the framework for specifying e-learning priorities and methods in the post-modernist society. An example of applying e-learning by using WebCT tools in the course "Practical aspects of doing business in the Baltics" is presented and linked to challenges of developing competence for participation in international learning communities.

Introduction

Development of new information technology and multimedia applications has initiated discussions concerning the impact of these technologies on the content and format of higher education and executive training. Conflicting views have been expressed by education practitioners but also by trainees. Sometimes the use of Internet, computer-based quizzes, CD-s and video equipment are treated as key features of the modern training process, automatically proving high quality of instruction. The other extreme is to label these non-traditional training tools a temporary fad that ignores the human touch and importance of direct communication in the educational environment. The meaning and functions of e-learning and the use of modern communication tools are sometimes assessed only in

the narrow context of convenience and cost-efficiency. You can present an overseas "management guru" without paying his or her air fare and a handicapped person does not need to move from his or her home to the university building in the city centre.

Deeper analysis of the meaning and functions of e-learning should start from understanding the learning paradigm which serves as the framework for assessing new educational technologies.

Learning paradigms

Empiricism can be traced back to Aristotle and other ancient Greek philosophers.
The view that nature and human behaviour can be influenced by reason that is based on observations is one of cornerstones in this philosophical tradition. The radical empiricist position represented by logical positivism has treated scientific investigation of empirical facts as the only source of real knowledge (Mitchell, 1999, 221-224). The justification of knowledge in empiricism is provided by observations and deduced from them.

Learning means an accumulation of observations and giving them reasonable explanations. This learning paradigm is also linked to behaviourism in social sciences. The learner has to remember and be able to reproduce useful techniques and action rules which in the most efficient way lead to the objective. One should always try to find one single truth. Learners themselves are regarded as objects under this paradigm. Training means giving negative feedback to trainees if they make mistakes and a trial-error-feedback chain is supposed to lead ultimately to the optimal behaviour.

E-learning can be used as a tool for enhancing the efficiency of the empiricist paradigm. Computer-aided multiple-choice tests are more easy to check and feedback can be given more rapidly than by using paper versions of similar tests. Computer games simulating manipulations with moving objects have become tools for training aircraft pilots, but also a source of problems for school teachers, whose pupils devote all their spare days and nights to such "react and shoot" exercises and forget about their homework for classes. The controversial nature of e-learning tools from the point of view of the traditional empiricist learning paradigm is caused by a dilution of

the concept of reality-based observation and empirical facts. What is the relation between computer game "reality" and the outside reality? Is an efficient manipulator in the computer game environment also efficient in the outside world? Does he understand the difference between "game reality" and "actual reality"? Classical thinkers did not have to worry about these problems, when they created the foundations of empiricism many centuries ago.

The roots of the cognitive paradigm can be also found in ancient Greek philosophy, mainly in the rationalism of Plato. It has developed from the construction of mechanical systems in the first industrial revolution to information-processing systems of the computer age. This cognitive paradigm does not limit learning to memorizing isolated facts or to reproducing separate cause-effect chains. The focus is on understanding the system through relations and interactions of its elements. It stresses the importance of understanding the universal pattern that is the basis for dealing with interrelated phenomena. Latent learning, cognitive maps and insight are among phenomena studied by the cognitive learning psychology (Worchel, Shebilske, 1992).

Developing system analysis skills for avoiding sub-optimisation in decision making and taking into consideration interrelations between economic, social, cultural, technological, environmental and other aspects in the complex problem-solving process belong to essential learning goals in the framework of this learning paradigm.

A challenge of understanding large systems is their complexity. Attempts to manage complexity may be inhibited by the abstract nature of concepts that are introduced by using simplified models in the learning process in order to meet the perceptive and analytical skills of learners. That might lead learners to the conclusion that "theory" and its general principles do not reflect diversity of "real life situations". Another bias from the point of view of action-oriented learners is describing sophisticated models which might be interesting intellectual exercises, but appear to be unsuitable as practical problem solving tools if the real time frame and information processing capacity of the decision maker is taken into consideration.

E-learning makes it possible to deal with larger number of system variables during a limited time and to conduct learning by modelling exercises of "what … if " type. There are various examples starting from Excel or other spreadsheet programs as tools for re-calculating business plan profit estimates under different resource price and market share assumptions. More sophisticated learning tools include models integrating the different business activities of corporations or competitiveness factors and development scenarios of countries or ecological systems.

Post-modernist society has challenged classical system approaches and the cognitive learning paradigm. Limitations of this paradigm from the action-learning point of view are reflected in two key questions. Is it a good idea to incorporate in one model of a system experiences, attitudes and goals of different stakeholders or does this holistic model of "one integrated truth" become too complicated for real action? Do system analysis tools capture tacit knowledge of various actors representing different professional backgrounds and convert it through social interaction to explicit knowledge for creating a new knowledge base for a team, organization and community? The new emerging learning paradigm has to face fragmentation of professional knowledge domains and missing links between different "truths" as essential problems of the post-modernist society.

The focus will switch from individual knowledge and skills to knowledge, which is created through interaction in groups and larger communities for following joint visions in a changing society. Learning should build mutual understanding and emotional and social competence for joint action. The learning process is not limited to transferring existing knowledge from the trainer or tutor to learners.

New knowledge is created also in the learning process through interaction between all participants of the process. Part of this knowledge can be later applied in individual actions but its full value will be tested if participants of the learning process will develop new forms of co-operation on the basis of the already created common frame of reference and shared knowledge. In order to specify e-learning priorities in the post-modernist context we shall focus on concepts dealing with organization and management development.

Innovative learning, learning organization and knowledge management

The innovative learning concept has already been used in the global framework in a report to the Club of Rome in 1982. Innovative learning was distinguished from learning by shock that destroys the equilibrium of the social system and normative learning that reproduces the *status quo*. Innovative learning is based on two processes: anticipation of future changes and participation in problem solving based on the new information (Botkin et al., 1982).

Innovative learning as a model of active adaptation to radical changes is not limited to describing individual learning behaviour but can be applied to small groups, organizations and social institutions. Social and economic transition processes could be analysed in order to identify situations of learning by shock that result from shock therapy reform steps. Learning by shock will easily lead to negative attitudes towards changes, to resistance and to antagonism between winners and losers.

The crucial role of employee participation in preparing change inside organisations has been demonstrated by recent surveys of change management problems and employee attitudes in Estonian companies (Alas, 2000). Participation in preparing change will however be a formal "potjomkin village" for selling a ready-made project if it does not include efforts for creating the common knowledge base enabling participants to make meaningful proposals for-re-designing the change process and/or its end result.

Organizational learning has in recent years been an important agenda for theory development (Prange, 1999). The classical distinction of single and double-loop learning by Argyris and Schön (1978) links single-loop learning to incremental change, where continuous adjustments of organizational practices are made on the basis of rapid feedback.

Double-loop learning is associated with radical changes involving changing governing variables of the system. Although managerial discourse, where double-loop learning is portrayed as superior to single-loop learning, has been criticized by organizational learning theorists (Easterby-Smith, Araujo, 1999, 3-4), the transformation of economic systems and strategic turnaround management of organizations facing new business environments usually cannot be managed as continuous adjustment and inevitably includes radical changes.

Learning organization concepts (Senge, 1990, Pedler *et al.,* 1991) have been linked to organisational development, strategy and change management consulting practices.

The aim is to increase the capability of an organization to learn by systematically processing new information about the changing environment and critically reflecting upon past experience. This is especially relevant to business organizations in transition economies. These organizations have to deal with the challenge of radical and partly unpredictable changes in their immediate competitive environment and monitor changes in the larger socio-economic environment.

Knowledge management and intellectual capital concepts (Sveiby, 1997, Roos *et al.,* 1997) have developed the learning organization approach by focusing on relations between tacit and explicit knowledge and the formation of shared mental models (Nonaka and Takeuchi, 1995, 62-69). Shared mental models or maps of student groups representing different counties in transition have been studied by Cargill (1999). Shared mental maps can be used as tools by learning communities both inside organizations and in change processes that cross organizational borders.

Knowledge management initiatives in companies include defining core competences of the organization, mapping individual competences that can be used in new projects or as inputs to the learning community, developing knowledge bases for sharing knowledge and enabling its reuse. Among tools of knowledge management are digital forums and chat rooms ("knowledge cafes") for intensifying exchange and discussion of new ideas between staff members. Knowledge management initiatives also support systematic monitoring of new technological trends and the competitive environment, continuing dialogue with clients in order to make the right choices for product and service development.

Using e-learning tools for educating students in the post-modernist society

Universities and especially business schools have to take the post-modernist context into consideration

if they are interested in long-term competitiveness. The traditional concept of *universitas* is actually aligned with some elements of the post-modernist agenda. It supports a build-up of different scientific schools of thought and the development of students as mature non-conformist personalities, who are able to construct a future vision of themselves and their society.

Traditional university education places a lot of value on analysing, comparing and integrating views of different scholars through course papers, bachelors and master theses. The academic environment tends however to be too static and inward looking. Different schools of thought create new knowledge according their internal paradigms, tend to use their own closed glossary and are not very eager to be involved in interdisciplinary problem solving. University education in its classical form does not prepare students for work in learning communities, where different professionals and non-professionals, both theory-driven and practise-driven, have to deal with various problem-owners.

The sharing of knowledge between students is encouraged in group work exercises, but discouraged in test or exam situations. Students producing longer homework or coursework papers tend to have better grades than students trying to compress relevant information into the executive summary format. Mixing references to well-known scientific journals with topical headlines from daily newspapers and anecdotal stories or inside information heard from some friends in a master's thesis is seen as ignorance concerning the rules of academic practice.

In real-life managerial decision-making or teamwork situations managers, however, have to use different, official and unofficial, published and unpublished, more or less reliable sources of information in order to understand what choices they actually have. Separating the scientific knowledge base from other types of knowledge that have to be managed in an organization, may lead university graduates to the conclusion: "Let's now forget about theory! It is enough to use our gut feelings in order to get the job done!" That will mean in practice learning by trial and error and in fact returning to the behaviourist paradigm. A learning community should indeed also deal with feelings and intuitive ideas as essential elements of the creative process. It should, however, position intuitive ideas and tested proposals or theory-supported forecasts according their role in the problem-solving process.

An example of using e-learning tools for introducing the learning community approach to international student teams

University students participating in a course become only a temporary (3-4 months) learning community. Some features of the learning community can, however, be demonstrated by using WebCT as a virtual environment for e-learning. Our example deals with using some features of WebCT – the message board (forum), links to topical Internet sites and photographs of joint company visits. International groups of bachelor students at the Estonian Business School represent 7-10 different nationalities, including foreign exchange students from distant countries, students from neighbouring countries and some Estonian students.

The course "Practical aspects of doing business in the Baltics" is a 6 ECTS program with guest lecturers and company visits as essential elements. Already at the first class participants defined different stakeholders (foreign investors, local export-oriented entrepreneurs, expatriate managers) who might have different problems, information search and learning needs in the context of business in the Baltics. The first homework was to search the Internet and send to the WebCT forum a web-link, which would give the most useful information for a selected stakeholder.

Reasons why certain Internet sites are useful sources of relevant information, were commented upon by other students. Their comments were also sent to the WebCT virtual forum and taken into consideration later in group work for selecting the most valuable and well-described Internet links. The tutor made a final selection of Internet sites and compiled the list, which was presented to the next group in their first class. Their challenge is to add something new, after surveying the search results of the previous group. This forum was also used for presenting and commenting upon interviews with expatriate managers working in Estonia. Digital photographs were made during our visits to companies in various regions of Estonia and uploaded to the WebCT environment in order to remind the students about the joint study-visit experience as a way to support feelings of being a part of a learning community.

In order to make the best use of the WebCT forum, students have to be trained to present their homework results in a short and concentrated way in order to enable other students to capture their main points among 40-50 other homework messages. It might be seen as a problem, but we actually see it as an opportunity to train students for future participation in real-life virtual communities. WebCT also has tools for sending homework only to the tutor (internal e-post, assignments).

In the framework of learning community and knowledge management ideas we deliberately gave preference to the forum as the tool, supporting feedback by all students. The role model of the tutor in this context imitates a leader-facilitator in "real-life" organizations. He should not monopolize assessment and "ultimate truth" presentation functions but facilitate comparison and synergy of different pieces of knowledge represented by students from different countries.

The time frame of the course and substantial work load of students has so far not allowed a full use of such WebCT tools as students' personal homepages, real-time chat and whiteboard to be made. Real-time tools also assume, that all involved students have access to their computers at the same time. Using individual self-tests and quizzes has not been the main priority as our learning paradigm has focused on building a common knowledge base and an understanding of how to contribute to solving problems of different interest groups through sharing information and ideas of participants representing different countries. It is possible to use some elements of the knowledge base created by one student group, for instance the collection of web-links, as a good input for another student group operating in a different information search environment

Further challenges

The example described illustrates one option for applying e-learning as a tool of the learning community approach in order to meet the challenges of post-modernist development trends in the academic environment. It is not sufficient for presenting conclusions concerning the efficiency of such tool or for defining the limitations of the approach reflected in our example. Before measuring efficiency of a learning process, the concept of effect has to be clarified. What we mean by effect, depends on our learning paradigm. If we follow priorities of the empiricist-behaviourist paradigm, it would be relatively easy to prove, that a large number of self-assessment tests in the WebCT will speed up the trial-error-feedback chain and assist in the memorising of a large number of essential facts. One has indeed to cover the costs of preparing a sufficient number of tests, but results of this investment can be used for a long period if we assume that the focus should be on teaching ultimate truths and training universal behavioural principles. In the changing society and in turbulent action environment right/wrong answer tests will however have limited efficiency if we try to develop competencies for agreeing upon problem definitions and priorities in a team and for initiating co-operation in the field of finding and implementing new creative solutions.

In the framework of the postmodernist paradigm it would be misleading to measure results of learning mainly by checking how the distribution of right and wrong test answers has changed in time. The results of using WebCT tools should be assessed by measuring the increasing competence of participants in the field of searching and compiling information from various internet sources. The impact of the WebCT virtual forum on understanding the views of group members representing different nationalities and increasing competence for future participation in international learning communities should be also assessed as a learning result.

The full potential of e-learning is difficult to apply in a student group participating in a university course. This learning community has a temporary nature. Although participants can share knowledge for self-development, they are not responsible for managing changes and participating in knowledge management for developing core competence in the same way as business organizations in knowledge-based industries are. The EBS Executive Training Centre has already accumulated some experience using WebCT-based e-learning for companies willing to encourage their staff to share their problem definitions and ideas in the process of preparing organizational changes. E-learning is an especially valuable tool for developing learning communities in organizations, where large geographical distances inhibit daily or even weekly meetings.

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Requisite Competencies of the E-leader

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In order to define the requisite competencies and traits of the leader of the E-era, we have to begin with an analysis of the era. "The Economist" conducted a survey of the E-era, outlining the features of the era. First, this article discusses the latter features in more detail and then compares the features of the E-era with the traits of the leaders of transformational change and leaders of learning organisations, described in scientific literature.

E-era

I decided to acquire information about e-management by an e-approach, starting up several on-line databases of research articles at a time. The extremely slow flow of information suggested that e-leaders have quite a task to establish rules for Internet usage for their employees, and see to it that these rules are respected. If each employee dedicates even one hour a day to searching information on the Internet for non job-related purposes, this would reduce the opportunity to benefit from the basic advantage of the information era – speedy retrieval of information.

In the E-era, **speed** becomes more important in terms of commercial success than a company's size. Companies, which spend 3-4 months in decision taking, may discover that others have been able to redesign their web-pages during this time. Speed depends directly on policies implemented and rules concerning decision-making procedures in the company. Red tape kills speed, which means that the expansion of a company, usually accompanied by growth in bureaucracy, may no longer give a competitive edge.

Skills among E-leaders

The example set by leaders has become increasingly important. "The Economist" says that many leaders in Asia and Europe alike do not know how to use the Internet, and do not see this as a shortcoming. However, by having others read their e-mails and competitors' home pages for them, such leaders lose in speed, which is so important in the E-era. In addition, they cannot pass strategic decisions without understanding the opportunities that the Internet offers. Therefore, Internet skills and knowledge of top technologies is critical for leaders in order to manage an e-company successfully.

Given the overload of information, a necessary message may often pass unnoticed. Hence, the skill to **distinguish between significant and insignificant** and send one's customer or partner only significant information has become ever more important. Again, according to "The Economist", many leaders are still unable to express themselves clearly and succinctly. This tendency may transfer to Internet pages as well. One Internet company removed 80% of the information from its web site, which then led to a 3000% surge in site-visits and plummeting expenses.

In his analyses of competitive forces in the sector Professor Michael Porter of Harvard University found that e-commerce would empower buyers (Porter, 2001). Thus **customer orientation** remains important. Companies are now offered new opportunities to deepen their customer relationships. There has been a shift in emphasis from finding new customers to keeping and providing better services to old customers. Mass marketing is about to be replaced by individualised marketing. Companies are devoting more attention to customer preferences than to the management of products and processes; one person is active in more than one area, and this practice is spreading.

E-loyalties are widely discussed. You have to win the customers' trust in order to win their e-loyalties. Along with protection of the customers' personal data, **increased openness** will contribute to trust. Openness has become a strategy. The very nature of the Internet promotes a rise in openness. Many e-companies seek more trust by opening up their databases and internal information to their partners,

suppliers or customers. This brings to mind the fact that Hansapank, the flagship of Estonia's free market economy, has been flying the flag of openness on their mast already since their early years.

Capable people have become the most important resource of the company, instead of financial resources. Ever fewer people are required, but these few have to be extremely good. The leader has to take care that these people with their E-era attitudes, skills and competencies have a suitable working environment. Brand new professions have emerged, such as content manager, information architect, chief e-business officer, chief knowledge officer, etc.

In order to attract and keep these capable people and to value their achievements, companies have to use approaches that are different from those used earlier. Recruitment and selection have become faster by means of on-line resources. On-line games are used to select the best candidates. Only then are the candidates interviewed. Investments in the training of recruited personnel make up a lion's share of personnel expenses. On-line training is winning popularity. In this way the leaders are also taught how to train their subordinates. Then collaborative training sessions occur, which require immediate contact.

The capabilities of one person are not enough to achieve results, and the synergy resulting from teamwork is also essential in the Internet-era. So **collaborative skills** are continuously required in the E-era. Allan Martinson told "Ärielu" that home-working was not the best solution, since raison d'être of offices was to bring people together. But at the same time, the Internet creates new collaborative opportunities for companies and teams. If employees master the new collaborative opportunities within the company, then they get a better feel of any emerging opportunities and may use them in working with their customers, partners and suppliers. Teams are no longer constrained by differences in time or geographical location (Ireland's rapid development and the fact that it is becoming a data processing area for the USA is a good example). Subsequently, the competitive landscape is changing and so are the tools that companies use in order to avoid losing out on competition.

Professor Kathleen Valley of Harvard Business School compared Internet-mediated negotiations with conventional negotiations and came to the conclusion that the former significantly reduced the application of "win-win" strategies. The reason for this was that negotiation partners' emotions were not perceived, and were therefore disregarded. E-negotiations progressed better, if the partners knew each other. Which suggests that more attention should be paid to the submission of social information and that the first step should be introducing him/herself, rather than jumping on the problem right away.

A group's emotional intelligence, developed from Goleman's emotional intelligence, is seen as the foundation for better teamwork results. Mutual trust built on recognising and expressing emotions and on the ability to manage emotions, is what underlies the active participation of all team members in decision making and supporting each other in implementing the decisions. IT systems have created new opportunities to advance employees' decision making rights and consequently, responsibilities, as well as to expand networking.

In the conditions of rapid change, **information mediation** has become more important than ever. This concerns the mediation of information within the company, outside the company and even outside the country. The borderline between internal and external information becomes blurred.

The term **information management** is held in high esteem. Focus is now placed on gathering the information required by the company from any corner of the world, and making it accessible for everyone. Sophisticated databases are created and the Intranet is used. It is necessary to find the methods and motivators that make an intelligent person share his or her knowledge with the others.

The traditional term **discipline** has not disappeared anywhere. How does the requirement of discipline fit with creativity and openness? Programming requires that all the errors be corrected before a programme may eventually run. Thus, high standardisation is an inherent feature of the Internet. For instance, orders cannot be received before an accurate input form has been developed. Keeping away e-hooligans is another essential function.

Skills and the makings of the leader and implementer of radical change

Lawler (1992) noted that the contribution of employees to the implementation of change depends on the extent to which their leaders are willing to share their information, know-how, power and remuneration with them. All these factors are related to stewardship.

Drucker (1999) has said in his book about management challenges for the 21st century that leaders become "the stewards of change", and subordinates are expected to shoulder an unseen burden of responsibility.

Many authors believe that a change should begin among senior managers with changes in their behaviour. Experienced leaders have probably abandoned the idea that their subordinates listen to what they preach and disregard what they practice. Subordinates' trust in leaders becomes particularly important in the situations where fast decisions have to be made and risks have to be taken; trust has an important role in how the subordinates receive a new vision.

Below I give a short overview about transformational leadership according to several authors.

Tichy and DeVanna (1986) describe transformational leadership as a three-stage process.

In the first stage, the need for change is felt, followed by taking the need to all members in the organisation. This should reduce employee resistance to the change. A leader's role in this stage is related to benchmarking and taking over excellence standards.
In the second stage, the leader's task is to create a new vision for the organisation and to mobilise commitment around it. The leader takes care that organisational members are permitted to participate in planning and acquire any necessary knowledge. The leader builds the subordinates' trust in him/her through modelling personal competence, self-confidence, and commitment.

In the third stage the old ways are abandoned. The leader recognises mixed feelings about the changes and new ways, and motivates people to move from negative to positive emotions. The aim is to mobilise the energy needed for an individual renewal of each and every person.
Weiss (1996) says that transformational leaders need not be heroes. He sees trans-formational leaders as change agents, as courageous and bold individuals who believe in people. They are value driven life-long learners and visionaries, able to deal with complexity, ambiguity and uncertainty.

Porras and Hoffer (1986) studied how successful leaders implemented change, and identified certain common behavioural characteristics, such as generating employees' participation in decision-making, leading by vision, promoting information flow and developing employees. These leaders are characterised by a strategic approach to management.

Gratton and Pearson (1999) added to the aforesaid empathy, that is, dealing with the emotional side through humour and symbolism and being able to build relationships with many kinds of people.

Goleman (1999, 2000) emphasises that leaders must know how to manage emotions well in themselves and then manage their relationships. Managing change should also involve managing emotional connections of employees (Duck, 1998).

Many authors have paid special attention to the need to build relationships of trust. Trust is essential for mobilising employees around the vision. Through a relationship built on trust, the transformational leader must be able to activate the employees' higher order needs so that they transcend self-interests for the sake of the organisation (Pillai, Schriesheim, Williams, 1999).

Taffinder (1999) lays emphasis on the need to choose the right team for the change and to support their change agents. The role of the implementers of change is to intellectually encourage employees to take risks and to look at problems from a different angle.

This may be summarised by saying that all the authors have emphasised the need to create a vision and to communicate it to employees, the need to involve employees from the inception of changes and promote their advancement and learning. Thus, none of the authors has recommended that the leader should have a "strong hand" and give orders

to implement changes. This leads to the conclusion that, by the beginning of the new millennium, the preferred management style had made a decisive shift from giving orders - to employee participation in making relatively significant decisions and sharing power across the organisation.
Such active participation in implementing changes would raise employee satisfaction and loyalty towards the company, and would promote more responsible and conscientious behaviour.

Skills and the makings of a leader required for creating a learning organisation

To compare skills of transformational leaders with skills leaders need for creating a learning organisation, author presents several views of theorists of organisational learning.

Senge (1997) believes that employees need a safe environment in order to be able to learn and that the leader should create such an environment. In addition, Senge sees the leader of a learning organisation as a researcher and designer. As researcher, the leader tries to understand how the organisation, as an integral system, operates; he tries to understand the external and internal forces that drive operations. As designer, the leader designs learning process throughout the organisation. An increasingly sophisticated environment requires that leaders keep gathering information and building networks that span across organisational boundaries Cockerill (1999).

Drucker (1954) considers information as the most important tool of the leader. He asks, how much information can an organisation absorb. Those who have been developing the concept of a learning organisation, have also seen this question as important.

Also Dess and Picken (2000) note that an effective leader should have the following information-related skills: (1) share information and ideas across organisation; (2) encourage people to speak their mind and cultivate informal sources of information; and (3) utilise technology to facilitate both the gathering and sharing of information.

Given the overload of information, Huber and Glick (1995) recommend paying more attention to the distribution, interpretation and selective forwarding of information.

The author of the concept of living companies DeGeus (1997) points out commitment to people. He says that leaders "must place commitment to people before assets, respect for innovation before devotion to policy, the messiness of learning before orderly procedures, and the perpetuation of the community before all other concerns".

Jaffe, Scott and Tobe (1994) have defined a leader's qualities using four points:

1 commitment, which requires high motivation and a sense that what they are doing is significant and meaningful;
2 feeling control over their job;
3 seeing change as a challenge to develop their skills and to learn; and
4 taking their co-workers as colleagues, not competitors.

Thus, the majority of these authors see valuing people, information and the creation of environment as the main roles of a leader of a learning organisation. The role connected to people involves valuing people, respecting others and learning from others. The role connected with information involves researching information, developing mental models and concept formation. Ensuring safety, promoting proactive orientation and organising learning are connected with creating the learning climate.

If we compare the transformational leader and the leader of learning organisations, we find similar traits, but the focus of attention has moved more towards the side of people in learning organisations. An individual who has knowledge and skills, whose capabilities underlie the growth of a company's assets and profitability, is of the highest value in a learning organisation. The individual outside the organisation, the company's customer, is no less important, so the employees who are in immediate contact with the customer (i.e. customer service personnel), are under meticulous attention. Thus the traditional pyramid with the most important person being the top manager, who may convene a meeting and make the customer wait until the meeting is over, is a thing of the past. The leader too participates in customer service, if required.

The aforesaid may be summarised by saying that the Internet transforms the skills that are required from the leader, but not too much. Any successful leader may be a successful e-leader. The success

of a company's e-strategy still depends, above all, on the way the company is managed. In addition to the prepared strategy of actions, there have to be - intelligent employees, who may be given extensive freedom of action and extensive responsibility; an organisational culture that values openness and experimentation; efficient information channels that ensure free information flows in the company; and a motivating wage system. A leader's commitment to the company and personal lead in using e-resources is a prerequisite for commitment among the employees.

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Coping in the "Global" Era

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Abstract

The 21st century with its new opportunities has changed our perception of work and methods of working. Electronic commerce and the World Wide Web have become an important part of every business and our everyday life. The character and essence of work has changed - physical work has been replaced by mental work and today the main tool is our minds.

The 21st century is the century of intellectual capital, where the main recourse of society is the ideas and knowledge of its people. Organisations today are already described as team-organisations or idea-organisations. It is important to know how to work together with other people and how to create synergy in teams.

The new concepts in management include internal marketing; treatment of employees; emotional intelligence; how to recognise and use one's own emotions as well as those of others; intellectual capital, which claims that the main resource of the 21st century is the individual with his/her knowledge and idea management, which stresses the importance of new and original ideas and business ethics.

The changing environment needs new people - new managers to lead businesses and new kinds of employees to cope with the changing requirements. But to affect changes in people's habits and attitudes is a most difficult job and the biggest challenge and soon we will all have to face that challenge.

Introduction

The business environment has changed - we have not. We are still the way we used to be. Yes, we have learned to use cellular phones, laptops, the Internet and so on, but we, as human beings have not changed. We may of course ask ourselves whether it is necessary to change ourselves at all. We are, after all, still building that new environment for ourselves, not for some new person who does not exist yet.

Electronic commerce has become a major topic in the business community. Its use is growing phenomenally in every segment of our society. Increasingly one hears how it is necessary in order for any business to survive to have a presence on the World Wide Web.

There has been a great deal written about how electronic commerce will revolutionise business and how businesses are using it. The new Internet services, such as the World-Wide-Web and the technological advances behind it, are considered the most exciting developments for commerce this century (Merchant, 2001). Having a web site is a powerful agent because it gives a local enterprise worldwide presence. Suddenly a local company has the potential to be a national and even a global enterprise. A web site's ability to stimulate growth in other critical areas is equally powerful. It is tremendously advantageous for communicating with clients and employees.

However, this electronic world may eventually become a threat to all businesses that do not understand the process. They face obstacles and a technologically unpredictable playing field where survival depends on adaptability. These changes also often result in broad changes in organisations, in their structure, in their culture and in their behaviour and actions.

The World Wide Web is both the stimuli for a new organisational culture (making it necessary) and a facilitator of that same culture (making it possible). Rosabeth Moss Kanter, in her book, *E-volve! Succeeding in the digital culture of tomorrow* (Moss, 2001) calls that new way of working e-culture. E-culture defines the human side of the global information era, the heart and soul of the New Economy. People and organisations everywhere must evolve to embrace this business culture of tomorrow no matter where they are on the continuum of Internet use.

The following article emphasises the tendencies leaders should pay special attention to in order to guarantee their survival and that of the new society, which will be their home for the coming

centuries. The goal of this article is to discover what kind of changes there are or should be, inside the people and managers of organisations during this transition to the 21st century information era.

Back to people

Taking full advantage of the potential of the Internet age will require leaders to lead differently and people to work together in new configurations.

E-culture is derived from the basic principles of community: shared identity, the sharing of knowledge, and mutual contributions. The spirit of community is required to implement the changes that the Internet makes possible – to give customers more choice, citizens more voice, educators greater capacity for improving children's learning, and businesses greater access to the market and internal efficiency. Understanding the dynamics of communities, whether they work in our favour or represent communities of opposition and protest, is also required in order to respond to the changes the Internet forces upon us. The Web represents opportunity for some and an enormous threat for others. Although e-business opens new doors and creates new paths it does not diminish the role of an individual instead the role of every person is steadily increasing.

However, we feel ourselves less and less at home in that new world. Looking at our new environment, we can see that from day to day our values and habits marry less and less with the ones of that world. This new world seems like a small, foolish, ego driven child who does not care about himself nor others, trying to achieve whatever comes to his/her mind without thinking much of consequences. It lacks the qualities humans have been proud of for centuries, humanity and wisdom.

To save us from the conflicts caused by these deficiencies, people have to start paying more attention to these characteristics. We can be efficient but we must be human and wise. The process of forming the new environment will be similar to the bringing up of children.

In the *old economy,* partners were an afterthought or a re-labelling of existing transactional relationships with a vow to treat 'the other' better. The *new economy* builds networks through multiple partners.
The outline of the new organisational model is familiar: flatter hierarchies, more fluid boundaries, more team orientation, and an emphasis on process over structure.

Change in the e-world involves shaking up thinking (like shaking a kaleidoscope); communicating with internal and external audiences, staging pep rallies and other events, and building support within and outside the organisation.
The best e-culture companies operate like communities internally and serve the external communities in which they live. Those individuals who will be most successful in the Internet age will exemplify this possible evolutionary leap toward shared consciousness. They will be more collaborative systems thinkers, excellent communicators, and like members of a great improvisational theatre troupe, make quick adjustments as they interact with their multiple audiences of users and partners.

But today, employees are still alienating themselves from their companies and looking at them not as opportunities to grow but as some cruel things, slowly eating their employees and themselves up. We have all the technological means to change this situation but we can't.

Why? We do not realise what we know, and, we do not know what we should do with this thing that we do not know. Is there a cure? Yes. The Internet provides us with huge new sources of raw data. Getting the raw data organised into information, the information shaped into concepts and proposals, and sculpting the concepts and proposals into decisions will be the primary work of the twenty-first century manager and leader. Leading and managing this process is what the leaders and managers of the future will work on (Tropman, 1998).

Cure no. 1? (People can offer – know-how)

At the end of 20th century, we saw the birth of a new theory, which was named the theory of intellectual capital. Ten years of books and articles about the subject has brought us a bit closer to the point of intellectual capital theory. The importance of this theory does not lie in its ability to express hidden

value to stakeholders but in its ability to change attitudes.

In the last century, our position in the fight with technology worsened. Technology gave us more opportunities to do something new but it did not give us the freedom for which we had hoped. The reason for that is not found in technology but in us. We were so amazed by the speed of changes taking place from day to day that the new environment was declared supreme. The human being and society moved into the background and the environment, powered by technology was brought to the fore. Problems started when we found our lives in a mindless test lab, which existed just for fun.

The birth of the theory of intellectual capital was caused by the fact that the market and book value of a company differentiated largely. Society started to see something more than the plain frame of technology. That something was the human being. G. Roos (Roos, 1997) declared that the main resource of the 21st century is a man with his head and thoughts.

The theory of intellectual capital deals with knowledge and skills. We may find these phenomena in organisations and may even write them down, but if one necessary item of knowledge in an organisation doesn't find another, then according to the theory of intellectual capital there is no use for these in the organisation's over-all success.

Cure no. 2? (People can offer – feeling)

D. Goleman (1997) and K. Thomson (1998) have found another resource – the human emotions. They claim that the main resource in organisations is people's knowledge and feelings, which allow them to use their emotions successfully. This resource is called emotional intelligence – a potent combination of self-management and relationship skills. Emotionally intelligent people are able to honestly recognise their own strengths and weaknesses, they understand which skills they need and they can flexibly interchange those skills depending on the situation.

Both of these theories could seem completely different but in reality, they are both emphasising the importance of people. In the race with technology, humans are far behind. Since both of them need each other, we have to catch up quickly or we will find ourselves in a wheel-less car, hoping that it knows by itself where to drive. The two theories mentioned so far are the first steps on the long road of again finding the wheel and the purpose. Knowledge and know-how can be used by technology, but new ideas, new knowledge can only be created by people.

One answer to the question we asked at the beginning of this article may already have been given by G. Roos (Roos, et al 1997) with the theory of intellectual capital, which claims that the main resource for the 21st century, is a man with his head and thoughts. Another answer may be the wisdom to use ones emotions correctly.

The trends of emotional and intellectual capital definitely influence the work of managers who are faced with similar problems to those of the past, but now they have to offer different solutions. They will still have to inform, motivate and praise, but they will have to acquire some new abilities and reclaim others which have been lost in the creation of the *new world* we live in today. Now we can ask if there is anything special necessary for the 21st century manager, some asset or skill, which makes a person succeed and without which they will be unable to cope in a changed society.

To be able to understand the changes to the manager's role we can look at the way employees' roles have changed through the centuries. In the pre-industrial era we can talk about the employee as a master (singular), who was dealing with one product, then today we must talk about employees as masters (plural) who are dealing with one production. And production today involves greater and greater amounts of knowledge.

As we search the variety of new things that occur in the wake of revolutionary communications technologies, it is also important to recall what can be learned from the previous waves of innovation. The technology is revolutionary, network economics are different, and all the wheels must turn a lot faster, but the problems of leadership, organisation, and change are similar to those we have been experiencing for decades.

Cure no 3? (People working in teams)

It seems we can claim that one key to being successful in the 21st century is making people work together, not only acting together, but working in teams. Then we can say that when one necessary item of knowledge finds another and creates new knowledge that no-one was previously aware of, this new knowledge now belongs to the whole team. Working together - "teamwork" - means sharing thoughts, ideas and knowledge and trusting that nobody will use us or our ideas against us. According to I. Kant in his theory of the Moral Agent - "One ought to treat others as having intrinsic value in themselves, and not merely as means to achieve one's ends" (Meel 2000 p. 90, Chryssides, 1995).

Today's business environment increasingly relies on teams, diverse groups assembled to meet organisational objectives that can't be attained by individuals. This change is necessary because of the need to do collaborative work with other people.
The superiority of group decision is making over that of even the brightest individual in the group. "Simply pulling together a team of talented individuals isn't enough to ensure success, a high-performing team needs four critical ingredients: trust, a group identity, a sense of group efficacy and norms to govern a group's behaviour (Barth, 2001).

So changes have been made in the people who are involved in the process. From here it is quite easy to conclude where the changes must be made. The changes must be made in the environment, or in organisational terms, in the structure. As we look at the theory of intellectual and emotional capital then we can see that both of them emphasise the team aspect. We can gain from these theories only when we co-operate with other people. Therefore, the new structure should be built not so it is easily governed but so it creates knowledge, which according to the theory of intellectual capital, is the source for everything else. Ideas and knowledge can only be created by people not by emotionless machines. People do not have to learn how to be machines anymore because a machine can always do that better.

Managers have the need to formulate and communicate a vision for an organisation, to add value to an enterprise and an organisational imperative to motivate followers. They have the leadership role of the generalist in organisations and the need to remain calm and decisive in crises (HBR Roundtable, Dec'2001).

For a team to achieve its true potential, the group's emotional intelligence is its ability to be the mindful of the emotions of its members, its own group emotions or moods, and the emotions of others outside its boundaries.

A high-performing team needs three critical ingredients: trust, a group identity, and a sense of group efficacy. But also the power of norms to govern a group's behaviour can not be underestimated. Sometimes unstated norms, though rooted in laudable goals, can be dysfunctional. The role of the team's formal leader in exposing such deeply embedded norms or in establishing new ones, is crucial (Barth, 2001).

There is an incontrovertible link between executives' emotional maturity, exemplified by such capabilities as self-awareness and empathy, and their financial performance. The leader's mood and his or her attendant behaviours have enormous effects on bottom line performance and since leaders' moods and behaviours are drivers of business success, the primal task of an executive is emotional leadership (Goleman, et al, 2001). Before leaders can turn to setting strategy, fixing budgets, or hiring staff, they must first attend to the impact of their moods and behaviours. Emotional leadership is the spark that ignites a company's performance.

The first problem will come from the increased freedom employees will face. Until recently, employees in industrial societies dealt only with one operation or product, managed by some boss. Today, the employee often creates, produces and supports different products. All this requires his/her full co-operation and this cannot be achieved via simple commanding. The employee is not a mindless creature anymore and that also changes the role of managers.

Coming back to the question we asked at the beginning of this article, whether the 21st century requires from people and managers some special skills, we can answer - YES.

Cure no. 4? (People and ethics)

In order to find out the necessary skills, we can turn to "The New Machiavelli" (McAlpine, 2000). The author of this book describes what kind of person the ideal manager has to be. "We must presume, that the behaviour of the ideal manager is generally based on ethical norms, because if people lack a general world view, how can they possess any in the business world?"

One significant characteristic of ethics is loyalty. To be able to supervise others, the manager must be able to evaluate the loyalty of those who are working under his supervising, but also to show his loyalty to them who are his followers. This kind of loyalty must not remain secret; instead it has to be shown to everybody in both good and bad times.
It is important to differentiate between those people who are not loyal from habit and those, whose lack of loyalty is pure opportunism, and to evaluate how deeply this lack has been hidden in their characters and how carefully they conceal it. People who are able to hold their disloyalty in secret are the most destructive people the leader may meet.

Further, the manager has to be trustworthy and even more, this trustworthiness has to be known to everybody. And vice versa, the manager can not hope that his people present him their trust if he doesn't trust them himself.
In conclusion, the most important factors are ethics, behaving in an ethical manner, loyalty and trust.
And now we have arrived at the most important factor for the 21st century manager – the ability to trust.

What are the factors that influence the ability to trust – trust oneself and trust others?
In psychology trust is often united with self-esteem and self-perception or self-image. Self-image is the composition of all the things the person knows about himself. Different psychologists talk differently about self and self-concept (Dickstein, 1977, Epstein 1973). Self-esteem involves how a person responds to the information he knows about himself. It is presumed that self-esteem is based on three subconsciously adopted axioms (an axiom is a truth, which needs no proof). Furthermore, positive and negative self-esteems have different axioms.

Axioms of positive self-esteem include:
- I am good.
- All the people I care about, care about me too.
- When I start something, I accomplish it when I make a big effort

Axioms of negative self-esteem include:
- I'm no good. Life is meaningless.
- Nobody cares about me.
- I can't achieve anything.

Goleman (2000) claims that the basis for emotional intelligence is established during the first year of life. Developmental psychology by Erikson (1983) also claims, that the basic trust feeling which guides us through our whole life is just the same basic trust which is acquired during the first year of life. When we study the positive axioms of self-esteem, we see, that the third one is the one which gives people faith in new activities and a willingness to act, and the second one the presumption to trust other people.

People with negative self-esteem doubt themselves and others. Freud (Brown, 1964) wrote that no one can live with negative self-esteem and in order to cope with that, he has to compensate in some way. From here new kinds of people are born into the world – so-called "better" people. While people with positive self-esteem think they are good, they are also able to see and witness their weaknesses, "better" people on the other hand, are not able to acknowledge their mistakes. Their inner feeling forces them constantly to assert that they are right, they do not make any mistakes, or if they do, then not at the present moment. And this "other time" will never arrive.

The study of conflicts conducted at EBS (Virovere, et al, 2000) shows, that the majority of conflicts are vertical and remain unresolved, because managers are not ready to acknowledge even a minor fault from their side.

The studies of relations based on the theory of Kemper (1981) point to a higher need for power among Estonian people, which in turn correlates with low self-respect. In reality, we are not divided into black and white on the basis of self-esteem, we are not very positive or negative, but we are more like different shades of "grey". So, people throughout the world have varying propensities for

trusting others and consequently the probability of them being successful also varies.

What kind of enterprise is successful and competitive in the 21st century? The answer is simple, an enterprise making maximum use of its main resource, people; using their knowledge, their creativity and their ability to create anew.

Cure no. 5? (People are creative)

Creativity is a phenomenon which can not be forced, told or "put to work", but it evolves from freedom and a desire to create. So the management of any company willing to aim for long-term success, has to consider its employees wishes and recommendations in order to guarantee its existence also in ten years. In the given form this last recommendation is extremely general and its implementation may provide the opposite results, without creating anything new, just another mess. Then what concrete recommendation could make the company more successful? The answer is hiding in the character of creativity – in freedom and the willingness to create.

The management of the company must put the organisational processes in order, to allow them to manage the elements of creativity in the best way and to help create a unique competitiveness. That means the advantage is foremost hidden in that part of the intellectual capital called the structural capital or structure of the company's processes.

Ethical behaviour, partnership, the idea that the other person is as important as oneself are the significant features in every business activity. Ethical behaviour will bring direct effects for the company, for the people and for all stakeholders. An ethical approach to activities will result in openness, better communication, sensitivity in difficult decisions, a better working climate, better team spirit, higher motivation, stronger identification, work satisfaction, higher efficiency, etc.
Any company cannot be more ethical than the people who run it. Top managers are the crucial players and all the others consciously or unconsciously observe their behaviour. Unless managers act ethically they can not demand ethical behaviour from their employees or from their other counterparts.

Everybody in our new environment has his/her own answers to the problems surrounding us, but we as a society are forgetting our collective answer to these questions. All of us are fighting our little fights from day to day, thus loosing sight of the big picture, which once told us why the fight began, why it continues and where it will end. This sounds like a fairytale but is the reality for large companies. Technology allows us to make things bigger and better but it does not do anything by itself. It is all up to people, their behaviour and actions.

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Change and Growth, Innovation and Electronics

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Introduction to a World of Change

Today, the Baltic States are past the halfway point in the successful transition to market economies and democratic civil societies. Rates of current growth are high. By some measures, Estonian economic activity now matches that of the highest Soviet level. With growth rates well above those of the European West, Lithuania and Latvia are expected to do the same in the very near future. Still, all three countries are considered to be poor when compared to others in the European Union (EU). They need to grow economically. Fortunately, progress and the end of the transition process is in sight. For the Baltics, the next two decades will be decisive in establishing their respective ranking and roles on a higher level in a fast changing world.

Individuals' actions, organizational practice and government policy will determine the value of Baltic products and services, the nature of employment in all three states, and the standard of living in Estonia, Latvia and Lithuania. Issues related to advances in electronic technologies are discussed here primarily in terms of American concepts and Latvian developments. We use the developments in electronics, especially the recently introduced E-commerce (electronic marketing services) for our main focus. We are convinced, however, that the present differences between the three economies, important as they may be in some aspects, are not yet critical. What is important is the way the three countries will respond, for better or for worse, to the challenge of unremitting global changes.

Further progress requires novel but careful and prudent planning and progressive policies and practices. A Niccolo Machiavelli poster in one of the Pacific Lutheran University's classrooms reminds us that nothing is more difficult and risky than a new system. It is likely to be opposed by those who gain from the present. Changes get little acceptance from the few supporters who are not sure of the promised advantages. Great opportunities are always matched by high risks.

Intellectual Imperatives

All imperatives for economic growth in the Baltics have an international dimension. Usually, small economically advanced countries are very active in their participation in the international division of labor. Most trade occurs between economically advanced nations. Exports assure an optimum engagement of well-developed human resources; imports raise the standards of living. In comparison, countries that rely on the sale of raw materials and depend on the exploitation of natural resources, face increasing international competition and have poor prospects for profitable sales or full employment. In short, the Baltic states cannot expect to do well with labor engaged mostly in simple, labor intensive industries, forestry, agriculture, oil and oil shale deposits, and local services. Sales of land and other national and private assets to international investors are made to meet the immediate need for cash. They indicate that these buyers expect to use these assets more profitably than the present owners.

Ways must be found to achieve high productivity and full employment with exports of high value. This imperative requires a rapid development of what we have chosen to call intellectual industries. They include maximal adoption of information technologies.

Within the next two decades, the growth of the Baltic economy will be shaped by the following:

- The rapid aging of the population. The low birth rates, firmly established in the past decade of economic uncertainty, will soon cut the number of new entrants in the labor force in all three countries. At the same time, we can expect that life expectancy will rise in the coming years, as

will the number of older people in the population structures. In this aging population, a smaller number will work to support themselves while a rising number will not.

- The education and skills of the present labor force of Estonia, Latvia, and Lithuania do not yet match the best of Europe. Structurally, Baltic labor is still under-employed in agriculture and fisheries, working in low productivity jobs in forest industries. It is hard to improve wages in the apparel industry. Employment in high tech industries is still patchy; it relies heavily on skills gained years ago. Largely unproductive bureaucracies burden all three states. Investments in education are more substantial in Estonia. In Latvia, public investment in education is too low for a country with aspirations of being an economically and socially advanced nation.

- Baltic imports are rising at a faster rate than exports. This is international trade that is increasingly out of balance. This can endanger monetary values in countries with minimal capital accumulations and no other significant reserves. Because international trade in the Baltics is still low when measured on a per capita basis, the real issue of concern is the need to increase exports. Delays in the development of a higher value Baltic product and service mix, increases the risks of the Baltics becoming Third World nations in an advanced Europe.

- The rejuvenation of Baltic electronic manufacturing industries and the development of software firms are still in the early stages. There are brisk imports of technologies to help increase economic performance; again, exports are low. There is a risk that the former may be patterned too much on outdated soviet industrial models.

- Educational and training strategies are uncertain. Western educational models exist, especially in management education, in Tallinn (Concordia University; Estonian Business School), Riga (Riga Business School; the Stockholm School of Economics in Riga), and in Kaunas (the re-established Vytautas Magnus University). Reforms in major state universities take place at a slower rate (business programs at the Kaunas Technological University are a welcome exception). Technical education lacks the larger public funding.

- Due to very limited research funding, cooperation between national academic research institutes, universities, and industry is underdeveloped in all three countries, but improving in programs funded by the EU. Proximity to each other and the concentration of other research institutions and private companies in and near Riga, similar to cooperative networking of the type observed in the Silicon Valley, offers good potential.

- Entrepreneurship is still undeveloped. Estonia is closer to norms observed abroad. The relative numbers of Latvian entrepreneurs are lower than in Lithuania. They are about half those observed in Lithuania. The Latvians have inherited economic management practices narrowly defined and excessively oriented toward outdated rules, instructions and procedures.

- Stated differently, Baltic progress can be maintained best by changing parts of their economies to innovative, predominantly intellectual, industries. Optimum engagement of human resources with the highest intellectual potential should have high national priorities.

Human Heritage

Innovative technological developments and applications of rational knowledge to economic tasks can succeed best when integrated with individual and social considerations, interdisciplinary discussions, and collegial teamwork. This observation suggests that one nation or another cannot be made into a race of electronic wizards in short order.

A dominant aspect of the value systems we have observed in all three Baltic States, is a passive, rather conservative mentality. We already know that Baltic agricultural practices have deep roots in the traditions of family farming. They relate well to the knowledge of local conditions and practices proven over time. Innovations here are not bold strikes into the future. They tend to be cautious adoptions of many ideas already tested. This pattern often suggests a follower strategy in

innovation. What with the paucity of accumulated traditional capital and the risks, this is a wise policy for many Baltic entrepreneurs.

Technical innovations in Baltic industries tend more to follow the industrial engineering principles established by Frederick Taylor and Henry Gantt, and less the psychologically enriched methods of Frank and Lillian Gilbreths. They correspond to the industrial patterns characteristic of the early 20th century. These are fixed capital man-machine systems dominated by massive investments of traditional capital and are reinforced by fixed procedures and standard orders. Ideally matched with centralized political practices and centralized decision making, they still provide useful models for conditions of unlimited demand.

A typical example is the proposed *Baltic Pulp* complex in Latvia that calls for a very large investment in manufacturing facilities, the commitment of immense forest resources for raw materials, new public roads, all with a minimal employment impact. Uncertain demands for the products of such giants make them exceptional, but not uncommon in the Baltic future. Still, we expect that such capital-intensive industries will continue to make their limited economic contributions to telecommunications and transportation, extractive and processing industries. Industries operating on a low cost labor basis, making clothing or writing simple code programs for export, are necessarily part of economic structures today. They do, however, have only limited long term potential.

More predictable successes in manufacturing are the new, very profitable companies with substantial retained earnings, starting small and expanding rapidly in response to changes in regional and global demands. They respond to new domestic needs and markets abroad. These firms may be Estonian contractors in manufacturing electronic components, Latvian makers of complex computer programs or advanced optical fiber products, or Lithuanian TV set manufacturers. Everywhere, the real successes are measured by pride in quality, disciplined economic performance, and wages well above average.

We do not expect to change basic human nature and the genetic inheritance we and others have. We do, however, propose that in the future human resources be developed and deployed much more effectively to serve new, emerging markets.
A family member born to work and life on the family farm adapts as best as he can to the circumstances given. He learns by observation and practice to do his best with hard work, and hopes that market prices for his products will favor him.

The industrial worker, perhaps a former farmer, brings many of his habits to the factory. Again, he learns mostly by observing, doing, and by following orders from the top. In the Soviet, as well as in the early American industrial systems, he and others were trained to perform very specific tasks. For advancement, he learns to respect and use his political and social skills in working as smoothly as possible with his superiors in narrowly defined hierarchies.

In the more advanced civil society, now emerging in the Baltics, the former farmers, and the industrial workers and technical personnel now have to adjust again to middle class values. Their **essence is trust and cooperation** (Gundar J. King and J. Thad Barnowe, *EBS Review* Nr. 12). We emphasize this point, because change and innovation are stressful. It requires and consumes a great deal of this social capital. Therefore, trust and cooperation must be cultivated and reinforced. Thus, it is important to increase the opportunities in those economic activities where intellectual abilities and interests are logically linked to education and training (Hallett, 1987).

Success in intellectual industries depends on their abilities to adjust to changing opportunities in the market. Characteristically, work of high value is done in a more social, more collegial, and more interdisciplinary environment. We see a great diversity of various engagements, in an unprecedented variety of organizations, and different, economically more effective, relationships at work. **Where creation of high value takes place, there is a shift to professional, more cooperative teamwork.** It is marked by high individual responsibility and joint productivity. **There is an emphasis on finding better solutions for old and new problems, and the improvement of performance on a lower, much more decentralized and personal level.** These latter patterns are typical of the new, collegial enterprise often started with close friends. This closely-knit environment permits and encourages the use

of new interdisciplinary, technical, and business knowledge. The expected benefits are usually related to developments beyond the domestic market. The most profitable opportunities are found in working with international partners.

These are new demands. They are so novel and unusual that cognitive dissonance slows down adoption of new values, work patterns, and social relationships. Their strength is their excellent fit to new realities and related rewards. They do fit patterns of the new social order expected by Francis Fukuyama (1999). The value systems required in this international, intellectual industry are different from what was expected on the farms, in traditional factories, and in rigid bureaucracies. The adoption of such values takes place only gradually and best among the young. Therefore, most participants in the Baltic economies will for many years work in organizations governed by more traditional values. They will change in their own fashion, at their own rates. They may actually perform reasonably well in the roles chosen. On the whole, this emerging multiplicity of value clusters and organizational arrangements does not offer more employment, uniformity and stability than an industrial army does. It offers more choice. It does provide the potential to make all work much more personally rewarding and valuable.

With such choices made, the expected changes directly involve a relatively small number of well-educated and professionally oriented innovators. They cannot change everyone's mentality or eliminate all evil, but they are critically important in providing a leading edge for social and economic development in the Baltics. Indeed, recent reports of the *World Bank* show that impressive loans, grants and other funding are most effective where there is a growth of social capital, a resource needed in even the most traditional enterprise.

As noted earlier, the innovators help the constant rebuilding of the social capital essential to intellectual industries. They also require and assist in the creation and accumulation of intellectual capital. These processes, still undervalued in the Baltic States, require vast expansion of the reformed and integrated education and training urged by Hallett; they should be well above present public funding and continuing training budgets of two weeks annually for everyone or in excess of three percent of payroll costs. The list of Pacific Lutheran University's (or other) executive and seminar programs (www.cedplu.com) range from electronic commerce, and environmental issues, to negotiations and project management skills to value creation with information systems. Very possibly, such combinations of academic education, practical training and joint research with industry may result in such institutions as the interdisciplinary, project-oriented Tauber Manufacturing Institute at the University of Michigan. This joint industry and university organization serves new kinds of manufacturing leaders capable of guiding companies through globalization, technological innovation and other diverse business changes.

Innovative Communities

Technology is already a dynamic factor in the development of Baltic economies and entrepreneurship. In terms of real potential achievement and employment, it is still only an emergent factor. As a factor in raising productivity, it is beginning to have a role in reducing the costs of production and distribution, and in increasing the value of goods and services. Regional success, as well as success in a given place, depends on the ability of business to join currently established linkages among communities and world-class companies.

Information technologies (IT), including electronic commerce, represent a wide range of designs, applications, and market exploitations. At one extreme, they involve major investments in carefully managed multi-disciplinary skills for the creation of new systems (Cortada et al., 1999). At the other, **there is very quick, flexible exploitation of market opportunities** that may occur unexpectedly. In either case, the relatively low investment of traditional capital, and the low production and distribution costs, make information technologies dynamic and unstable, always risky and frequently very profitable. **The economics of information technologies work best in large, therefore international, markets** (Shapiro and Varian, 1999).

Electronic commerce is a summation of commercial activities where computers and software are widely used. It is not so much a substitute for selected functions, as it is a new way of doing business. Information technology is a strategically important

means that can give a company a competitive advantage to gain new markets or to reduce transaction costs in the era of information. It is a key ingredient of advanced economic development; it presents remarkable new opportunities (Korper and Ellis, 2000) for entrepreneurs aspiring to successful international roles.

It is not realistic to think that new concepts of information technology and ingenious applications of electronic commerce can immediately emerge in the Baltic environments that are still characterized by meager resources of traditional capital, inadequately funded national education and research, and relatively low levels of cooperation and mutual trust. Such necessary investments lag behind those of the Nordic countries. In a sense, the **quick development of high technologies in the Baltics depends on the adoption of international business patterns and friendly foreign investments.**

Fortunately, there are proven, simple rather than comprehensive, approaches available. In her observations of world class business, Professor Rosabeth Moss Kanter (1997) of Harvard University suggests the formation of networked communities that offer limited expertise. Kanter distinguishes between **thinkers** (found in concentrations of intellectual activity as found in the Boston and Silicon Valley areas), **traders** (in international centers of finance and trade, such as London, New York, and Singapore), and **makers** (Silicon Valley, Singapore, Taipei, and, perhaps surprisingly, in South Carolina. In the latter, over 200 international world class manufacturers are established in the Greenville- Spartanburg area. Organizations in these triads are interconnected for mutual benefits. More importantly for the Baltics, where most entrepreneurs who perceive their companies as **makers,** the manufacturing communities in South Carolina take the production function very seriously. **They strive to gain and to maintain their internationally competitive positions.**

New manufacturing methods are developed and are spread throughout the community. New skills are learned and polished in local universities and technical schools. Foremost in these processes are formal alliances and informal exchanges of information and personnel within the networked communities of **makers.** Indeed, the world class **makers** do not function in the manner of Soviet electronic factories or schools that are traditionally almost fixed, stable, highly vertical, and very specialized bureaucratized organizations isolated from each other. The **makers** in Spartanburg (and in Taipei) are, large or small, **above all entrepreneurial.** They place emphasis on their core capabilities and their improvement in global terms.

To become a part of a larger network, companies have to meet technological creativity and intellectual superiority standards to join the **thinkers,** excellent production skills and superior infrastructure to become part of the recognized **makers,** or established high quality connections to join with the **traders.**

The **thinkers** are competent in concept development (ideas, designs, or formulations for new products and services that create value for customers). They are responsible for absolutely the highest new standards of technological advances, creativity and outstanding innovations. They have leading roles in the global economy. The **makers** realize ideas under "real life" terms and create the production standards of excellence. They invest in the best infrastructure and production skills of employees and assure high value and cost-effective production processes. In **makers,** they have to become famous for being a world class manufacturer to attract the best clients.

The **traders** specialize in establishing alliances among businesses and form valuable connections on the international level, provide qualitative services across borders, transport goods and create more value for their customers. Resources should always be updated and continuous innovations realized in order to meet the rising world standards and to ensure a position in the market. Very often they are located in points where different economic and social cultures meet, a century ago in Riga, today in Hong Kong.

Writing of specialized communities, Kanter stresses the concept of **place.** This emphasis suggests the importance she attaches to communities where individuals and organizations are in close and frequent, formal and informal contact with each other. World-class excellence is cultivated publicly, but **the linkages make it personal and persuasive.** There is a need to have a friendly innovation policy environment to implement new strategies.

Innovation policy promotes basic changes, all at the same time. They are new products and services, new technologies and new ways of working together. In addition, innovations help improve existing operations. Baltic companies cannot support all the necessary infrastructure for innovation. Innovation requires both private and public support.

World-class **makers** are already at work in the Baltics. In Estonia, three companies make IT products that are representative of the latest technological demands.

Elcoteq, a global Finnish firm, with operations in Tallinn, now extends them beyond a line of mobile telephones to a full line of mobile network equipment, electronics for base stations, and antenna products. Highly qualified personnel enhance the potential of Elcoteq in Tallinn. It includes an unusually large number of employees with college degrees. It is reinforced by close relationships with the two leading Estonian universities and other schools. The list of global industry leaders among the firm's customers *(ABB, Andrew, Nokia, Phillips)* reduces the risks of dependence on one major buyer *(Ericsson).*

An exciting development in electronic commerce is wireless technology. Often called mobile or m-commerce, it allows one to conduct online translations, make purchases, and send other messages. Two Estonian companies, *Eesti Mobiltelefon (EMT)* and *Q-GSM,* are deeply involved in the development of wireless application protocol *(WAP).* The wireless application protocol is the first service opening the Internet to the mobile communication environment. The technology is still in an early phase, but the price of using a *WAP* connection is less expensive. Moreover, the volume of data transferred is basically unlimited. The *EMT WAP* portal includes a telephone directory of clients, and other linkages.

Together, the three companies mentioned here, represent demonstrated Estonian excellence as **makers** of world class high technology products in the broadest sense of the word. The presence of these companies is a powerful argument for attracting other international clients to Estonia. A larger number of such investors and customers are likely to help establish a whole networked community of manufacturers. A few more steps forward, and we can expect the emergence of Estonian firms that will make products of their own invention Indeed, we are reminded of President Lennart Meri's call: "Where is the Estonian *Nokia?"*

Latvian world class **makers** are found in several intellectual industries. We suspect that for this reason, there is a larger, more solid base of interdisciplinary cooperation and what may be a stronger tendency to explore unusual technological frontiers. As a place, the Riga area offers a concentration of leading Latvian universities, several other model schools and several research establishments. With an orientation toward applications, it provides good beginnings for further advances, especially as networking and cooperation develops among the young professionals.

Amerilat, a new IT player, combined knowledge of medicine, communications, and economics to create telemedical solutions and export knowledge-based products. A global **maker,** *Amerilat* is very closely tied to Latvian **thinkers.**

Tehprojekts, a Riga company of industrial tools, dies and fixtures is a **maker** that combines fine craftsmanship with the latest technologies to serve the worldwide automobile industry. It is a supplier to *Audi, Moskvich, Toshiba, Toyota, TRW,* and *Volvo.* With the related strength of the Riga Technical University, the company may well become a magnet to companies looking for partners that make capital equipment for manufacturers.

A company that may be considered a **maker** and **trader,** *Siemens,* arriving in Latvia by way of Finland, is heavily involved with telecommunications, **energy,** health care and other industrial applications. With a vast international experience and global contacts, *Siemens* is able to meet the most demanding customer needs in both the private and the public sectors. Sales are expanding very rapidly.

Finally, there is Latvian **maker,** *Anda Optic,* located 160 kilometers to the East of Riga, challenging the concept of a physical place as the location of an intellectual community. A maker of specialized optical fiber bundles, it is a small company that strives to maintain ties with research in Riga, and is obviously in close touch with the parent company in Germany. The physical separation from partners and customers is minimized with modern

communications and a management that is very oriented to the highest quality production combined with continuous technological improvement.

Summing up, this small sample of high technology ventures in the Baltics suggests that these countries are in the process of establishing **maker** platforms for a future in high technologies. Although the Estonian examples suggest a closer affinity to hardware manufacturing, all Baltic experience suggests increasingly closer relationships with application-oriented **thinkers** across traditional disciplinary lines.

Electronic Commerce in Latvia

The domestic IT market in Latvia is currently about $150 million. Computer software has 12% of the IT market with a value of approximately $18 million. There are now over 100 software development companies in Latvia. Software professionals are engaged in a wide variety of systems ranging from financial and corporate management systems to database and library systems. IT will be one of the key development areas in the future. The number of Internet users will grow considerably since only 6% of the population are currently using the Internet every day.

The technologies of E-commerce play an increasingly important role in sustaining business networks among partners and customers in different parts of the world. In Latvia, the networks make it possible to use business-to-business (B2B) technologies. It is one of the key factors that raise the ability of businesses in Latvia to join global networks.

More and more promising IT and electronic commerce application projects are realized in the Baltic States, which form the prerequisites for further productive developments. Successful cases of how companies adapt innovations, join global markets, or become top players at home, are reviewed. In all the following cases, not necessarily in the largest IT companies in Latvia, previous experience, high intellectual capital, and cooperation are the keys to success. Here are successful examples of recent Latvian experience with the highest technologies:

- *Vide Infra Grupa* is a company where intellectual capital is combined with integrated innovative ideas. Here, new IT applications help to lower operational costs or to bring new revenue to the established value chains. *Vide Infra Grupa* has the necessary IT skills and highly skilled employees to be at the leading edge in a carefully chosen field. With investments from the Estonian venture capital fund *LVHH Enterprises* (led by *Lohmus Haavel & Viisemann* investment bank) *Vide Infra Grupa* is now concentrating on business-to-business e-commerce and enterprise Internet solutions. An established leader in the region, *Vide Infra Grupa* supplies industry leaders with modern, cost-effective Internet solutions for the optimization of business processes. It specializes in mobile Internet applications, integrated with web projects and content management software. The company markets across all Europe. *Vide Infra Grupa* is the supplier of the Internet-based *Extranet* system for *British Airways*.

  The new system is intended for 16 Eastern European countries as well as in Eastern Mediterranean regions. The system is designed to deliver effective and versatile information about the passenger services of *British Airways.* It should simplify daily operations for travel agents and offer a much wider choice of opportunities in seeking flight information and booking seats. Latvian IT professionals report that all specifications of the client are met. (The newly developed system is accessible on the Web: http://www.ba4you.com).

- Another outstanding Latvian IT company is *Tilde*. It is known in the Baltics as the provider of Internet television services. This company concentrates on the development of products for localized fonts, Latvian language support, proofing tools, electronic dictionaries, multimedia encyclopedias, and *Web TV.* (The television site is accessible through http://www.tv.lv, http://www.tv.ee). *Tilde's* Latvian language support software is the best selling software in Latvia. *Tilde's* Latvian spelling check and hyphenator program is the first and the only commercial Latvian proofing tool. This software is licensed by *Microsoft* for inclusion in the Latvian version of *MS Office.* Besides the elaboration of existing products, *Tilde* is expanding its work in new areas of

NLP- machine translation system and speech technologies. High-level morphology and thesaurus are under development.

At present, *Tilde* is the font localization and distribution center in the Baltic States. Its focus is on designing localized versions of Roman fonts for Eastern and Central European, Baltic, Cyrillic and Turkish language groups. *Tilde* also works in the field of multimedia technologies, including a digital encyclopedia of Latvian history. Fruitful cooperation with *IBM* and *Microsoft* is known as the principal factor in gaining such important new customers as *Berlitz, Ericsson, Hewlett-Packard, L&L, Navision, Xerox,* and others. In following modern trends, *Tilde* is exploring opportunities in government applications. It has allied with *Age Com,* one of the largest marketing communications companies in the Baltic States.

- *SWH Technology (SWHT)* has an enviable performance record in medium and large-scale IT projects for clients in Europe, North America, Asia and the Middle East. The company designs and makes workflow and imaging products for customers in the United States. *SWHT* is the developer of an *SAP R/3* bridge. It is linked with the standard *IBM Factory Operations System*. Since 1998, the company is one of the *IBM Core Suppliers,* working across four time zones.
  SWH Technology plans to merge with *Exigen Group,* a multinational corporation sharing dual headquarters between San Francisco and Amsterdam. Among the software products developed for international markets by *SWHT* are the following: a workflow system, an imaging system for integration with the workflow system, the universal serial bus driver for *OS/2,* and various *IBM* mainframe applications. *SWHT* is now an integral part of the *Exigen Group* operational backbone. Further, the existing *Exigen* operations in Eastern Europe, most notably in Russia, will now report directly to the Riga office.

Education and Training for IT

Technology changes rapidly. Even a well-prepared American engineer's knowledge is said to have a life of five years. It is about three years in IT. Present demands on higher education in developed countries are repeatedly expressed in terms of the need to keep ahead in the new global economy. The new competitiveness in the international economy calls for competition in every field. It embraces the institutions that deliver knowledge academically as well as those that provide more applied training for industry. Basic education has to be in-depth and well rounded, including the knowledge and experience in working with other people. The existing educational system in Latvia today stimulates learning with team and project assignments. It fosters indirectly and inadvertently, competence in cooperation among students.

Students in the Baltic States are now accessing information from worldwide sources over the Internet. Some are designing online materials. Other schools lag behind, and many lack more traditional equipment, like books and furniture. Estonia leads the way in school Internet access and IT development. At least two thirds of primary and secondary schools have permanent Internet connections, while 13 percent have telephone access. In Latvia only 20 percent of schools have permanent radio-link Internet access. Internet access is lowest in Lithuanian schools.

In Latvia, the universities work hard to improve networking across disciplines and research institutions. This is difficult due to established traditions, but visible successes of joint projects are becoming attractive models to follow. There are growing demands for postgraduate adult education to meet the increased skills needed by industry, as well as a healthy demand for IT graduates. Quality of instruction should be a key factor in attracting students and employer support to programs with good employment opportunities.

At present, there is an unmet need for more experiential postgraduate education programs in IT. Knowledge in this field must be constantly renewed, enriched, and extended into the future. In postgraduate studies, we expect that the formal boundaries between public and private higher education and other providers of knowledge will be eroded by networking across the board, timely joint projects, and flexible approaches to training. Such patterns are similar to developments in American universities where cooperation between academic and industrial leaders is remarkably responsive to emerging needs. We agree with Professor Sir

Douglas Hague of the Manchester Business School that university monopolies to grant degrees should give way to a wider sharing of teaching and learning.

The existing environment already prepares a select few open-minded specialists that can join experienced professional teams in a very short time period. Recent university graduates in Latvia generally understand the dynamics of a transition society quite well. They like to work on specific projects. They are successful at work, and they want to continue learning.

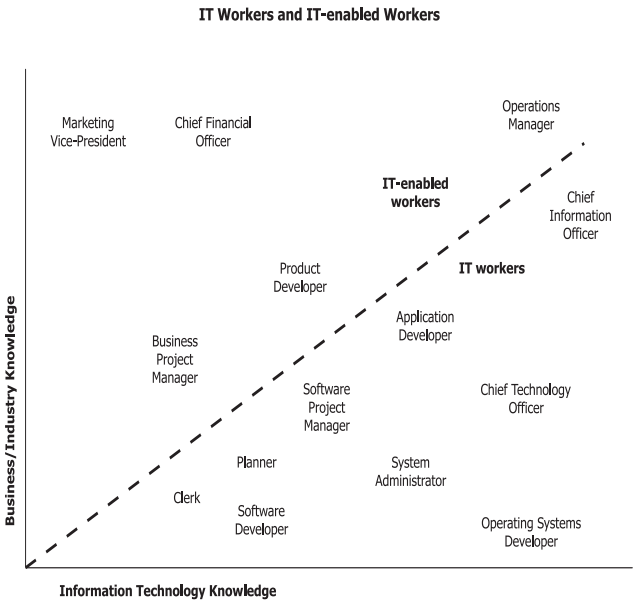
Education and training of technical personnel usually requires a special balance of technical and business skills. The chart shown below is based on observations in America and Latvia. The balancing of skills shown provides a remarkable flexibility in making adjustments. They are especially important in situations of rapid change.

The increased adoption of IT increases both, the supply of IT workers as well as the demand for them. Chart 1 shows that a great variety of IT workers and IT enabled workers will be required in various occupations throughout a modern economy. This presents a very large task, and points to public and private obligations. There already is a worldwide shortage of IT experts. There are reported difficulties in recruiting highly skilled IT workers in the fields of computer science, electrical engineering, software development and systems analysis. According to Latvian software company *Dati* (a large employer of programmers), this trend is very evident also in Latvia.

What is commonly called the Danish Latvian IT College, it represents a major step forward. Established by the Riga Technical University and the University of Latvia, it is intended to provide the most modern professional IT education. The aim of the college is to design, develop, improve and implement new IT programs. These programs are in part targeted to the preparation and improvement of IT teaching staffs. The Danish support for these programs extends to the provision of new teaching materials and technical support systems.

This new institution joins an array of model schools, including the Riga Business School and the Stockholm School of Economics in Riga with international academic programs with English as the language of instruction, and a new law school. Under these circumstances, it is clear that the Danish IT college will be new and different in many ways. There will be cooperation with IT organizations and experts from Denmark and other EU countries. It is anticipated that there will be partnerships and joint projects with industry to define and to promote common activities and useful interactions to make the new institution truly dynamic. The magnitude of the potential is indicated by plans to graduate up to 2,000 IT workers annually.

Chart 1



In the next decade, the higher education sector in Latvia will be subject to greater competition for funds and students. Higher technical education will become more efficient with a clearer focus on the needs of business and industry, as well as on more flexible approaches to meet them as they change. Students should demand better education and require training designed to enhance their careers. **The higher education institutions of the future should integrate their plans and programs with local and regional communities, usually with an international dimension. Therefore, the next decade will be a period of great change internally and in terms of external linkages. Change demands clear targets and much flexibility to reach them.**

Decade of Decisions

There are good, although limited, foundations for technological development and growth in the Baltic States. The best examples already show excellence and efficiency in IT work. The reputation of Baltic intellectual industries is improving. In the next decade we'll begin to see the future of Baltic economies unfold.

At this point, it is premature to make firm predictions concerning actions that will be taken in the Baltic States to advance technological innovation. It is even more inappropriate to forecast the expected progress in each country, region, or major city. There are three possible scenarios:

- At worst, the Baltics may get stuck in the present mix of industries and employment structures. Policy makers and operational managers may try to avoid the famous gales of creative destruction predicted by Joseph Schumpeter some time ago. Preoccupied with notions of stability and the limited opportunities for production of market value, they may actually increase their dependency on international loans and foreign investors in land resources.

- More likely is the continued reliance on the illusory stability in basic agriculture and traditional industries, on very gradual education and training reforms that still do not match Nordic levels, and the continuing income redistribution to provide a decent living for aging populations. Such policies may slow down the unavoidable progress of technological innovations in manufacturing and service industries. Increases in national productivity may be very modest. New technical enterprises, started mostly by families or by small, closely integrated groups of professional colleagues, will do well and grow substantially in capitalizing on new opportunities in the intellectual industry.

- With luck and wisdom, a good international climate and sound policies, the Baltics will give priority to the support of new ventures in the intellectual industry to the point where obsolete jobs are replaced on a larger scale. With an orientation to markets in advanced economies, the Baltics will gain increased recognition for work of high quality. A combination of enlarged exports and productivity increases in all industries will raise the national standards of living. Such policies will result in a growing number of entrepreneurs engaged with international partners. Enlightened tax policies will permit them to accumulate traditional domestic capital. Education and training, financed by the public and the private sectors will become a continuum for the acquisition of new insights, knowledge, and skills, and raise the intellectual capital in the Baltic States. Deserved trust and cooperation with government and within private enterprises will create many new organizational investments in the much needed social capital formation that will take many forms appropriate to given industries.

Dynamic changes, with uncertain benefits and losses for everyone, will continue in the Baltic States. They are now part of our changing world.

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The Baltic Cyber City – Opportunities and Threats

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E- is one of the most popular signs one can observe today in the media and surroundings and as the developed part of the world is continuously digitalizing, the rest of the world is doing its best to catch up. Everyday life, work and even private life is becoming more and more dependent on computers and the Internet. Latvia is also on its way towards the e-environment by launching the Baltic Cyber City project, which is a component of the e-government plan.

The "American Perestroika" and the Baltics

Researchers and managers in the world have already spent a significant amount of time, trying to investigate opportunities to make the work of organizations more efficient. This efficiency should be measured in terms of speed of information flows and time required for policy implementation. The government has been taken as a model for this type of analysis and some challenging aspects of recreating the way governments should function was reflected in research carried out by Osborne and Gaebler (1, Osborne and Gaebler, 1992). The authors claimed that the "American Perestroika" was under way as the politicians and bureaucrats under great fiscal pressure were introducing market forces into monopolistic government enterprises.

Though the research was completed in 1992, suggestions outlined by the authors can be related to the present situation in Latvia and other Baltic countries: 1) steer not row (do not provide services, but ensure they are provided), 2) empower communities to solve their own problems rather than simply deliver services, 3) encourage competition rather than monopolies, 4) meet the needs of the customer, not the bureaucracy and 5) decentralize authority.

A certain role was attached to the research of political scientists to reform bureaucracy. They claimed that the structures created in the beginning of the 20th century can hardly survive in today's turbulent environment which is information-rich and knowledge-intensive. The governments should transform themselves by flattening hierarchies, decentralizing decision-making, pursuing productivity-enhancing technologies and stressing quality and customer satisfaction. This approach tends to involve the market in the governments' work. However, markets are only half of the answer as communities should also be actively involved in order to shift away from administrative bureaucracies.

The Baltic Cyber City project is designed to confront the issues proposed by Osborne et al. Project leaders revealed (2, Berug and Jerums, 2001) that the cyber city will have an economic, social and political impact. It is also a part of the e-government project in Latvia. The environment developed will be devoted to increasing the speed of communication between society and governing structures in order to make the opinion exchange process more effective. Through the use of Internet, the government will become much more accessible for the public.

In general, present governmental structures fully match propositions outlined by Osborne et al. Through increased efficiency of communication and extensive knowledge exchange and sharing, the government will be able to strengthen its supervising capabilities, which would allow the freeing up of more services so that the execution of them could be passed to different institutions while not losing control of the process.

The communities would have more effective decision-making through extensive opinion exchange, allowing problems to be solved quicker, more efficiently and with more benefits to the involved parties. Information technology will also generally foster business development, giving more power to small and medium-sized businesses and achieving increased competition. Closer interaction

with people would also ensure that the government would pay more attention to the people's needs. For example, the government would become more customer-oriented, whereas now, the needs of the most powerful (usually economically) part of the society are considered first.

Organizations would become less bureaucratic since more effective communication flows and productive teamwork would require less people in the government, speed-up processes and decrease costs. The Baltic Cyber City project is just the beginning of this process, but the conceptual framework includes the necessary model for the development of society and for the fostering of economic, social and political development.

The Project in a Nutshell

The Baltic Cyber City project intends to shape the environment where the IT program of Vidzeme University College (VUC) and both local and foreign IT companies would be located. To support this, a building is planned in Valmiera with infrastructure (communications, technical support) compatible with the highest standards of the industry. Besides premises for the IT program of VUC and other enterprises, a conference hall and laboratories for experiments and a "business incubator" for IT undertakers who want to start up private businesses will also be set up.

The vision of the project is "Vidzeme – an e-region" with high standards of living, providing the potential for a well-functioning information-society and long-term growth. The mission of the project is to generate the development and growth of the Vidzeme region.

The Vidzeme region

During the last five years, there has been a serious ongoing development in the infrastructure and usage of the Internet. "Lattelekom" (telecommunications monopoly) has not met the set goals of providing the whole region with digital communications; however, the Internet usage has grown. Within the year (spring 1999 – spring 2000), the Internet usage rate in Latvia increased from 5% to 13%; in fall 2000 the Internet usage rate in Vidzeme with 360,000 inhabitants was 15.4%. However, the uneven division of IT-availability between different parts of the region is considered to be one of the problems in development of IT in the region.

The Baltic Cyber City – in an international context

Several cyber city projects have been carried out in the world, like Denmark, Finland and Malaysia.
The Danish Cybercity (3) is one of the leading independent broadband and Internet services providers in Denmark. The broadband services provided ensure the opportunity of delivering excellent quality content to the network for companies and private users. However, the project in Denmark is merely an Internet service provider and the only similarity with the future Baltic Cyber City is the creation of high-performance IT infrastructure, which can be successfully used by businesses to enhance their activities.

One of the most successful projects called Multimedia Super Corridor (MSC) has been developed in Malaysia (4). The idea of the project is similar to the Baltic Cyber City, involving high-tech companies in the development of a special economic cluster. They also have tax reliefs and a highly developed infrastructure, fostering the development of new products in several areas.

Broadband networks, services and applications, as well as telecommunications and cellular services are brought to the market through the innovations of the companies working together at the MSC. The expectations of MSC have already been exceeded, since the number of firms participating is already larger than anticipated, and continuous development has been observed. The cluster is considered a potential rival to the Silicon Valley in the United States (5). However, the environment in which the cyber city was created differs from that of the Baltics.

Beneficiaries of the Project
Local authority: e-control (efficiency, transparency)
State: development and growth
IT businesses: start-up opportunities, tax allowances, good infrastructure
Vidzeme University College: greater employment opportunities for graduates, research opportunities

The development of the Malaysian IT-sector has been rapid in the last years because industry giants moved their assembly plants to regions which also facilitated the growth of qualified human capital. Some doubts of a fast and successful project implementation arise when comparing the Malaysian case to the situation in Latvia, where the eventual cyber city region will have approximately 60% IT analphabets. Changing the attitude of society and providing education will require significant investment. Vidzeme University College, which is currently considered to be the main human resource provider there, has opened an IT undergraduate program, and the project organizers hope to attract a workforce from other Eastern European countries.

The creation of the cyber city will have the same positive effects on the region's development as a new university would. In the Malaysian project small and medium-sized businesses complain about the huge costs of being in the MSC; the giants have access to the cluster, whereas start-ups are constantly losing their competitive advantage. The Baltic Cyber City, instead, is planned to be a major support for small and medium sized businesses. The cost structure of the project, however is not developed in detail yet, which allows for some uncertainty about the chances.

Finland's developed technology park has inspired the Baltic Cyber City organizers. The Turku (6) project delivers local government activities by Citizen on-line, so the people have continuous access and the chance of expressing their opinions. The Technology Centre is spread over several buildings called ElectroCity, EuroCity, BioCity, DataCity and Old Mill. It is a community composed of 230 technology and service companies, research and education facilities, and development departments. Achievements have been tremendous over the past years, and products and services for different types of industries have been created.

Considerations of different environments in which the projects are implemented when comparing Latvia and Finland are essential, but the potential for a successful cybercity in Valmiera definitely exists. At present several countries including Canada, Singapore and the United States are taking the lead in the global trend delivering such an interactive content efficiently to communities. Finland is among the next level of countries called "visionary followers" since they provide a high number of services and a moderate level of site sophistication (7).

The Economic and Political Perspective

The project implies a number of economic and political perspectives. IT business solutions, intellectual capital, balanced infrastructure and re-qualified workforce are the main economic goals, while the fostering of regional development and the transparency of governmental institutions form the most important political perspective.

Socio-economic goals:
The development of **IT business solutions** relates to e-commerce and e-government. Companies located in the Baltic Cyber City will be capable of creating and implementing necessary IT solutions for private businesses and governments within the Vidzeme region. These companies will become idea generators for new business solutions, using IT tools. Vidzeme University College will play an important role in providing talented and well-educated staff. The development of **intellectual capital** and human resources will be a priority. The base for attracting knowledge-hungry and hard-working individuals would be offering attractive work conditions for new professionals to prevent their outflow abroad.

The development of a **balanced infrastructure** including for example communications, broadband, and other factors that will shape the technical success of the project, is crucial for the Vidzeme region development. A "friendly" surrounding environment with IT-friendly services and educational programs comprise another dimension of the infrastructure.

The re-qualification of a workforce capable of using IT tools and working within an e-environment is one of the long-term goals. The project group has made a number of road-trips to develop the societal attitudes towards the "e-".

Socio-politic goals
According to Osborne et al, meeting the needs of the customer and not the bureaucracy, and decentralizing authority, would foster the introduction of market forces to monopolistic, bureaucratic forms of government. Implementation of the accessible from

an outside information program, which is a component of the Baltic Cyber City, will raise society's participation in and facilitate monitoring of the bureaucratic mechanism.

This could be done through **fostering regional development** in Vidzeme. Centering in a specific location of the region, the cyber city will also involve rural areas in its development. This should eliminate the imbalance of development between towns and rural areas.

To **meet customer needs,** serious work on promoting IT development ideas for governmental institutions as well as non-government organizations needs to be done. One of the main goals of the project is to make the institutions work more efficiently and transparently, thus facilitating interaction between inhabitants and those institutions. Service and attitude towards the customer of a government institution will change as less face-to-face contacts would be necessary, and all parties could concentrate on their real responsibilities.

Problems and Threats

Recently the Latvian government acknowledged that Latvia, a small global player, will not be able to compete with industrialized countries in producing goods, but there is an opportunity in delivering services, thus generating added value. IT-related education in the higher educational institutions of Latvia is highly regarded and many graduates with IT background being employed abroad confirm this. This is a serious concern in the state, since there is excess demand locally for educated professionals, and it can be assumed that improved infrastructure will attract graduates.

A problem that needs examining at this stage is the financing of the project. PHARE has allocated a subsidies fund that would support projects aimed at development. However, the Baltic Cyber City will undergo a close investigation or feasibility study before any money will be allocated. Even if the feasibility study delivers positive results, PHARE would still provide funds only for the start-up phase, which is 75% of the total projected amount. International contacts and a positive and supportive attitude from the business community and the government will be crucial.

One of the trump cards in Baltic Cyber City's hands is the creation of the business incubator, which will be the pivotal point upon which the project will be a success. However, if the government does not approve tax allowances for companies operating in the cyber city, equal opportunities still remain, thus complying with EU directives. The project group will have to spend considerable time and effort with authorities to convince them that more rapid growth would occur with tax allowances.

Preliminary research on the Baltic Cyber City project presents two possible clusters of threats related to human resources and funding. It is too early to reveal more detailed problems, as the research is ongoing; however, already at the present point it is clear that the outcome will foster the overall development of the Vidzeme region.

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Key Factors for Success
Provide tax allowances for Baltic Cyber City or create a special economic zone.
Attract distinguished human resources for both the start-up phase and the sustaining of long-term development.
Attract financial assets and investments for start-up.
Ensure active participation from the project stakeholders in its development
Create positive resonance internationally thus gaining support for the project.
Establish close cooperation between Vidzeme University College, Vidzeme local authorities and businesses.

Electronic Signature: Moral Problems and the Answer given by Israeli Law

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There are many occasions when people have to verify or prove their identity. Commonly, in the real world, producing various physical documents such as an identity card, passport, birth certificate, or driver's license can usually serve as a proof of one's identity. Related to this, by personally signing a document, be it an agreement, undertaking or any other legally binding document, the person actually authorises that he or she agrees to the terms set in the document. In e-commerce all these techniques are not plausible means for making an agreement.

The reason for this is that there is no actual face-to-face contact between the various sides to an agreement; the person can neither provide physical documents that serve to prove his or her identity nor can the person physically sign a document or agreement. Nevertheless, in electronic commerce, as in any other form of commerce, a person is still required to give his or her authorisation to a certain deal or transaction by means of their personal and unique signature.

Hence, signatures in electronic commerce are digital. One should, nevertheless, also remember that not all signatures are meant to be legally binding. People might sign their names for many different reasons, some of which are not legally binding signatures that authenticate a commercial transaction. For example, it is customary to sign one's name at the end of a letter. Such a signature is not for the purpose of verification of identity, or for undertaking to fulfil any obligations.

If and when electronic signatures become common practice in e-commerce, we will have to deal with several ethical, moral and legal problems. From an ethical point of view, the introduction of electronic signatures is an enormous change in the norms of commerce all the way from the traditional and familiar face-to-face handshake to a very distanced and remote click on the computer keyboard.

Morally, this ethical change should be analysed as it affects the notion of "trust", and consequently what it actually means to trust someone in e-commerce. It should also be analysed as it effects the inclusion (or the exclusion and isolation) of small to medium sized business as well as economies that are technologically less adapted to the new economy.

Legal solutions might resolve problems connected with authentication of the identity of those using the system, but this does not answer the moral issues at stake. More specifically, signing a document has always been both an act of making a promise and thus obligating oneself as to the future as well as an act of providing authentic identification. The moral problems with electronic signatures pertain to the act of promise making whereas the legal issues have to do with authentic and reliable identification of the signing agent.

The Morality of the Handshake

Traditionally, commerce was based on face-to-face contact and a handshake. This traditional handshake, where one looks their business partner in the eye and shakes the other's hand was morally and legally binding. This is how trust was established. One sense in which a handshake is morally binding is that a person has special moral duties to the people with whom one has close and intimate contacts, similar to the special duties one has towards friends and family.

Obviously, a complete moral analysis should stipulate all the preconditions and pre-understandings to a truly morally binding

handshake, but simply put it is just not right to deceive and cheat people who are close to you. The traditional handshake is a symbolic gesture of making a promise and obligating oneself as to the future. The myth of the face-to-face contact supplemented by a handshake is that if a potential business partner is unreliable, has creepy eyes and cannot be trusted, one will simply not agree to shake their hands. The gesture of a handshake is symbolic in that it establishes close and intimate relations while seemingly letting one's guard off and giving assurance as to the future.

This symbolic gesture of a handshake should be understood in the proper context. It is an act of giving an assurance to another human being as to the future. It is the act of making a promise. It is a symbolic action, which in the proper context, is duty binding. In this sense it is similar to what Austin called a performative utterance (Austin, 1962). Performative utterances are utterances that in saying what I do, I actually perform the action. Austin suggests the following example, "suppose that in the course of a marriage ceremony I say, as people will, 'I do' –(sc. Take this women to be my lawful wedded wife)" (Austin, 1961). Thus, to follow up on the analogy, a performative utterance is an action through which one becomes duty bound to another as to future behaviour, as the old saying goes "our word is our bond" (Austin, 1961).

Making a promise in this manner is something very basic to human beings and to human relations with deep natural origins. Lichtenberg (1773) expressed this powerfully when he wrote that, "For the ox and ass can do things too, but up to now only a man can give you an assurance". Similarly, Hume (1777), arguing against various legalistic conceptions of the social contract as based on some kind of original contract, sought to explain that there is not much that is more basic to social life than the notion of a promise and giving assurance as to future actions. We are bound to observe our promises simply because the notion of a promise is so basic to human subsistence, without which society could not subsist. Because this notion of giving assurance and of making a promise is so basic to social life it is culturally manifest in various performative utterances or actions and powerful rituals, such as the handshake.

To briefly recapitulate the argument so far, the idea here is that the act of signing a document or contract is of the same type of action as shaking hands when agreeing on something. These are performative actions, which give assurance as to the future. They are of the same type of action as the actions of the bride and groom uttering, "I do" at the critical point of their wedding ceremony.

Now, with the technological innovation offered by the internet and e-commerce, the performative action of signing a document or the traditional handshake might be replaced with an electronic click on the computer's keyboard through which we promise via an electronic signature. Such promises and assurances made from afar and via the medium of e-commerce might be legally binding, but it is not clear whether the force of the performative action can be retained through such signatures. Clearly they lack the power of traditional rituals. Moreover, whereas in the more traditional forms of making a promise and giving assurance, trust was based on the human contact within a powerful cultural ritual, here – in the context of e-commerce – trust is merely a matter of providing the proper legal assurances.

Turning to a slightly different issue, one of the advantages of the traditional handshake is that except for certain religious traditions, which exclude women from contact with men, the traditional handshake is an inclusive gesture of agreement. Everybody is capable of demonstrating agreement by looking the other straight in the eye and shaking hands. It requires no literacy, such as is required when signing one's name. It requires neither a secure financial backing nor any special technical skills, such as operating a computer. In this respect, if the free market is supposed to be free to anybody, the handshake could be perceived as the epitome of an inclusive signature.

The new economy and e-commerce in particular cannot rely on the traditional notion of trust as manifest in the handshake and instead has to turn to various technological devices that are aimed at ensuring the protection, confidentiality and reliability of agreements and contracts. The human notion of trust, as based on face-to-face contact, is replaced with techno-legalist techniques aimed at guaranteeing that, although one might never meet the other party to an agreement, one can trust that the other's identity is authentic. This issue is treated in depth by the law. However, before getting into this issue in more detail, by looking at Israel's

Electronic Signature Law, which came into force on October 4th, 2001 as an example, we should make one further moral distinction.

Electronic Signature is not an inclusive signature. Even people, individuals as well as managers in small and medium size businesses, who are computer literate, may find it difficult to obtain all the authorisations in order to be eligible for an Electronic Signature. Nevertheless, e-commerce brings new meaning to the idea of inclusiveness in commerce. The very idea of a global village has to do with the fact that geographical distances matter less today than they did in the past. In the past, not being physically at the right place at the right time, meant that one was not able to sign the contract. The fax might have solved some of these problems, assuming one had a phone line and fax machine.

However, in other words, the supposedly inclusive handshake actually excludes people from commerce if they cannot be present and sit in long meetings at the various commercial centres of Europe and North America. The Internet and the technologies of e-commerce manage to bring straight into our offices and homes sounds and sights from far away. As articulated by Albin (2001) the measure and criteria for 'near' and 'far' have changed. It is now possible to read the *New York Times* on a daily basis and shop in the best stores no matter where one is around the world. Through the technologies of e-commerce a business partner that is far away geographically can be more accessible and be perceived as closer than a potential partner who as it happens is right next door.

The Answer given by the Israeli Law

The change to the concept of signature and personal trust creates a moral need for a legal duty to secure the new mode of signature and its reliability and minimise the risks, so that people will accept the new trend and agree to replace the traditional hand signature with the electronic one.

Some of the legal problems that occur in electronic commerce pertain to the authentication of the digital signer, the law governing the transaction, languages used, securing integrity, privacy and confidentiality. In Israel, the Electronic Signature Law, 5761-2001 and regulations enacted in its virtue, which came into force on October 4, 2001, focus mainly on the problem of authentication.

The new act stipulates that for any law the requirement of a signature on a document may be fulfilled, in respect of an electronic message, by use of an electronic signature, provided it is a certified electronic signature. A "certified electronic signature" is a secure electronic signature for which a certification authority has issued an electronic certificate regarding the signature verification device required for verifying it. For that purpose "secure electronic signature" means an electronic signature that fulfils the following four conditions:

a) It is unique to the owner of the signing device
b) It enables apparent identification of that device
c) It is created using a signing device that can be maintained under the sole control of the owner of the device
d) It enables identification of any change to the electronic message subsequent to signing

Any signature that is electronic data or an electronic sign, which is attached to or associated with an electronic message, is considered to be an "electronic signature". A certified electronic signature is presumed to be a secure one. An electric message signed with a secure electronic signature is admissible in any legal procedure and constitutes a prima facie evidence that the signature is that of the owner of the signing device and that the electronic message is that which was signed by the owner of the device. An output of an electronic message signed with a secure electronic signature, will be regarded as an original message, and not as copy of the message.

The new law puts a duty on the owner of the signing device (which is defined as unique software, object or information required for creating a secure electronic signature), to take all reasonable steps to protect the device and prevent unauthorised uses thereof. In case an owner of a signing device discovers that the device has been compromised, the owner of the device should notify anyone who might reasonably rely on the owner's electronic signature based on routine relations between them and anyone whom the device owner knows will probably rely on the device owner's electronic signature. An owner of a signing device who does not fulfil all these obligations may be liable for

any damages caused by unauthorised use of that owner's signing device.

A signature verification device (which is defined as unique software, object or information required for verifying that a secure electronic signature has been created using a specific signing device) can be confirmed only by electronic message issued by a certification authority. An electronic message is information generated, sent, received or stored by electronic or optical means, while it is seen, read, heard or retrieved by aforesaid means.

In order to become a certification authority, the authority should be registered in a registry maintained by a registrar appointed by the Minister of Justice. The registrar may recognise as a certification authority, also any authority from outside of Israel that verifies electronic signatures, provided that the registrar finds that it fulfils conditions similar to those required in Israel. All certification authorities are supervised by the registrar.

A certification authority may issue an electronic certificate to a specific person, upon that person's request, indicating that a certain signature verification device belongs to that person. Certification authorities are obliged to use only trustworthy hardware and software systems, which provide reasonable protection from penetration, disruption, interference or damage to a computer or to computer material, and provide reasonable level of availability and reliability.

A certification authority is obliged also to maintain a database of electronic certificates that it issued, as well as a database of revoked electronic certificates. A certificate authority must revoke an electronic certificate in the event of any of the following:

a) Upon request from the owner of the certificate;
b) Upon discovery that part of the information in the certificate is incorrect, or that the certificate is no longer reliable for any other reason or that the signature creation device of the owner of the certificate is no longer reliable;
c) Following the death of the owner of certificate, or – in case the owner is a corporation – following an order of its liquidation; and
d) Immediately upon discovery of fault with its secure electronic signature or with its hardware and software system, that might derogate from the reliability of its signature or of the certificates it issues.

A certification authority serves as a third trusted party. As a result, it may be liable for any damages caused by its negligence or non compliance with the law and regulations issued. For that purpose, the law demands that prior to registration of a certification authority, the applicant files a bank guarantee or other suitable guarantee, or insures himself with an insurer, as prescribed by regulations issued in virtue of the law by the Registrar, for ensuring compensation for anyone suffering damage due to an act or omission of the certification authority.

However, a certification authority will not be liable for any damages caused due to reliance on an electronic certificate that it issued, if it ascertained that it had taken all reasonable measures for fulfilment of its obligations under the Law. The certification authority may limit certificate uses or sums of transactions for which a certificate may be used. In that event the certification authority shall not be liable for any damage caused due to the use that exceeded any such limitation, provided that said limitations were specified in the certificate. The certification authority has no right to prescribe additional limitations on its liability.

As we can see, the Israeli law and the regulations issued so far, do not answer the problems regarding the law governing various transactions, languages to be used, securing integrity, and privacy and confidentiality. However, the Israeli Government announced that the Electronic Signature Law of 2001 is the first of a series of laws to be presented to the Knesset (The Israeli Parliament) planned to cover the new field of electronic commerce.

Conclusion

Electronic commerce has opened new opportunities and approaches to international trade, global commerce and multinational transactions. Despite the ethical, moral and legal problems discussed, the conclusion is obviously not that this technological innovation should be avoided. People who are more conservative in their orientation might feel uncomfortable with this change. Those who are more innovative will embrace these changes.

However, the important question is how will we, as human beings, adapt to these fundamental changes so that trust is established in commerce. Will we feel comfortable signing contracts via an electronic signature with people we have never met and might never meet? One way or another, in order to ensure that this change happens smoothly there is an urgent need for universal unification of systems and procedures. Leaving this delicate matter to national or even regional legislation may miss the target. An international conference should be convened in order to agree upon international standards dealing with the various questions raised by the new idea of electronic commerce, accepted and agreed standards, which should be applied by all countries by incorporating them into their national laws. The sooner this is done, the fewer future complications will be created.

Our era, the "e – era", involves a real change of cultures, traditions and habits. Though there might be a twilight zone, future commerce will be different to that of the past. The sooner we prepare for that future, the better we will manage.

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PKI Development in Estonia: Issues of Concern

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Introduction

The profound impact of electronic commerce on traditional business operations has greatly affected business processes worldwide. Presently, the major issues of concern for electronic transactions include the security of information (its integrity) and the trust to the second party (authentication) when the transaction is conducted on-line. Information technology has been rapidly developing, and current solutions allow carrying out electronic transactions securely. Cryptography, which is used for codifying keys and is the cornerstone of the Public Key Infrastructure (PKI) mechanism, is one of the tools for achieving secure authentication of identity, privacy and authorized access to information, and it is the guarantor of the verified integrity of electronic documents (ref. 1, *VeriSign,* 2000).

Many countries worldwide have initiated legislation to recognize and to legalize the use of digital signatures as one of the most common authentication techniques. Nevertheless, a law on digital signature is not enough to ensure security in e-commerce; PKI is a solution for many problems. More precisely, the when organizations attempt to optimize internal document management, or are establishing a Virtual Private Network, as well as banks developing their electronic services or governments are willing to issue official electronic identification documents; all these initiatives will need PKI support. PKI integrates software applications, hardware, encryption technologies, certification authorities issuing the certificates for the end-users, and related supporting services (ref. 1, *VeriSign,* 2000). These are tools for managing the database of certificates within common architecture that aims to provide high-level security and integrity of information and eliminate the risks of identity forgery.

Digital signatures serve the same purpose as a conventional signature. PKI facilitating the use of digital signatures provides a higher level of security of electronic documents compared to paper and ink. PKI in addition ensures secure access to information and its integrity.

Creating PKI is an innovative initiative that only recently has become relatively well known for the public. Estonia, in this context, is the leading Baltic country in terms of the development of the telecommunications sector and specifically PKI implementation. The intention of this article is to explore the PKI issue in Estonia, summarizing different viewpoints and relevant information, and current issues of concern for PKI creation in Estonia.

The purpose of this article is to bring up the issue of PKI implementation viability and potential problems that could be expected at this stage especially as seen from an industry experts' position. Estonia has a unique environment for PKI implementation due to the common efforts of leading companies both in the financial and telecommunications sectors as well as government initiatives, which is a factor that justifies qualitative research. (ref. 2, K. Melnikova, 2001).

Background

Public-key infrastructure (PKI) is the combination of software, encryption technologies, and services that enable enterprises to protect the security of their communications and business transactions on the Internet (ref. 3, *VeriSign*). PKI is necessary to make cryptographic signatures work. In fact, cryptographic signatures do not identify a person; they identify a private key (ref. 4, Blanchette, 2000). To bind the private key to a person, a public key certificate is needed that is signed by a trusted third party a certification authority.

Public awareness of PKI issues in Estonia among private persons is low , although PKI offers substantial advantages. There are a number of

benefits, which can be exploited in various industries such as:

1) E-commerce (e.g. using digital signatures when shopping via mobile phone and authentication on Internet web sites)
2) Health care
3) Social security (pensions, electronic identification documents (e-ID))
4) Legal services (taxation)
5) Promotion of on-line consulting services
6) Virtual Private Networks (VPNs)
7) Internal document management
8) Electronic Data Interchange (EDI) in B2B and B2G sectors
9) Better control of citizens with the introduction of e-ID, migration control at customs, genealogy tracing
10) Financial services on-line including applications for loans and other e-banking services (e.g. credit card transaction via the Internet)
11) Secure access and use of public sector information and other governmental services
12) Personal data protection

As an example, Finland has been using digital signatures for several years especially on customs to control the flow of transit and imports. According to Kadi Heinsalu (ref. 5 Äripäev, 1999), an electronic system was implemented back in 1992 and since then has become the basic customs procedure. E-elections are another public service that will be available in 2003 given even today's Internet penetration growth (during 2000 the growth was 40%); Äripäev stresses the fact that regional elections will already be available over the Internet in 2002. E-elections would encourage young people, who have the widest access to the Internet, to vote for those whose target audience is the younger population, as Juhan Kivirähk mentioned (ref. 6, Äripäev, 2001). When digital signatures are in use all e-documents including e-mail will bear the same power as paper documents.

Privador, the daughter company of Cybernetica originating from the Institute of Cybernetics, is the leading PKI-services development company in the Baltics and recently has signed a cooperation agreement with Finnish company Valimo that specializes in PKI solutions and developing software for conducting secure transactions via mobile devices (ref. 7, Privador news, 06.09.2001). Together with government efforts for providing the legal and financial base for PKI implementation, PKI initiatives have all the opportunities to succeed in Estonian market.

Issues of concern in Estonia

This section of analysis is the result of qualitative research conducted in Estonia in order to define the problems at the present stage of PKI implementation. This section summarises the viewpoints of experts. The issues of concern are divided into subcategories based on their nature: organizational issues and problems seen from the perspective of participants/ providers as well as from the perspective of consumers.

Organizational (non-technical) issues

Technology is now sufficiently developed to establish PKI and to start issuing certificates. A more serious impediment is the organizational issues that need to be resolved when developing certification authority strategy or implementing the whole system. Certification authority or CA is the automatic Internet-based service that issues and helps to control the validity of certificates for digital signatures. Combining the efforts of commercial CA with governmental CA is also critical.

One of the organizational problems that Jürgen Niinre (EMT) outlined (personal communication -*PC,* 27.11.2000) is how to connect to larger CA's with his Registration Authority and then how to validate the certificates later. The other organizational issues of concern to be discussed below are CA strategy and compatibility issues.

CA strategy

When setting up a CA, a specific strategy should be developed. When contacting the participating companies *(Eesti Telefon, EMT, Hansapank, and Eesti Ühispank)* about strategic intent, the answer was that they are working exactly on the same issues (working out the strategy and technical solutions) and that there have not been any definitive answers yet. The historical flow of events will be the defining factor in this case.

It is also vital to receive access to governmental public services in order to operate successfully and to issue certificates that are valid and are identifying

the right information. When Certification Service Provider (CSP) is a government structure, it would automatically have access to such government databases as the register of companies, register of migration, citizens etc, but problems might arise with PKI services promotion among potential clients and with public awareness, as well as in generating trust.

Compatibility

It is argued that the issue of compatibility is one of the central issues to be resolved when speaking about the problems in implementing PKI, including the consolidation of different practice statements and certification policies. Hypothetically, when there is more than one CA on the market there is a need for acknowledgements and cooperation in protection of the confidential data from unauthorized access . Compatibility is also central when setting up commercial CA's and government CA's for specific purposes. In the case of Estonia, compatibility is valid when talking about making RA software compatible with CA software, and no more than one CA is expected to enter the market.

Providers' perspective

Profitability and the commercial viability of CSP

The major rationale behind joining the efforts of four large companies is to share the investments costs for PKI (there is no large potential in terms of profitability due to the small population of Estonia). "Everybody hopes that, ultimately, there will be cost benefits because of the increased use of high-risk or legally binding services that currently can not be or must not be provided electronically", emphasized Märt Randoja, Hansapank representative (PC, 9.01.2001). However, the certification business is considered a support function for electronic commerce, not a profit generating service in itself. The key factor for business profitability is scalability in the case of commercial CA's. However, the small size of the country should be taken into account.

Funding

The funding schemes will depend on the type of PKI: either commercial PKI or government PKI. No projections or cost/benefit forecasts are available at present.

Risk management (CA to be able to pay for forgery, or other risks)

When an organization enters business (commercial PKI), the company expects it to be profitable, and the strategy will depend on the sector. However, referring to Sergejs Batovs (PC, 12.01.2001) there are several basic requirements for CA's in order to gain trust and they include:

- Willingness to bear responsibility for any forgery, and to compensate for any mistake. These costs are very high, and only large organizations with significant inflows and funding can afford them.
- Access to public governmental services connected with citizens' identification archives, etc.
- Other requirements related to the technical side: acquisition of the necessary hardware, software, training for employees, etc. These problems are relatively easy to solve .

Risk management techniques have to be elaborated with the help of internal policy statements to get a clear picture of a CA's operations.

Lack of HR, competent employee

Ants Koel (*PC,* 15.11.2000) has mentioned the problem of lacking competent human resources, however, this problem is not of a high priority given that there are resources available for training.

However, it seems reasonable that participating organizations will train their personnel, thus shedding some doubt the reliability of this statement for the overall process in the longer perspective. On the other hand, it can also be argued that this issue would be problematic at the initial stage of PKI implementation.

Customers' perspective

This section incorporates the issues that are necessary to consider since they concern the consumers of PKI services. All these issues are seen from the providers' perspective since no social study or similar research aimed at defining true customer needs has been conducted. The most important issue is the problem of trust. Furthermore, these concerns hold only in the short term, as the more time passes, the further the PKI implementation progresses and the less uncertainty and more trust can be expected.

The problem of trust

The problem of trust can be summarized in the light of two different perspectives: customers' trust of the whole PKI mechanism and customers' trust of a specific CSP. Concerning the former, it is critical to gain trust during the initial stage of PKI implementation in order to ensure future extensive use of enhanced services including e-commerce, legal and public sector services, etc. However, this problem in the case of Estonia is not as vital as it might seem, due to the fact that customers already trust the existing information security tools, proven by the growing number of on-line banking services users. It is expected that customers will accept more secure and developed PKI-enabled applications.

On the other hand, trust of a third party must be considered when speaking about commercial CA's or other than state CA's. Trust is one of the necessary components for building up CA services (the others are IT knowledge and funding) and large companies such as banks and telecommunication companies have acquired customer loyalty and trust due to existing large customer bases. Offering one more service and maintaining customer – provider relations in terms of trust is not so complicated compared with a situation where the government provides PKI and is required to establish state-citizen relations. Brand loyalty becomes critical when a commercial CA enters the market for further successful performance. Customer trust is something that is vital to take into account at all stages of PKI development.

Uncertainty

There is a high level of uncertainty when dealing with PKI, because it is so innovative and the fact that there are no precise measures and steps defined in order to receive a clear vision of the PKI developmental stages. The mass media highlighted the initiative of the participating companies in March 2000 (ref. 8, ID.ee, 2000). In May 2000, the participating companies Eesti Telefon, EMT, Hansapank, and Eesti Ühispank signed an agreement to create a PKI. (ref. 9, Kopran, 2000). The approximate timing of the first issue of e-IDs for physical persons was announced in 2001. Recently the dates have been postponed until 2002 when 180 000 ID cards will be issued. In 2005 it is expected that the whole population will be using electronic ID cards (ref. 10, Kopran, 2000). With the issue of e-IDs and the increased use of public services on-line the problem of uncertainty among private persons will be abolished.

Ease of use and transparency to the end-user

Setting up a PKI does not require much technological effort, as it relatively easy to attach the device to computer or phone to read the certificate . This issue may become critical in case the local software providers don't pay sufficient attention to the convenience of the applications and user-friendly interfaces. Public awareness among private persons may also eliminate this problem in the future.

Other issues

Physical storage of the certificate

The certificate should be stored in some physical object, and there have been continuous debates where to place it. Nokia has suggested placing them in mobile phone SIM cards, but still this is not the most secure solution .

The most secure solution is the most expensive one – to implant the certificate into the human body, but obviously that is not appropriate for mass use. These certificates will be too expensive to issue but relatively cheap to control . The other "almost" secure place for certificates is in a PDA (Personal Digital Assistants, including Palmtops, hand held computers) . In Estonia the certificates and corresponding reading devices will be placed in computers and mobile phones.

The first Estonian e-IDs will be issued at the end 2001 – beginning 2002 (physical storage: smart card) and their primary functions will include personal identification and digital signature for communication with government agencies . Estonia will be the second country after Italy, which will issue an official ID on a smart card with a chip that will be used as an identification document within Estonia. In other countries e-ID is only an alternative for an official document. For instance, in Finland e-ID has to be used along with paper-documents. Italian ID cards have a 1.8 Mb memory, and cryptographic technology is provided by Siemens (ref. 11, Indrek Kald, 2001).

Arvo Naeris (PC, 29.01.2001), project manager in the Ministry of Transport and Communications, states that an ID card is safer and cheaper if certification is not to be changed. However, according to the present law, changes to certification are allowed . At the same time, the ID-card will be issued by state agencies and there is no incentive

for a commercial agent to start issuing similar certificates (due to the size of the country), so competition is not expected. There is cooperation, however, between state agencies as well as large private companies (banks and telecommunication companies) to ensure extensive use of ID-cards.

Conclusions

Estonia is now following international trends in developing its own PKI platform in order to provide information security. PKI offers numerous opportunities in different spheres of life, social and business. At the same time Estonia is going to face several challenges including organisational and other concerns as seen from the perspectives of both customers and providers. They address the issues of CA strategy, compatibility, commercial viability, funding, and management risks. Lack of competent human resources, gaining the trust of consumers, ease of use and transparency to the end-users as well as uncertainty are other issues of concern. Physical storage of certificates is another challenge. The first certificates will be placed on smart cards. The possibility of placing them in PDAs is currently being discussed. .

Nevertheless, due to the lack of de-facto data, several areas have been left almost uncovered. The financial side of a CA in particular and its strategy have not been discussed extensively due to the newness of the topic and lack of available information. Looking particularly at Estonian PKI development, it would also be feasible to view the process of implementation as a cross-industry cluster development.

Strategic cooperation with other CA's would also be an interesting issue to investigate. Another suggestion might be to explore and analyse the differences between a state-supported PKI and a commercial PKI, and their economic implications.

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On-line Retailing: A Canadian Perspective

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Introduction

"The uncontested alpha male of the no-holds-barred e-world is the United States, which is thought to garner 65% to 90% of on-line transactions worldwide" (Tillson, Tamsen, 1996),[1]

With the growth of E-business, came the growth of E-tailing, or On-Line Retailing. As in other facets of the E-business frenzy, retailers, both traditional Bricks and Mortar (B&M), and the newcomers, the strictly On-line retailers (the "Pure Plays") rushed in to capture the potential of the 13 million Canadians, or 53 percent of those aged 15 and over, that have access to the Internet at home or at work (a 300% increase since 1994). (Anonymous, 2000, Global On-line Retailing)[2]

As Canadians became more comfortable with shopping from the privacy of their home, on-line sales have grown. It is estimated that approximately one quarter of all Canadians with Internet access purchased goods or services on-line in 2000, with the expectation that Canadian on-line shopping will triple by 2004. (Anonymous, 2001, "2004")[3] But at the mid point of 2001, what are factors that will allow this growth to continue?

The purpose of this paper is to present and discuss some of the major highlights of the Canadian on-line retailing industry. From the success stories to those that have come and gone, and those that are still trying to find their way. A discussion of the leading on-line Canadian retailing practices will be made, together with those constraints that have hindered Canadians from shopping more on-line. From these findings, it is hoped that a retailer that is thinking about entering the on-line marketplace may benefit from those that have come before, and for those retailers that are currently offering their products online, how they can better ensure their success. In addition, there are a number of references made to the relationship between Canadian on-line retailing to that of Canada's closest and by far more dominant on-line retailer, the United States of America (US). These similarities and contrasts may be of value to other retailers that are located in similar geographic and cultural circumstances.

Internet Retailing Background

Why Be On-line?
One of the earliest challenges in the growth of on-line retailing was for both consumers and retailers to understand the benefits of having an on-line presence. The following summarizes some of these reasons.

Convenience and Selection
Unlike traditional B&M retailing, on-line shoppers can shop virtually seven days a week, twenty-four hours a day (although the ability to make the order does not necessarily transfer into an immediate processing and shipment of the order). On-line shoppers can not only research the possible sources of product, but also compare and contrast the variety of delivery and payment possibilities offered by the different retailers.

On-line shoppers also have greater access to a broader and deeper selection of items, especially for items such as books and recorded music. On-line retailers of these products can list virtually all available titles, versus B&M stores, which are limited by the physical constraints of their stores.

Larger Potential Markets
Once again, the Internet can theoretically allow retailers to reach any customer with Internet access, no longer is geography a constraint in terms of targeting customers (as noted later, this same access is tempered by the inability to actually deliver the product in a timely and cost effective manner). What an on-line presence can add, particularly for those retailers with a B&M network, is assist in increasing the number of shoppers who visit the web site and then visit the B&M stores.

Improved Customer Service
Unlike in a traditional store setting, an on-line retail site can provide an efficient and cost effective way of communicating with current and future customers. Through the use of email, or even a "live" on-line customer service function, E-tailers can service a wider and more geographically dispersed group of customers from centralized locations. This centralization of data collecting is very important in the development of enhanced market research activities, and also allows for additional information collection through the use of on-line surveys, and on-line focus groups.

With these additional research collection techniques, greater consumer customization programs can be created at a lower cost. By using purchasing patterns at the individual, versus the marketplace level, E-tailers can design personalized e-mailings and product recommendations, at a lower cost than traditional direct mail programs. A further benefit of this "relationship marketing of one", results in the ability of retailers to better streamline their product offerings based on customer buying patterns, and therefore reduced levels of inventory can be carried.

Internet Retailing in Canada – An Historical Review

As a nation of approximately 30 million people, spread across the second largest geographical country of the world, a country known for it's harsh winters, one would intuitively expect Canadians to embrace the possibility of shopping from the comfort of their own home. But because of the vast, dispersed nature of its shoppers, on-line retailers are faced with the difficulty in servicing Canadians with a level of service that shoppers expect, and at a cost they are willing to pay.

Approximately 80% of the Canadian population is within a few hours drive of the United States (US) border, but more importantly, these same people are spread out across the length of the country. For firms that want to service Canadian shoppers, getting access to them is not that difficult due to the high percentage of Internet access, but rather, the warehousing, distribution and logistical challenges of servicing these consumers in a high-quality manner has proved to be very challenging. These obstacles to superior performance are even more critical for those firms that offer B&M outlets as well. The ability to provide a consistent level of service to all their customers has proven very frustrating for a number of both Canadian and foreign based retailers.

Canadians have a very high access rate to the Internet, even in comparison with the US. Statistics show that as recently as 1999, 30% of Canadians had access to the Internet, versus less than 25% of Americans. But this higher percentage of users has not translated into a higher percentage of shoppers. Americans not only are three times more likely than a Canadian to make a purchase on-line, but they also purchase a wider variety of goods. (Conklin; Trudeau, 2000)[4]

In Canada there continues to be difficulty in converting on-line browsers into on-line shoppers. The recent conversion rate is below 2% (2% of people who visit a site, actually make a purchase). One of the major reasons is that even with good selection and pricing, Canadians are more conservative when compared to their American counterparts, and that conservatism makes Canadians more likely to want to examine goods first, before purchasing. (Fawzia Sheikh, 2000)[5] This helps to explain that although Americans are more likely to shop for goods on-line, Canadians are more likely to conduct non-goods activities like their financial transactions (payment of bills, filing of income tax returns, etc.). Canada has a higher cable modem penetration in comparison to the US, which allows for increased ability to conduct high volume, high speed, on-line activities, but because of the limited market size, Canada has less on-line choices when compared to America. (Anonymous, 2001, "2004")[6]

From another perspective, one would suspect that the Canadian marketplace, given its proximity to the US, would prove to be a less expensive entrance strategy for American retailers wanting to enter the Canadian market. Instead of having to secure limited, costly, prime retail real estate, American retailers could first begin targeting Canadian shoppers on-line.

The difficulties though, once again return to the challenge in getting the product to the customer. Unless the US retailer has a distribution presence in Canada, the need to have to deal with cross border issues such as different taxes (Canada,

unlike the US has both a retail provincial sales tax as well as a Federal Goods and Services tax – GST) customs, and increased travel time, in addition to the exchange rate considerations, has caused a number of US on-line retailers to either ignore, or limit their efforts to growing their Canadian on-line business. Other retailers though, have used their on-line presence to better understand the Canadian shopping habits, which has proven to be a valuable marketing tool before entering Canada with B&M stores.

The question of language also helps to distinguish those retailers that want to service the Canadian consumer but mostly only "English" Canadian shoppers. As Canada has two official languages, English and French, and although the Canadian population that speaks French as their primary language is approximately 25%, and is geographically centred in the province of Quebec, this factor adds some additional costs and constraints to not only serve these customers, but also to adhere to Canadian packaging and language laws.

Beyond the traditional retail drivers of product selection, quality and price, on-line retailers need to deal with an increased level of technical knowledge and systems. E-tailers need to be able to differentiate between available technology and management readiness to adopt such technology, when deciding on entering the Canadian marketplace. (Anonymous, 1998, "Hype-Reality Gap is Still Wide")[7]

"There may be some people who will always buy Canadian (goods from Canadian companies)," states Marven Krug, Amazon.com's general manager for Canada. "But the vast majority of Canadian shoppers will always go to the place that offers the best value proposition. There was initial resistance to leading American stores such as Wal-Mart, and Starbucks, when they came to Canada, but Canadians tend to be open to change with a good product when offered at a good price". (Mandel, Charles, 2001)[8]

But other American E-tailers face additional obstacles in trying to capture Canadian on-line shoppers. Unlike the previously mentioned Wal-Mart, and Starbucks which built B&M stores, and the infrastructure to support their growth, for others such as Amazon, the world's largest online bookseller, Canada has federal legislation that protects the Canadian book industry. Amazon is not allowed to advertise in Canada, unless they sell the Canadian, versus the US, editions of Canadian books, and to collect the previously mentioned GST. Although Starbucks now ships product to Canada, although all pricing is in US Dollars, Wal-Mart's on-line store, Walmart.com, not only doesn't service Canadian consumers but does not even offer a search function to located Wal-Mart B&M stores outside of the US (which Starbucks does). (October, 2001)[9]

What Sells Well On-line – Canadians are NOT the Same as Americans?

One of the biggest challenges to both on-line retailers and consumers alike is trying to understand the "facts" when it comes to what the E-tailing future will not only look like but also in terms of size and scope. In 1996, the leading Internet research firm Forrester Research predicted that online retailing would be $6.9 billion (US) worldwide by the year 2000. (Burger, Dale, 1996)[10]

One of the difficulties in quoting on-line retailing statistics is the dynamic and rapid change of the findings. Because of the ability to almost instantaneously collect data on actual purchase patterns, there are a myriad of sources quoting sales figures, customer demographics, etc. For instance, in a 1997 study of US Internet retail sales, the top five categories were; (1) computer hardware/software, books; (2) travel services; (3) entertainment; (4) gifts and flowers; and (5) clothing. (Forrester Research, 1997)[11] In comparison, a more recent study of Canadian on-line shopping shows that the following are the top categories; (1) Computer hardware/software, and books, (2) recorded music (3) books, and (4) banking services (see additional comments about Canadians and on-line banking below). (Anonymous, 2001, "Canadian Shoppers Online)[12]

There is little surprise that both in Canada and the US the number one category is computer related products and services given that to shop on-line implies a certain level of computer savvy and experience. It also seems to make intuitive sense on the differences in the other top categories as well. US consumers have more access to a greater selection and variety of shopping formats for books and music (as a result of the US population being 10 times larger than Canada's – see above), through

traditional B&M networks, as well as a more established history of catalogue shopping, as well as a greater number of travel carriers and suppliers. Furthermore, the same small Canadian population base limits retailer's ability to service time sensitive gift and flower consumers in a cost effective manner.

Unique Canadian E-tailing Traits

In addition to the traditional retailing success factors of increased sales and market share, and the other benefits of on-line retailing mentioned above, there is the possibility to vastly increase customer loyalty through the ability to significantly use extensive data mining techniques to better service the customer, as well as to increase the types and variety of loyalty. And although Canadians are one of the most driven "collector" societies, according to an IBM Canada and Retail Council of Canada study on the future of Canadian retailing, "Canadians have a psychopathic interest in accumulating travel points", retailers are finding it very difficult to use the on-line data within the negative environment that many Canadian retailing Chief Executive Officers (CEO) have towards the increased use (and cost) of additional technology programs. (Anonymous, 1998, "Hype-Reality Gap is Still Wide")[13]

This hesitancy for expansion and more concerns with controlling costs is evidenced in the comparison of the Canadian versus US business culture. As the foray into the E-tailing world has proved to be a high-risk, innovative and fast-moving environment, these terms do not describe the Canadian retail environment. Canadian retailing has a long history of following the retail trends of the US and established Canadian retailers have been criticized for the time it has taken them to establish an on-line shopping presence. (Conklin; Trudeau, 2000). Two of Canada's largest B&M retailers, Canadian Tire Corporation, and Hudson's Bay Corporation, have gone online in the last two years.[14] [15]

Why Canadian Retailers Can Succeed Against US Competition

There is one advantage the large Canadian on-line retailers have in comparison to their US counterparts, and that is in their ability to form strategic alliances with such dominant oligopolistic firms as Canada's largest banks (in terms of being able to offer secure purchasing and payment transactions) and Canada's national postal carrier - Canada Post Corporation - (which has become a central player in the delivery and logistics arm of on-line retailers supply chain). (Tillson, Tamsen, 1996)[16]

One of the ongoing fears, that surveys of on-line shoppers continues to demonstrate, is of on-line theft and "cybercrime". And although this perception is more fiction than fact (the risk of theft from purchasing goods on-line is similar to any other form of purchasing where a credit card number is given), the perception has become reality. For this reason, Canadians feel a greater sense of security when they shop on-line with retailers that they not only know from B&M shopping experiences, but even more so with those firms that indicate a partnership with one of Canada's major banks.

A Successful Canadian On-Line Service Sector: Banking

"Doing your banking from the comfort of your own home, especially when it's -40 degrees and snowing hard, is a compelling alternative to trudging out into the bleak weather to line up at the bank machine. It saves time, too." (Burger, Dale, 1996)[17]

As one of the leading countries in terms of Automated Banking Machine (ABM) use, and users of Debit card purchasing, it was not an unexpected finding that Canadians have flocked to do their banking on-line. It is estimated that over 85 per cent of all banking transactions are now done electronically. In addition, 5.8 million Canadians are telephone-banking customers, and as of 1999, 2.5 million use Internet banking. According to a study by the Canadian Banking Association, over 60 per cent of Canadian bank customers do the majority of their banking electronically. (Canadian Bankers Association, 2001)[18]

Other Types of Canadian On-Line Retailing

In addition to shopping on-line at a specific retailer's web site, Canadians also have other on-line shopping options. One of the alternatives to the individual site is the on-line "mall". One example is the "Canadian Internet Mall", founded in 1995, which offers services as well as products. It originally hosted eighteen vendors in areas such as advertising services, automotive, consulting, entertainment products, financial services, gifts and sporting goods, but currently offers sixty

vendors. What is surprising is that many of the suppliers are now foreign companies, and do not price their goods in Canadian dollars. (Burger, Dale, 1996)[19]

The Future of Canada's On-line Marketplace

As more and more Canadian retailers continue to define their on-line strategies, it is expected that as in traditional retailing, there will only be two or three main players in each category (books, music, hard goods, etc.), a few additional on-line retailers who continue to cater to specialty niches and the rest who do not survive. It remains to be seen what impact the US on-line retailers will have on Canadian retailers, but unless the US players can overcome the vast logistical, distribution and cross-border issues, it is expected that they will concentrate more on their domestic shoppers. It is also expected that the built-in advantages that current B&M retailers have in terms of established distribution and retail chains will continue to provide them with a competitive edge over the pure on-line competitors as they can service a wider variety of Canadian shoppers who like to only shop on-line, only at a B&M, or both.

In conclusion, it now appears that after the initial frenzy of retailers starting to sell on-line has begun to subside, and it has become clearer as to which Canadian E-tailers have prospered, and can continue to do so, even with the constant shadow cast by their larger US counterparts, that other on-line retailers in smaller countries both in terms of geography and population, can exist and grow alongside their larger, more populous neighbours. For E-tailers, unlike purely B&M retailers, there may be a world of "potential" customers, but the rules of traditional retailing continue to dominate. Retailer's that can deliver a good product, with good service, and at a good price will succeed regardless if they are a purely B&M, purely E-tail, or a combination of both. These examples from Canada are proof.

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Corporate Missions of Major Banks In Estonia

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Introduction

In September 2001 a conference resulting from the international research workshop, "The Future of Retail Banking and Customer Relations", was held in Stockholm with more than 80 researchers and bankers from Nordic countries and elsewhere participating. During two days of intensive discussions, the participants assessed the research, which had been conducted in Sweden, Norway, Finland and Estonia since 1999. The discussions lead us to the question - What is a bank altogether? What is a bank's mission in the modern e-oriented society?

Mr. Göran Collert, the President of the foundation that financed the project and the Chairman of the Supervisory Board of Swedbank, the majority shareholder of Hansapank, said in his plenary speech: "Over time we can only follow our customers. It is not we who tell them what to do with their lives. … It is not we, the bank, that create the business. It is Johanna *(the customer)* that comes knocking on our door wanting to buy a condo in Stockholm or to start up a company in Mora. …the local and the global will become more tightly connected through the thinking and behaviour of the Johannas; but also through processes such as the enlargement of the EU, the globalisation of infrastructures in transportation, distribution, production, media, finance and education. …again, our customers will decide the future of the economy with their reactions to opportunities and to threats. …we have to understand how conditions for people change. We have to live and work right in the middle of society and every day life. …we also have to provide infrastructure for cash circulation and financial transactions. We have to keep costs down to keep prices down but also to produce stable profits".

Collert added that over the past decade banks' missions had focused on technologies, products, organisation and derivatives. However, stability nowadays means an ability to maintain profitable customer relations in changing times. The authors of the book "Cracking the Value Code" refer to Samuel M. Walton, the founder of the legendary Wal-Mart. Samuel M. Walton said that it was the customer rather than the management who decided how many people had their wages paid. If the list of satisfied customers does not grow they might as well switch off the lights and go home. (Boulton, Liebert, Samek, 2001, p. 134)

Inspired by the above ideas, the authors of this article raised the following questions: **What is the mission of banks in Estonia and how does their mission conform to the changed requirements of society? Will the global trend of e-based banking lead to a convergence of the corporate missions of large banks? In Estonia, may we talk about two large banks, which share a common mission for the future?**

In our article, we define the term "bank's mission" and its components. Based on these definitions, we further analyse the corporate missions of Estonia's largest banks Hansapank and Eesti Ühispank in the years 1993-2000, and highlight the developments.

The research is based on the annual reports of the banks, referenced research literature and materials from the distance training course "The Organisation of Banks" conducted by the Estonian Banking Association (1996, author Aavo Kokk). In addition to these sources, we built our conclusions on our own expert assessments since the four authors together have had professional experience in five banks.

The role of the corporate mission in the strategic planning of the bank

Over the past thirty years, the meaning of banking has undergone a change. In addition to the traditional lending, depositing and settlement services, banks have extended their operations to

securities markets. Beginning from the 90's, the keywords have been **mergers** and **take-overs**, and **consolidation** across the financial services sector.

If banks are to be successful in these markets, they need a competitive strategy and business plan to underpin their actions. J. F. Sinkey discusses the future outlook of banking and notes that the bankers who know strategic planning are better placed to become "winners", to take the position of the leader and to survive altogether. "The message is a clear one - bankers who plan will have a better chance of being "winners", achieving "dominance", and, at the very least, surviving. In the rapidly changing environment of the Financial Service Industry of the 1990s, a banker without a strategic plan is like a chef without a recipe, a builder without plans, or a coach without a game plan. Except for blind luck, we wouldn't expect such individuals to survive in their professions, let alone be winners or achieve dominance." (Sinkey, 1992, pp. 334-335).
We cannot but agree. Moreover, Estonia's experience of the past decade is proof of this statement.

Undoubtedly, the transfer to a market economy had an impact on the strategic concepts of banks in Estonia in the years 1992-2000. However, since the progress of Estonian banks has been too rapid and powerful, it would be inappropriate to apply the traditional "banking in developing countries" approach in Estonia's case, and to study the development of bank missions as a model describing "the interaction between the nature of rudimentary financial markets in developing economies and the potency of macroeconomic policy instruments" (Murinde, 1996, p. 386).

Definition of the mission, components and stakeholders

Mission describes an organisation's principal function in society, based on the products and services that the organisation provides to its customers. The mission describes the goal of the organisation as an integral whole, describes the entire output of the system. It should be kept in mind that:

1) the mission is not always in a written format
2) the mission may or may not contain the mission of the whole organisation. (BPP, 1995, p. 28)

Thus in the definition of mission society and the organisation (bank) are united through the output of the latter, that is through the provision of services.

There are two approaches to the mission, two schools of thought:

1) The strategic school sees the mission as a means of strategy, an intellectual discipline, which defines commercial activities as rational and market oriented. The mission is the first step in strategic management and an answer to the key question - What is our business and what should it be?
2) The mission is as if "a cultural glue that enables an organisation to function as a collective entity ". In that case, the mission is a set of values *(Set of Values)* rather than a description of specific business objectives. (Campell, Devine, Young, 1990)

Our research was guided by the first definition of mission, to which we added the column "Values". In a transition economy, a bank's mission has to be defined to ensure success in commercial activities, which does not mean that we rule out a broader definition of mission. We agree that "A sense of mission, as an emotional or at least motivational bond, is where the employees' personal values and organisational values coincide. … Sometimes employees can have a sense of the mission even if there is chaos in management." (BPP, 1995, lk 29).

We use the BPP methodology to define the structure of mission. According to this methodology, the definition of mission should contain **four components.** "Multiple choice" has been provided (BPP, 1995, p. 28):

1. **Goal:** what is the raison d'être of the company, why have the management and employees been employed?
   - ❑ to create shareholder value, for major shareholders in particular
   - ❑ to satisfy the requirements of all stakeholders (incl. the employees, society as a whole)
   - ❑ to attain some higher goal ("give counsel to the society", etc.)
2. **Strategy:** what is the company's business logic?
   - ❑ business in which the company participates
   - ❑ comparative advantages that should bring the company success in competition.
3. **Behavioural policies and standards.** The strategy should be translated into daily activities. For instance, the terms "service standard",

"service operation" and service speed" need to be at the same level as for competitors', at least.
4. **Values:** relate to the organisational culture and express the expectations of company's employees.

The above shows that mission has a relatively broad meaning.

According to J.F. Sinkey, a bank's mission concerns two groups of **stakeholders.** External interests include such groups as regulators, stockholders, customers, and the community or service area. Internally, the expectations of directors, managers, and staff and line employees are important. (Sinkey, 1992, p. 335).
Interestingly, regulators are named separately and listed first. An emphasis on customer service providers is also worth mentioning.

H.Coult says that although a bank's shareholders are usually seen as the stakeholders, also other groups may be highlighted, such as loan stockholders, customers, employees, trade unions, suppliers, local community and the state (Coult, 1993, pp. 18-21).
We cannot but agree that if we now try to define a bank's mission, we end up with a conflict of interests. We shall show these contradictions with their probable underlying formulation of mission below in Table 1.

Thus "accommodating" one stakeholder, we may negatively affect the interests of others stakeholders. It is down to the management to solve these contradictions, whereas the aim should be compromise rather than favour one stakeholder. One of the means to achieve this is to inform all the stakeholders about the policy and strategy of the bank. In addition to stakeholders, the majority of mission statements also define the nature of commercial activities (products and markets), methods of competition and principles of commercial activities (BPP, 1995, p. 32).

So, in conclusion, mission:
1) **is an expression of common culture,** which determines the mindset and behaviour of people in the company, as well as the type of people the company hires;
2) **screens out the actions, ideas and employees,** who fail to conform with the values;
3) prevents the company from formulating **wrong strategies,** if the mission is not relevant. Which brings us back to the idea that mission should have a close relationship with a bank's vision for the future.

A corporate mission may be publicised in various documents – annual reports, advertising materials and, why not, displayed as a catch-line in the manager's office. We studied the mission statements published in annual reports of Estonian banks. Since the statements seem to smack of advertising, the term "mission" needs to be specified again, in order to avoid excessive generalisation and propaganda. First of all, mission should have strategic application.

The mission's importance in the planning process

We shall now analyse how important corporate mission is in the process of strategic planning in a bank.
According to Aavo Kokk (Kokk, 1996, pp. 36-37), a bank's strategic plan is underpinned by the **vision** drawn up by the management and designed to:

- introduce all the employees to the senior management's plan for the development of the bank
- indicate, which areas of activity and methods of action are more promoted

Table 1

Bank Mission Related to Stakeholders Expectations

Mission Formulation	Stakeholder Expectation				
	Shareholders	**Employees**	**Customers**	**Management**	**State**
To be a profit making bank	Higher dividends	Higher wages	Lower prices	Additional investments	Rise in income tax
To raise service standards		Shorter working time, better working conditions	Longer opening hours, shorter settlement period		
To satisfy customer requirements		Standard products	Product flexibility	Confidence	
To expand (lending) activities					Violation of environmental requirements

- enable all bank units, from quite early on, to narrow their choices and engage in the projects that are more promoted by the management.

The vision comprises three parts, the first of which – **bank's mission and role** - should substantiate why the bank's essence is what it is. If there are designs to be an international bank, the reasons need to be explained. Mr. Kokk notes that measurability is the issue. Old choices are not necessarily the best ones in a changing environment. If it hasn't been stated anywhere why the choice was made, one cannot assess whether the choice remains valid in a new situation.

This leads to the conclusion that a bank's mission comprises both an analytical part and a part where the given concept is being integrated with other components of planning. The bank defines its target group, market share, image and principles for action according to the mission. In assessing whether the mission is "right" or not, account should be taken of the (macro) factors that determine the mission at that point in time. According to D.F.Channon, these factors would be the following (Channon, 1993, pp. 12-13):

1) company's history: success record will influence decision trends in the future and failure record will initiate choice avoidance. The roots of the bank influence its position in certain geographical areas, with certain customer groups, etc.
2) organisational culture: this is unique for each organisation and determines routine procedures and what kind of people are involved. Organisational culture also defines formal and informal organisational norms.
3) power structure: this influences behaviour, which, in turn, has an impact on both formal and informal organisational structures. For instance, a bank that is oriented to retail banking tries to run its operations geographically, or by customer target group. Here reference can be also made to charismatic leaders in banking in Estonia.
4) principal decision makers: with changes to managing staff management principles also change.

   Clearly, a bank's mission stipulates the overall goal of the bank. A bank's subdivisions too should have their mission statements, which define the nature of their activity, points of departure and possible constraints (Channon, 1993, pp. 8-10). Such an approach seems reasonable, since mission preparing is very important for the exchange of information and motivation of employees. The majority of organisational behaviour studies based on BPP methodology (BPP, 1995, p. 29) also suggest as an axiom that employees are motivated by more than money alone.

Based on the aforesaid it may be stated that mission, values and vision are three related concepts. Concisely, there is the following difference between **mission and vision:**

1) mission reflects the present whereas vision reflects the future
2) a vision that is too fuzzy fails to motivate; mission is aimed at motivating
3) unless reviewed, a materialised vision may lose its motivating power.

Vision may be based on three potentially successful strategic approaches (Porter, 1980, p. 35): overall cost management, difference and focusing. If we transfer this approach to banking, we may identify representatives of all three strategies among the banks in Estonia in the past. Obviously, there cannot be several overall objectives. Each approach requires characteristic structural reorganisations, leading to better results in the market in relative or absolute terms.

The development of the missions of Hansapank and Eesti Ühispank in the years 1993-2000

Having defined the term "mission" and having shown how important mission is in a bank's strategy, we will now analyse the development of the corporate missions of two market leaders – Hansapank and Eesti Ühispank.

Hansapank

Hansapank was established in 1991 and the bank has become a leader in the bank deposits and loans markets in Estonia today. The purchase of Deutsche-Lettische Bank (1996), the merger with the retail banking leader Hoiupank (1998), Swedbank becoming the majority shareholder in Hansapank (1998), the opening of a subsidiary bank in Lithuania (1999) and the merging of Lietuvos Taupomasis Bankas's into the Group (2001) may be considered the highlights that shaped the mission of the bank.

Let us analyse the components of Hansapank's mission on the basis of annual reports between 1993-2000:

1) **Goal:** various bank services/ customers (1993) – international market/ customers (1994) – universal bank/ customers (1995) - Group/ new markets (1996) – international bank: Russia, Ukraine, Lithuania (1997) – market niches (1998) – international market: the Baltics (1999 and 2000).

While the provision of versatile bank services, including alternatives to cash settlement for all customers were a priority in 1993, the bank's growth to become the leading financial institution in the Baltics has played a major role since 1994. Interest in the Russian markets was lost as a result of the crises of 1997, and no sign can be found of an eastern direction in the corporate mission since. The Baltics remain the target.

2) **Business logic:** innovation - conservatism (1993) – foreign investor (1994), investor/ large customers (1995), protection of commercial activities/ personnel policy (1996), know-how/ risk-free services (1997) – lower loss (1998), all-Baltic integration (1999), local circumstances/ customer requirements (2000).

Thus the business logic has been "driven" from the investor to the customer. In criticism of this component it may be said that Hansapank could have defined its business preferences more precisely.

3) **Behavioural policies:** provision of services (1993) – customer's requests (1994) – cost planning (1995) – market segmentation/ personnel (1996) - personnel (1997), mobility with regard to markets (1998) - market/ profitability (1999) - profitability (2000).

It appears that according to policy (daily activities) sometimes services have been preferred, other times the customers, and still other times costs have been taken as a basis. Since 1999 profit - a purely "business" indicator - has been the goal of activity.

4) **Values:** lending opportunities and loan interest (1993), customer-centred approach (1994) – innovative mindset/ capabilities (1995), industrious behaviour / active spirit/ customer satisfaction (1996) - experience (1997) - conservatism/ global approach (1998) - quality/ innovation (1999).

It is difficult to pinpoint any continuity in this list, however, the crisis years of 1997 and 1998 stand out. The trend of 1999 supports quality improvements and innovation. Unfortunately, we failed to identify a characterising bank "value" in the report for 2000.

Eesti Ühispank

Eesti Ühispank was established in 1992 as a result of the merger of rural banks. Today, Eesti Ühispank ranks second in Estonia's banking market. The establishment of Ühisliising (1994), the merger with Põhja-Eesti Pank, the establishment of AS Venemaa Ühisliising and a bank in St. Petersburg (1997), the launch of a strategic collaboration with Latvijas Unibanka and Vilniaus Banka, the merger with Tallinn Bank, Skandinaviska Enskilda Banken's (SEB) becoming a strategic partner (1998), the growth of SEB's participation to 50.15% (1999) and to 96.41% (2000) may be consider as the highlights that shaped the mission of the bank.

Let us analyse the components of Eesti Ühispank's mission on the basis of annual reports between 1993-2000:

1) **Goal:** new bank services/ customers (1993) – universal bank/ profit (1994) – market share in Tallinn (1995) - international/ universal bank/ customer (1996) - customer (1997) – international market: leader in the Baltics and Northern Europe/ shareholders (1998) – Estonian market/ customers/ shareholders (1999) – leader in the Estonian market/ Internet/ customer (2000).

Throughout the years, Eesti Ühispank has aimed at being a customer-centred universal bank, which offers a wide product range. In its development Eesti Ühispank has focused on Tallinn (1995), international markets (1996-1998) and, in the recent years, on the Estonian market.

2) **Business logic:** to credit rural areas (1993) - modernity/ competitiveness (1994), competitiveness (1995), valuable for business partners/ promising for shareholders (1996), small and medium-sized enterprises (1997) – market position/ services (1998), withdrawal from Latvia and Lithuania (1999), domestic market (2000).

Eesti Ühispank has considered its competitiveness as strategically important. In the early years, the focus was on rural areas; later on Eesti Ühispank

focused on SMEs. In 1999 the bank ceased its activity in Latvia and Lithuania and concentrated on the Estonian market.

3) **Behavioural policies:** new services (1993) - quality (1994) – services by customer group (1995) - flexibility/ customer-centred approach (1996) – distribution channels (1997), shareholders/ customers/ co-operation partners (1998) – niche banking (1999) – customer-centred approach (2000).

In the early years, various service packages were offered and the bank began to develop its distribution channels. The network of offices was expanded in order to strengthen the focus on the customer. Enhanced collaboration with strategic investors and partners followed. Retail and investment banking and life insurance became the priority fields of activity. Customer service was transformed into counselling-based service.

4) **Values:** progressiveness/ knowledge of local circumstances (1993), openness/ credibility (1994) – international credibility (1995), first-class service/ remarkable rate of return (1996) – customer-centred approach (1997) – service quality/ innovative mindset (1998) - openness/ friendliness/ professionalism/ determinedness/ courage to take responsibility (1999) - motivation/ active behaviour/ communication (2000).

A progressive team, which knew the domestic market, was the value whereby Eesti Ühispank accomplished its mission in the early years. Eesti Ühispank emphasised openness and credibility, accompanied by low risks and stable income. In recent years special emphasis has been laid on a motivated and active personnel, and for this purpose the bank carries out training programmes, improves intra-organisational communication and strengthens organisational culture.

Current missions and future strategies of the major banks in Estonia

In the autumn of 2001, the two major banks have their missions formulated as follows:

Hansapank: "Our Mission Statement is to be the leading financial institution in the Baltics. Knowing local customers best we can create the greatest value for our shareholders" (www.hansa.ee).

Eesti Ühispank: "We help to earn, maintain and manage money". *To earn* means the obligation to offer the customer possibilities to earn money through our products, to offer the employees possibilities to earn money through fair compensation for their contribution to work, to offer the owners possibilities to earn money through the continuous increase of the value of the company. *To maintain* means the duty to ensure that the funds entrusted are preserved, to avoid any access by third persons, to ensure that the funds are well and safely maintained. "It is our duty to ensure confidentiality and to be discrete." To manage means the duty to make the circulation of funds efficient. It is the duty to assist our customer in managing his funds. It is the duty to make management of funds as easy as possible for the customer. (www.eyp.ee)

Having analysed these formulations, we may compile the following table:

Unlike Ühispank, the Hansabank Group is operating in the form of separate companies in several markets (in Estonia, Latvia, Lithuania), to which reference has been made in the mission. Ruth Alas believes that, in order to formulate the corporate mission of the Group, it is not enough to add up the missions of its various business entities. The latter should be attributed additional value in order to explain why their belonging to the single Group gives a better outcome than operating outside the Group (Alas, 1997, p. 26). A conclusion

Tabel 2.
Key Words from the Corporate Missions of the Large Banks in Estonia, October 2001

	Components of Bank Mission			
	Goal	**Business Logic**	**Behavioural policy and standards**	**Values**
Hansapank	The leading financial institution in the Baltics	The best knowledge of local circumstances and customer requirements	The best rate of return for the shareholders	Vitality, innovation, quality
Eesti Ühispank	Customers	Assistance in earning, maintaining and managing money	Obligation to provide earning opportunities, preserving and secure depositing of funds, efficient and handy money management	Friendliness, professionalism, purposefulness, boldness, openness

Source: www.hansa.ee, www.eyp.ee

may be drawn that Hansapank has seen the best knowledge of local circumstances and customer requirements as an added value, to be achieved through the merging of the information bases of all the companies. As regards the mission of Hansapank, it should be noted that there is one distinct stakeholder in the bank's corporate mission, which are the shareholders.

As early as in 1994 Hansapank stated that its mission is to become the leading financial institution in the Baltics. The coming of a new strategic investor Swedbank has not changed this mission. Swedbank's strategy is to be a natural banking alternative for private individuals, the agricultural sector, small and medium-sized enterprises, municipalities and international organisations, as well as for many large companies. (www.foreningssparbanken.se). Although Hansapank has prioritised large customers in the earlier years, in the strategic objectives for 2001 the focus has been set on SMEs and private customers in the higher income bracket, which suggests a harmonisation of objectives with Swedbank.

In the developments of Ühispank a "shift" may be observed. The mission of 1994 related to general banking activities whereas now services include leasing and life insurance. "The products and services of the bank include traditional products and services aimed at private individuals as well as companies (e.g. deposits, loans) as well as specific investment banking services designed for meeting the capital and development needs of companies. …In the world of globalising financial services the development of these products and services is a strategic priority of the group. (www.eyp.ee). While the earlier mission was more product-oriented, the bank has been driven primarily by the requirements of the customer since 1999.

The aims of the owner (superior organisation) are one of the points of departure in mission development. The formulation of Ühispank's mission statement of 1999 was in all likelihood influenced by the harmonisation with the mission of their new partner and owner, Skandinaviska Enskilda Banken. SEB's business idea is to enhance customer and shareholder value by means of competence and a long-term relationship. The vision of the Group is to be the leading and customer-oriented provider of e-based financial services in Europe. Being guided by this vision, the long-term objectives of Ühispank foresee becoming the most valued Internet-centred provider of financial services in Estonia, by outperforming other Estonian banks in customer and employee satisfaction, efficiency and market value.

Summary

Our study indicated that we cannot talk about a single major bank mission in Estonia. The definitions of stakeholders as well as the business logic of the banks differ. Also their values come from "different levels". However, the third component of the mission, behavioural policy, is rather similar. Both major banks in Estonia focus their activities on the private customer, SMEs and value e-banking.

The result was interesting, since the development of both banks has been affected by similar conditions, which are often referred to as the "transfer to a market economy". The difference may be caused, in part, by the difference in their "starting position". Apparently, it is the influence of foreign investors and their mission development which should be deemed to be the key factor in the development of corporate missions for banks in Estonia in the future.

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The Availability and Reliability of Intercultural Communication

Information on the NetContent analysis of dress code issues for intercultural business negotiations on the Net

Elena Pruvli, *Estonian Business school*

It is not good for the Christian *(read: European-E.P.)* health
To hustle the Asian brown
For the Christian riles
And the Asian smiles
And he weareth the Christian down.

At the end of the fight
On a tombstone white
With the name of the late deceased,
And the epitaph drear:
A fool lies here
Who tried to hurry the East.
Rudyard Kipling

The famous British traveller, Rudyard Kipling, was definitely one of the first Europeans to widely publish his research into intercultural business communications. His findings remain very useful nowadays.

However a brief analysis of student presentation papers shows that the importance of printed works about intercultural communication matters is waning dramatically. From the 50 or so European students who have submitted a final essay over the last two years for the course, Intercultural Business Communications, on the general topic, *National Negotiator Profile,* only seven drew upon printed materials. Or at least claimed to have used the printed works from research by G. Hofstede, Kluckhohn-Strodtbeck and Fons Frompenaars.

However, all the practical information on negotiating behaviour was obtained from the Internet. It included the following topics:

1. Verbal communication: (direct/ indirect).
2. Formality, Status, Hierarchies.
3. Time, para-verbal/non-verbal behaviour (expressive/reserved).
4. Business protocol and etiquette: making appointments, dress code, meeting, greeting, forms of address; topics of conversation (taboos), social gifts and business gifts; wining and dining; toasting.
5. Presentations, "tips", bargaining style, decision-making.

Some of the information sampled randomly, about the culture of the students' countries of origin obviously turned out to be inaccurate and even completely wrong. It inspired the author to analyse the content of some intercultural communication sites and to evaluate the information available on the Net.

Some of the research questions were formulated as follows:

- The availability of information about Eastern Europe on the Net. To find out whether the information is objective or biased (use the - "they still have a post-Soviet mentality"- to explain any studied cultural value); who the site is designed for; which geographical and/or cultural areas are most thoroughly researched.

- The image of Finnish, Swedish, Estonian, Baltic, German, ….. business people and the main tips for negotiation with representatives of these business cultures on the Net.

- An overview of scientific research available on the Net (who conducted them; what percentage can actually be considered scientific research; areas or business cultures more thoroughly researched; undiscovered areas in research).

- Use of known theories on the Net (the further developments of G. Hofstede, E.Hall etc.; for which particular cultures or areas; which dimensions are most popular among authors of 'Net publications'.)

- How useful and informative the data on the Net is about making initial intercultural business contact.

The author has researched information about dress codes and issues of small talk on the Net. Results about dress code on the Net are presented in the current article.

Culture as the "software of the mind". Of course the task of investigating all the issues mentioned above is quite broad and will take time. The author is planning to organise the students into groups of 3-4 coders from the same culture and define the population of the research for each question using the following main search engines. They are: Excite; GoTo.com; Infoseek; LookSmart; Netscape Search; Snap!; Web Directory; AltaVista; Yahoo; MNS Search; Lycos.

In studying the practical value of the information on the Net we considered culture to be the man-made part of the human environment (Herkovits 1955). This definition subsumes not only the tangible elements of the human environment, but the intangible features - beliefs, science, myths, religions, laws, and other tenets held by a particular group of people. Culture has been likened to a gigantic extraordinarily complex subtle computer whose programs guide the actions and responses of human beings in every walk of life. We have also concentrated on the business activities of individuals.

Cultural programs do not work when crucial steps are omitted, which happens when people unconsciously apply their own rules to another system (Hall 1976, Hall & Hall 1989). In dealing with another person, the whole secret of success is finding the right approach. " First you must rid yourself of all prejudice; and, so to speak, let the ideas and values of the other person act upon you without restraint. Then you can establish contact with the other, understand him, and gain power over him." (Wu, K 1982)

This Confucian tactic sounds very popular still, but the ability to "let the ideas and values of the other person act upon you" nowadays depends very much on the Net. It opens many doors for the interested individual in having significantly increased the points of access to intercultural information, it proposes greater interactivity, speed and ease of use.

In truth however, there are limitations to this channel for intercultural knowledge. The Internet contains a lot of information that is neither regulated nor screened according to quality and there is difficulty in assuring a representative sample of the information. Therefore the reliability of the source can be examined best of all by the people with the emic (from inside of the culture) knowledge of the cultural environment being described.

According to Hofstede (1991): "Every person carries within him or herself patterns of thinking, feeling and potential acting which were learned throughout their lifetime." Using the analogy of the way in which computers are programmed, Hofstede calls such patterns mental programs, or the "software of the mind." Mental programs vary as much as the social environments in which they were acquired. Culture is always a collective phenomenon, because it is at least partly shared by people who live or lived within the same social environment where it is learned. It is the collective programming of the mind which distinguishes the members of one group or category from people of another."

Culture necessarily differs throughout the world and greatly impacts businesses, customers and employees alike, when cultural collisions involving attitudes, beliefs and behaviours occur.

Advice concerning "dress codes" on the Net What is dress code in business negotiations?

Among humankind there are necessarily different levels; it is impossible to bring about universal equality. (Confucian book of change The 1 Ching, Wu, K 1982) This is the typical postulate of a strictly formal and hierarchical culture. However, concerning issues of dress code for business negotiations the main difference between formal/ hierarchical and informal/egalitarian cultures definitely does not simply include a list of popular garments. For the formal/hierarchical culture dress code is clearly ***a message*** about status and rank in society and/or the company. It is also a very important note for the receivers of this message about the respect that the person shows them and about the degree of *their* importance in his/her eyes.

The exact question posed by this study is - how helpful is current information about dress codes found on the Net for representatives of informal/ egalitarian cultures?

- The scope of the research was defined according to the boundaries provided by the search engines MNS Search, AltaVista and Yahoo. The key words for defining the research were "intercultural business negotiations". So, appropriate samples selected from the results included any web site claiming to provide practical advice on "intercultural business negotiations" and containing information on proper dress code.

- The unit for analysis was defined as a particular abstract of information regarding dress codes for intercultural business negotiations.

- The following categories were constructed for coding the information: absence or presence of a picture; information given for male, female or both; colours mentioned (how many times, just "dark", "modest" or any details like "navy blue", "cherry red"); any advice regarding jewellery or accessories; prestigious companies mentioned; advisable body language in connection with any particular garment (e.g. to avoid showing the sole of the shoe in Arabic cultures); the most frequently raised definitions, any explanations of terms (e.g. "classical style", "hanky-panky", "colonial khaki"); any taboos explained (morning dress, inappropriate outfit); advice for extreme weather conditions (too cold, hot, rainy season etc); when the site was designed; who the designer of the recommendations was (the country of origin, affiliation, consulting company/private person, scientific award, and unknown).

- For simplicity the quantification system was reduced to the question of whether the dress code was brought up in a separate section using a title or just mentioned in the general information.

Findings and analysis

All together 80 Web sites were analysed. In 80% of cases the importance of dress code as a subject was stressed by placing the relevant information into a separate section with its own title. In 43 cases it was included with general advice concerning appropriate body language. In 28 cases a picture (cartoon) supplemented the text to attract more of the reader's attention. On 62 sites, most of the information was clearly designed to satisfy more male needs rather than female. Male dress code subjects contained more characters, provided more detail and more garments were mentioned. Most body language advice in connection with dress code was related to male rather than female behaviour. The single most common piece of advice was "keeping hands in pockets is considered to be rude", in some cases it was accompanied by "not to chew chewing gum during a business meeting".

The colours most mentioned for both male and female were - "dark" 34 times, brown 29, "appropriate" 24, "modest" 18, and dark-blue 14. Advice about accessories was mentioned in 31 instances (to pay attention to expensive accessories). Jewellery was mentioned 6 times. Among fashion companies only Versace, Armani, Donna Karan and Rolex were mentioned and in the context that, in Asia, businesspeople treasure the "real thing". The most frequently used description for businessmen was "neat and appropriate", for businesswomen "business-like classical style" and "casual smart". White was said to be a colour of mourning in Southern Europe (3 times). Instances where garments were mentioned as inappropriate for various European cultures (English, Scottish, French, Russian, Polish, Dutch) included, trainers – 7 times, jeans – 6 times, polo shirts – twice. Bare arms for female visitors was mentioned as a bad habit in Arabic cultures (7 times).

General advice given for hot climates was to just wear natural silk or cotton (6 times for Asian climates). The usefulness of a "good winter coat" for doing business in Russia was declared a total of 4 times. It was interesting that in all these cases the advice was coming directly from a Russian contributor to a site (e.g. from Vladimir Fetsenko, Ph.D., Executiveplanet - http://www.executiveplanet.com/community/default.asp?section=Russia He is the marketing director for the Business and Marketing Analysis Centre in Moscow.)

Unfortunately most of the coded information turned out to be without any clearly documented authorship. Authors were at least defined for most

of the national profiles on 12 coded sites. In 23 cases only a company was mentioned, but it was not clear whether as the site designer only or also as the author of the text.
On 8 occasions the award Ph.D. was claimed in connection with the advisor.

Limitations of the current analysis

Before making any statements about the quality of the dress code information on the Net the author would like to point out some of the limitations of the current research.
The extent of this research is considerably small considering how much relevant material is actually available on the Net on the topic of dress codes in intercultural business communications. The findings of the author are definitely limited to the framework of the categories and definitions used in the present analysis.

For example, information about the advisors' qualifications could be described as "professor" instead of Ph.D. Sure, other categorisation systems could be used leading to different conclusions. One of the important issues however is language. The author was only able to examine information presented in English, which definitely influenced the findings grammatically. So, Americans designed 53 of the sites explored (with European contributors to some particular items, especially about Eastern Europe) and Australians designed 11. The sites which did not clearly define the designer's country of origin were categorised by the author of the current research according to the rules of spelling.

Final conclusions

Despite the limitations analysed above the current research can give some idea about the availability and reliability of dress code information on the Net provided in the **English language.** Most of the relevant information, which originated from USA or Australia, did not contain any proof of the professional competency of the designers . They did not contain clear forms of address (indicating the expected audience). However, the advice not to put one's hands in one's pockets or not to chew chewing gum sounds strange for most representatives of European business cultures. It was considered as useless, inappropriate and even offensive by some of the European students. They had the same reaction to the taboo of wearing trainers and jeans for negotiations.

Most of the coded information was free, however some proposed a subscription for newsletters and very few (3 sites, like http://www.businessculture.com/-) requested a fee for accessing national negotiator profiles.

About a half of the information was designed more than 4 years ago (and had not been updated). However we could assume that dress codes are not changing so quickly, so in this particular research the date might be not very significant in areas, for example, like subjects for small talk or cultural sensitivities (subjects to avoid).

The categories used in the research showed that most information analysed was very general, broad and with some exceptions did not contain very specific details on particular cultures apart from matters of climate or religion. (As cotton for Asia, good coats for Russia and long sleeves for Arab countries). When considering the cultural context of the potential reader, the definition "business-like classical style" for the businesswoman might mean a dark trouser suit with flat shoes for the Swedish, Danish or Finnish person; but will mean a little black dress or a pencil skirt tailor suit with accessories and jewellery for the French.

For the Argentinean a brighter skirt suit, but definitely with high heels and fancy 'hair-do' (as flat shoes/trousers do not belong to the formal classical outfit in this country and are used for walking). These kinds of different interpretations could be provided for every general definition found in the current research on the Net.

It shows that a great deal of the information was placed on the Net without deep analysis. It contains very broad and general recommendations, which could be decoded in varying ways by representatives from different cultures. Some taboos and "dont's" were considered to be useless and even offensive even to people from non-formal European cultures. So, regardless of the issues of dress code the information on the Net must at least be taken with consideration for the cultural context of the receiver.

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The Ontological Foundations of Ethics[1]

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Definition of the topic

This article will examine the ontological and existential grounds on which ethics is based in terms of the nature of both moral philosophy and the norms that we follow.
Every historical period is in some sense introverted and appears to itself to possess absolute and eternal truth. Thus every historical period is characterised by a system of normative ethics unique to that period, which is also referred to as political correctness, **and on the other hand** ethics within the foundations of the philosophy of history.

Based on the assigned task, our address examines the topic philosophically in terms of the fundamental principles arising from its existence. We will thus examine this topic in its fundamental principles, from the viewpoint of our position in contemporary historical reality, in the historical-conceptual context of culture.

Oswald Spengler, a specialist in the philosophy of history, wrote at the beginning of the 20th century (in "Untergang des Abendlandes") ["The Decline of the West"] that the contemporary European-American world has all but forgotten the highest ideal of religious ethics – morals.
Where morals are strong and genuine, they denote behaviour that consists of rituals and exercises, being a continual *exercitium spirituale,* i.e. behaviour in the presence of the absolute.
"...morals are conscious and planned, a causality of personal behaviour found in real life and situations, which maintains its importance for all time and for all people and is therefore independent of time and is for that very reason, genuine.
Thus ethics is a part of the global system ... - it cannot develop historically or be supplemented, since genuine morals are absolute, eternally perfect and unchangeable."

In this formulation Spengler sums up the system of relationships perceived in our cultural context and implemented in historical practice, which has guaranteed the preservation of biological life on the social level and on which the existence of peoples, states and entire cultures has been founded. Another 20th-century cultural historian, Johan Huizinga, also dramatically highlights the moral decay of our culture in the book "Homo ludens", and compares the present crisis in intellectual ability to the result of serious damage to the central nervous system, which leads to the wasting away of healthy instincts.

Culture and existence that lose their metaphysical orientation cease to exist. The connection between survival and ethics has been clear since the times of European civilisation. As in all other areas of life, ethics cannot be the result of human agreements, but are a part of the guiding system of the universe. Thus ethics are also based on cosmology and meaning and purpose in life, in both a natural and a supernatural sense ***Cosmos, chaos, fate***

For the Greeks, survival and the protection of life meant above all harmony, unity with the cosmic world order, or more precisely its implementation in worldly life. This was associated with three concepts that were experienced and lived out as defining realities throughout a person's lifetime: chaos, cosmos and fate.
The gods and fate (Greek *moira*) are the last and highest foundations of existence, whereas fate is the principle of power and government.

The cosmos is a reality in which fate or order rule indivisibly. Fate acts and governs in the cosmos, although the cosmos as an order that supports the universe is bordered by chaos. Chaos as the origin of all things (Greek *arhe*) knows no higher power above itself. For primitive man chaos and the cosmos constituted the whole of existence, although primitive man existed in this as "we", the body of the clan, community, tribe. Tribe and community are in fact a social cosmos, and unity therewith is

[1] Address at Conference on Officer Ethics at Baltic Military Academies

defeat over chaos and fate. This is characteristic of all traditional, folkloric consciousness.

In actual fact this is also implemented through ritual, in which these three – cosmos, chaos and fate – organise their own relationships. Ritual is a connection with the concept of taboo, holiness – and this is cosmic, since cosmic existence is re-created in ritual.
"Ritual is founded in the continuity of the movement of the skies, the order of phenomena and the behaviour of the people on earth. When heavenly and earthly phenomena take place regularly, the people take them as an example, reflecting the clarity of heavenly phenomena and harmonising them with the nature of worldly phenomena." (4th century B.C., from the book Tso Czyan).

The emulation of the cosmic order represents the victory of the "we" over chaos and that which is individual, through that "we".
Collective consciousness prevails. The tribe and clan are a microcosm, and harmony therewith is victory over chaos and fate.

Hellenism is based on ethical behaviour, and thus on knowledge of the cosmic order, harmony therewith, and also on the resulting system of ethical relationships that is so important for social life. For the ancient Greeks, the cosmic order was reflected in their tribe – the *polis.* Harmony was achieved over chaos through ethical behaviour derived from knowledge of the cosmic order.

Universal world order as the foundation of ethics

At the end of antiquity, Saint Augustine once again formulated cosmic experience. What Hellenism saw as menacing chaos was given a different meaning in the new Christian worldview. In stating this new conception, Saint Augustine was formulating a theory of a universal world order. In his approach there is no chaos in the universe, but all is subject to order – *ordo.* The universe exists on the basis of order or a system of laws, which is absolutely valid in all places and in all things.

The measure of this order *(ordinis modus)* is the eternal truth of the Son of God (*De vera religione* 43.81). Thus he is at the same time offering an interpretation of the world order and adding to this conception of the world the idea of man valid in Christian culture, the archetype of which is the historical figure Jesus Christ, in which the deification of man, his ascension or attainment of ethical plenitude takes place through the sacrifice of all that is human. Thus the implementation of Hellenic heroism continues in Christian culture, and the highest moral act takes place in the figure of the hero, in which existence and the meaning of life achieve their highest aim. The idea of man in Christian culture is based on the metaphysical, the supernatural, and on the meaning and purpose of life, the achievement of which is an ethical-moral labour or asceticism. The motivation for this behaviour is never affectation, emotion or passion, but the perception of the **realisations** of conscious thought, and **implementation** in conditions of free will. Thus the entire universe of existence is at every moment a continuous chain of ethical decisions.

According to Augustine, the organisation of the universe is governed by an all-encompassing system of laws: *"The investigation and perception of the order of affairs that governs the world are performed by many, but achieved by few, and can rarely be implemented"* (*De Ordo* II, 1, 1). Augustine wrote these words during the period of the decay of the Roman Empire and recognises the condition of man, expressing his scepticism of man's ability to comprehend, much less implement the universal world order. Here one definitely finds interesting parallels with other historical periods: *"Order is the instrument through which God presides over all things"* (*De Ordo* II, 1, 2). This is indeed a system of laws.

Order in social life is co-operation between heavenly and human intelligence, and harmony or disharmony with the system of these relationships is a moral question. Here Augustine repeats the Hellenistic understanding of the supremacy of intelligence and comprehension over other forces. This is also connected with the understanding of ethics – that which corresponds to the universal order is also beautiful. The ethical and the aesthetic are combined.

More precisely the aesthetic represents the ethical, and thus the cathedral as the unity of universal harmony and the ethical-moral realm is a model of the European Christian cultural universe. Evil (*malum*) is the absence of order (disorder), although this too is subordinated (*ordinartur*) to the beauty of the whole (*pulchritudinem universitatis*). Since the world is constructed on the basis of the laws

of order, evil as the disorderly part therein is a functional expression that is included in the universal order, which must serve the interests of the whole of the universe, and also that of human society.

In social life good and evil are merged in all their forms. As a result, the laws of ethics are, like all other things in the universe, one element of the laws of the universal world order. This is a fundamental question from which all else arises. Are ethical laws and human morals a human-social agreement or are the laws of ethics objective and similar to other natural laws that man has discovered? Since the universe is unitary, there can be nothing therein, not even a local exception, that is not subordinate to or based on the laws of the universal world order. Thus the general laws of the universe are also valid in human society. To the extent that ethics results from the fact of existence (*existentia*), the laws of the universe, which must guarantee the survival of life, are the foundations of ethics.

The local laws of this higher law are natural science and physics, which man does not invent, but discovers. In different cultures that are isolated from one another, people have comprehended and discovered the laws that are the foundations of human behaviour and human morals. In the same way that man did not create life, man cannot comprehend the higher purpose of life, and thus the laws of ethics and human morals cannot be the object of human decision-making and self-definition. Man-made legislation, which concretises eternal and universal ethical law in different historical situations, creates a lasting community in history only to the extent that it complies and is in harmony with universal laws.

Order also means peace. For that reason the words *pax* and *ordo* had the same meaning. In Russian, for instance, the word *mir* means both order and peace. Order is the placement of equal and unequal things in their proper places.

Practical conclusions

A process called globalisation is taking place in the world, which is on the one hand spontaneous and on the other hand may be guided, and possesses objectives. Peace and understanding in the living communication between different cultures is theoretically justified and takes place with the consideration that all historical-traditional cultures are based on and guided by the comprehension of the world order and the local-national outlet of the perceived world order. Thus all traditional cultures have the same foundations and thus what are referred to as ethics and human morals cannot differ between different cultures.
In the Decalogue this ethical rule of the universal world order is provided in two-dimensional form. On that basis communication between cultures guarantees the peace and order thereof. In communication between cultures, Manicheism leads to conflict, since it divides the world into a black-and-white "us" and "them" system, or in other words the world is divided into good and evil, in which good is attributed to oneself, and evil to those who do not wish to live as we do. This Manichean mindset can lead to a clash of civilisations as described by Samuel B. Huntington in "The Clash of Civilisations".

Man cannot change the order of the universe, man cannot change the course of the planets, man cannot change the laws of nature or physics, man cannot change the laws of psychology and ethics, since these are objective. Man can, however, violate those laws within the boundaries that define man himself and in his relationship with the universal law expressed in local form. Evil (*malum*), all that which threatens existence, may in certain times be permitted in human society, yet this does not free man of responsibility.

The objective consequences must be accepted, since these are unavoidable. Since the universal world order, which is objective, contains within it the elements of disorder and evil, man's attempt and desire to permit that evil locally means the intentional increasing of disorder and entropy. Since order means peace, this also threatens peace. Thus a new world order can only be a denial of the old. Man's power and abilities are not sufficient to alter the laws of the universe, although man may choose not to observe these laws on a local or global level. Since man's power and abilities are not sufficient to alter the laws of the universe, a new world order would in essence mean the local construction of an evil state on earth, in the part of the universe in which we find ourselves.

In conclusion, this has been a historical-philosophical or timeless view of the present moment in history. This is a question of our overall existence.

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