



1918

TALLINNA TEHNIKAÜLIKOOL

TALLINN UNIVERSITY OF TECHNOLOGY

# The Basis for Development for E-Learning at Universities in Estonia

**Avo Org,**  
Department of Economics,  
Tallinn University of Technology,  
Estonia

**[Avo@tv.ttu.ee](mailto:Avo@tv.ttu.ee)**



***HEAD UUT AASTAT!  
HAPPY NEW YEAR!***

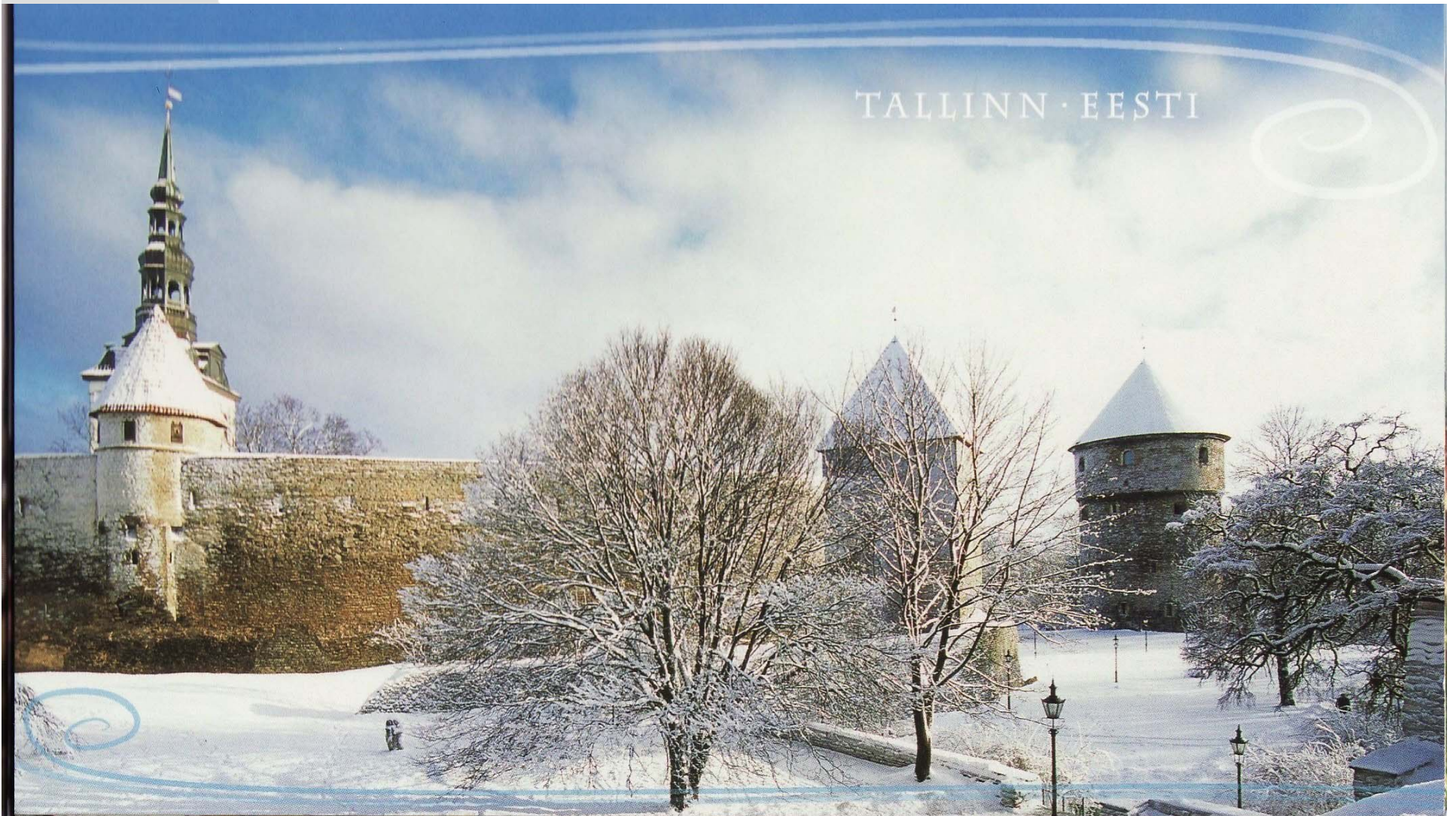
[Leho.Kilova@mail.ee](mailto:Leho.Kilova@mail.ee)

3.01.2008

E-Leader, CASA, Bangkok 2008

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***HEAD UUT AASTAT!***  
***HAPPY NEW YEAR!***



*Estonia is one country somewhere, the location of which might be difficult to define for some persons, but Estonia is the country, which could be called the homeland of the three info technological super achievements.*

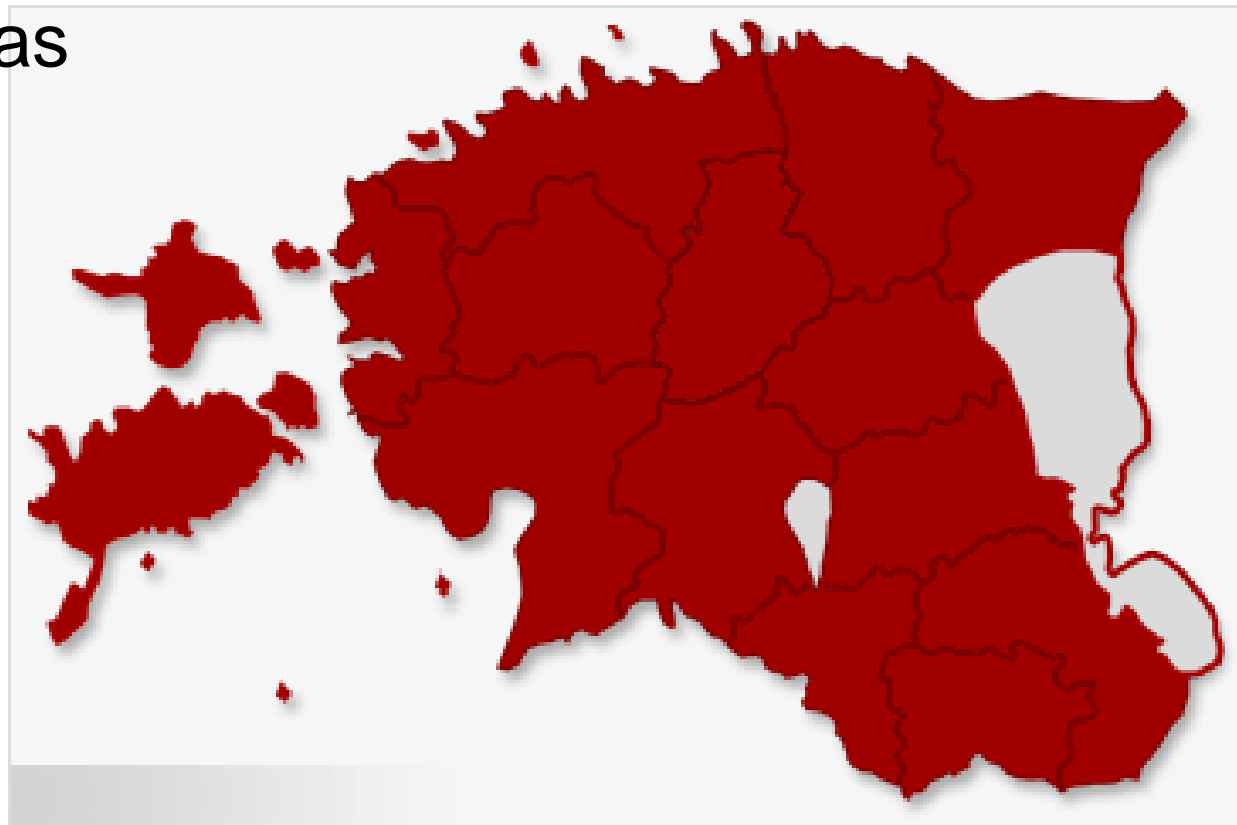
Eesti asukoht Euroopas  
Location of Estonia in Europe





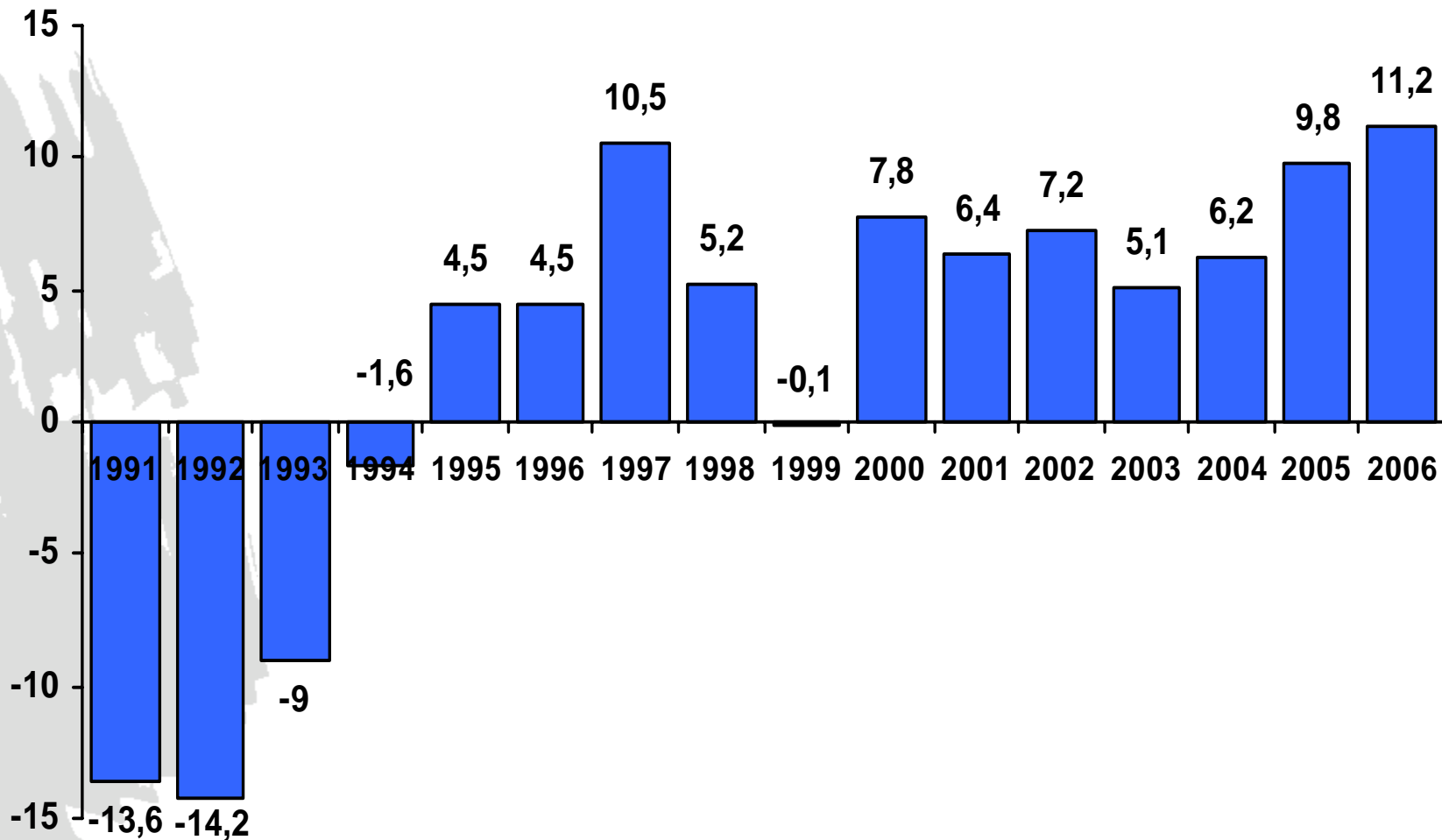
# Estonia

- <http://www.wifi.ee>
- 1151 WiFi areas
- 45,000 km<sup>2</sup>



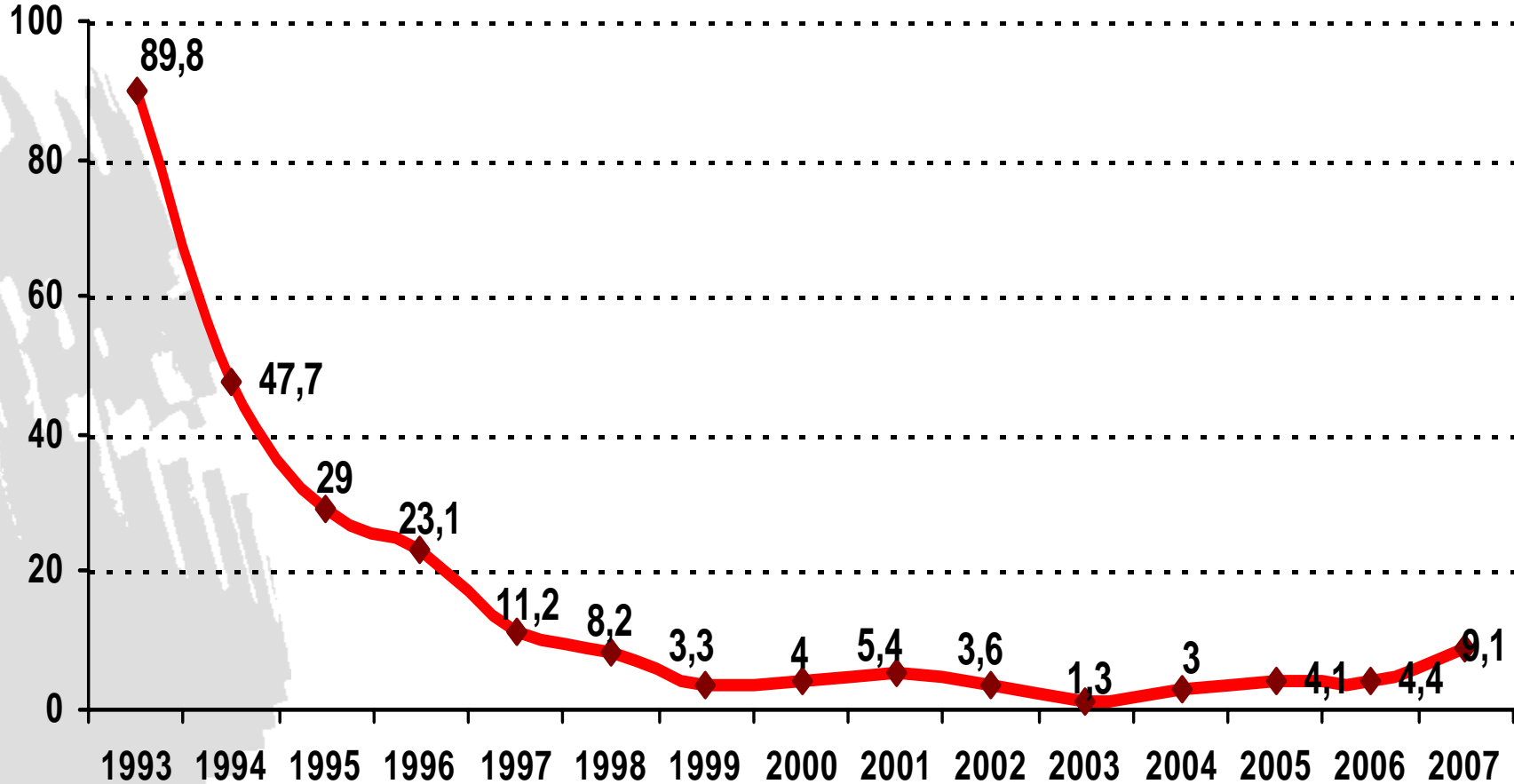
# General Data Estonia

Capital city	<b>Tallinn</b>
Official language	Estonian
National currency	<b>Estonian kroon</b> , was introduced on 20 June 1992 , 1 EUR = 15.6466 EEK
Population	1 January 2007 <b>was 1,342,000</b>
Population density	30 inhabitants per km <sup>2</sup>
Total area	45 227 km <sup>2</sup>
Administrative division	15 counties, 227 adm. units with local gov.-ts, 33 cities, 194 rural municipalities
Ethnic nationality	estonians 68,6%, russians 25,6%



## Growth in Gross Domestic Product

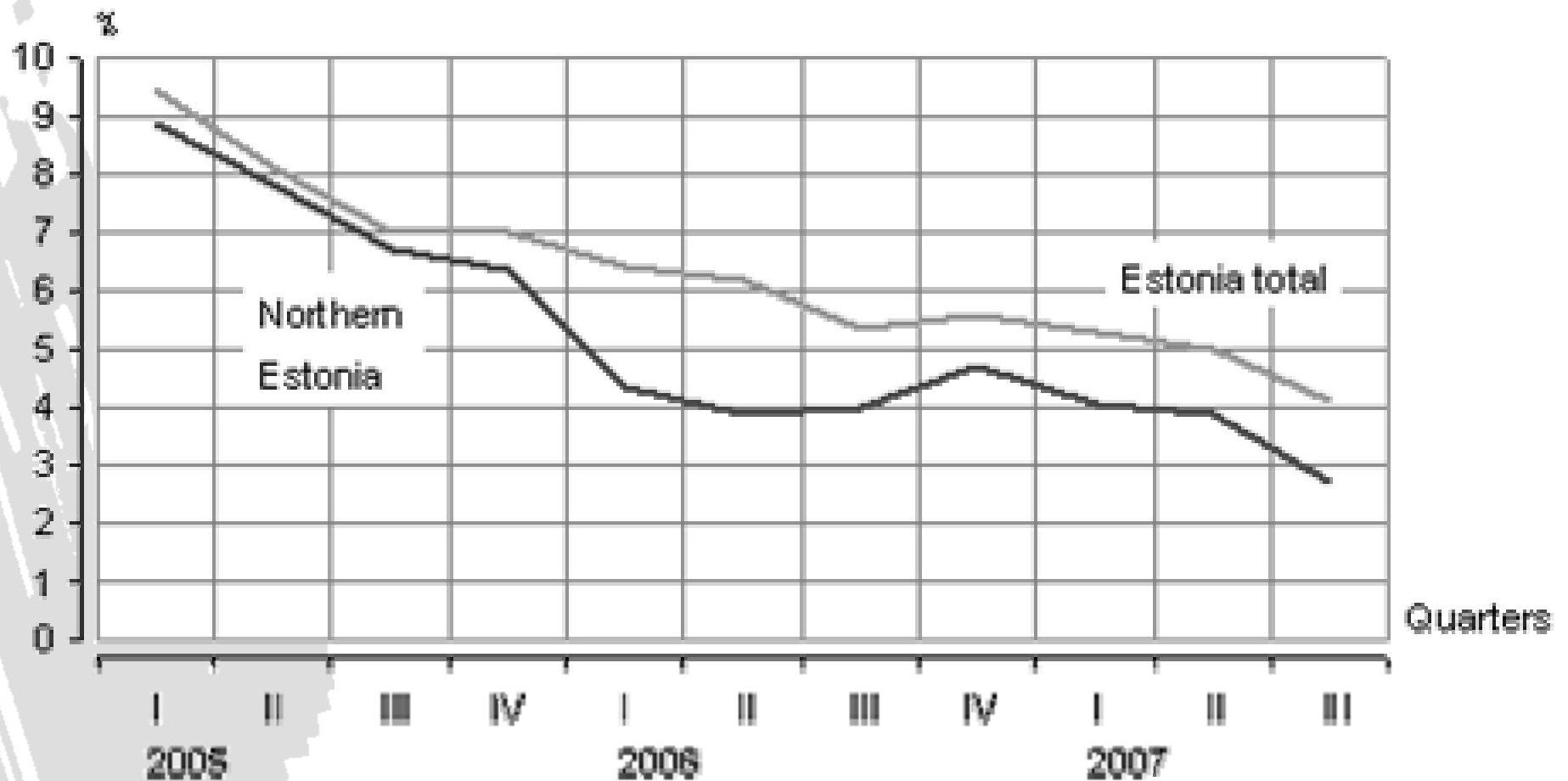
Statistics Estonia



## Change of the consumer price index (%)

Statistics Estonia





## Unemployment rate, 1st quarter 2005 — 3rd quarter 2007

Statistics Estonia, <http://www.stat.ee/189919>

## Economic forecast by key indicators, Bank of Estonia

<http://www.eestipank.info/pub/en/ylidine/press/kommentaariid/Arhiiv/ 2007/ 190.html>

	2005	2006	2007*	2008*	2009*
<b>Real GDP growth (%)</b>	10.2	11.2	7.3	4.3	5.7
<b>GDP deflator growth (%)</b>	6.1	6.2	8.8	7.7	5.1
<b>Real private consumption growth (%)</b>	10.6	15.1	11.4	6.4	6.1
<b>Real gov. consumption growth (%)</b>	1.6	2.6	4.1	2.2	2.6
<b>Real investment growth (%)</b>	9.9	22.4	7.5	-1.6	1.8
<b>Real export growth (%)</b>	20.5	8.3	5.2	5.3	7.1
<b>Real import growth (%)</b>	16.3	17.1	5.0	3.9	5.3
<b>Unemployment rate (%)</b>	7.9	5.9	5.2	5.8	6.2
<b>VA growth per full-time employee (%)</b>	8.2	5.3	6.1	4.5	5.9
<b>Real wage growth (%)</b>	8.5	11.9	15.1	8.8	5.0
<b>Average gross wage growth (%)</b>	11.4	16.2	20.4	15.0	9.7
<b>External debt (% of GDP)</b>	85.3	96.4	107.5	108.9	108.4
<b>Budget balance (% of GDP)</b>	2.3	3.7	2.8	1.1	0.7

\* The October forecast of Bank of Estonia.



## "Hot mail" – Hotmail

lineage "father" is 37-year-old Steve Jürvetson. Steve's father and mother escaped from occupied Estonia. Steve bought the risky project of Hotmail from a young Hindu for 300 000 dollars and began developing it. After two years, Jürvetson sold the product for 400 million dollars to Microsoft.



## KaZaa – shared files

The primary code writers of KaZaa and Skype are Ahti Heinla, Priit Kasesalu and Jaan Tallin. They programmed the original KaZaa code together with an Estonian and Swedish team.



## The free phoning software Skype

After selling KaZaa to Sharman Networks, Zennström and Friis hired same programmers who created KaZaa. The team got also an addition in a new Estonian programmer, named Toivo Annus

*info technological super achievements.*

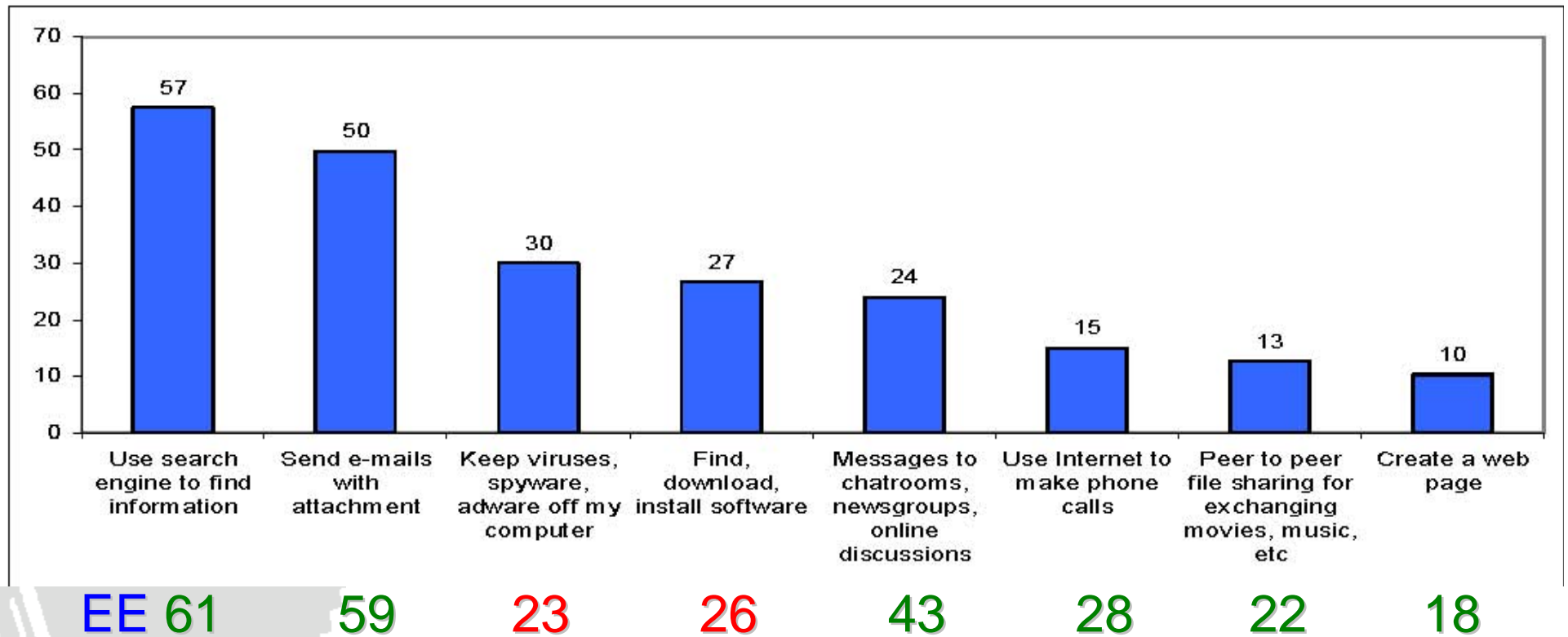


# EE *E-Estonia*

[http://www.vm.ee/estonia/kat\\_175/pea\\_175/1163.html](http://www.vm.ee/estonia/kat_175/pea_175/1163.html)

- **65 per cent** of the population aged 6-74 years uses the internet ([TNS EMOR](#), spring 2007).
- **53 per cent** of households have internet capabilities, broadband connections **48 per cent** (*Eurostat DATA in focus, 23/2007, author: Maria SMIHILY*).
- **All Estonian schools** are connected to the internet.
- A network of Public Internet Access Points covers **all Estonia's cities and towns**.
- It is possible in more than **1100** public places for laptop users to utilize rapid wi-fi internet connections; in many places that service **is free of charge**.  
([www.wifi.ee](http://www.wifi.ee))

Figure 3: Individuals who have ever carried out specific Internet related activities in EU27, 2007 (%)



EE 61

59

23

26

43

28

22

18

Source:

[http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-QA-07-023/EN/KS-QA-07-023-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-QA-07-023/EN/KS-QA-07-023-EN.PDF)

## EE *E-Estonia*

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- Income tax declarations can be made electronically via internet. In 2007, **86 per cent** of income tax declarations were presented through **e-Tax Board**.
- Expenditures made by the government can be followed on the Internet in real-time.
- Cabinet meetings have been changed to paperless sessions using a **web-based document system**.
- There are more mobile phone contracts than residents - **123 per 100 people** (*[National Communication Board, 2007](#)*).
- Estonia is completely covered by digital mobile phone networks.



# A Dynamic Economy

- *The Wall Street Journal* and *Heritage Foundation's Index of Economic Freedom 2007* ranks Estonia as one of the freest economies in the World - **12th out of 162 countries.**
- Estonia ranks **8th of 141 countries** in the *Economic Freedom of the World 2007*. (composed by the CATO Institute, Canada's Fraser Institute and more than 50 other institutes). Among the EU countries, Estonia is second after the UK.

# A Dynamic Economy 2

- **World Economic Forum's *Current Competitiveness Index 2007-2008*** ranks Estonia **27th among 131 countries**. Estonia is the most competitive of the Central and Eastern European countries.  
*The survey among business leaders measures economic competitiveness based on a combination of technology, the quality of public institutions and the macroeconomic environment.*
- ***World Competitiveness Yearbook 2007***, published by the International Institute for Management Development, Estonia ranks **22nd among 55 countries** and regional economies covered by the WCY.

# Estonian success in information society

- **Global Information Technology Report 2006-2007**, which uses a comprehensive tool for measuring the progress of and identifying the obstacles to information and communication technologies development worldwide, has ranked Estonia on the **20th** position among the observed **122 countries**.
- **Economist Intelligence Unit** has ranked Estonia **27th** among the served **68 countries**, while considering it the leader in Central and Eastern Europe  
*Defined by the Intelligence Unit as “the ‘state of play’ of a country’s ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit.”.*
- The **UN Global E-government Readiness Report** ranks Estonia as among the **top 22 countries** in its 2005 Web Measure Index.

# Estonia built up information society

Attempts to build up an information society as well as knowledge-based economy in Estonia can be traced way back in **Estonian politics and policy**

- The first information society strategy – *The Estonian Way to the Information Society* – was prepared already in 1994
- The main policy document on Estonian information society policy – *Principles of Estonian Information Policy* – was approved by the Parliament in 1998
- An updated version of the strategy – *Principles of the Estonian Information Policy 2004-2006* – was approved by the Government in 2004
- The new *Estonian Information Society Development Plan 2013*

# Estonian Tiger Leap

Estonia is well known for its ICT (*Information and communication technologies*) initiative on the **general education level**, namely the **Tiger Leap**

- The first school computerization program was implemented in the years 1987-1992
- In 1992-1996 the Ministry of Education carried out open tenders for school computers - each year schools received, approx. 0.2 million US dollars worth of IT equipment

# Estonian Tiger Leap

- On February 21, 1996, President L. Meri proclaimed the **Tiger Leap National Program**. The goal of the Tiger Leap national program was
  - the modernization of the Estonian educational system,
  - creating conditions for the formation of an open learning environment and
  - better adaptation to the demands of an information society
- **Tiger Leap Foundation** established in 1997 to offer support in procuring ICT equipment for general educational schools



# Estonian Tiger Leap

# Estonian Tiger Leap

- **Tiger Leap National Program** was tasked with 1:
  - providing Estonian teachers with elementary computer skills,
  - building a distance and continuous learning structure for teachers and pupils
  - developing a curriculum with the assistance of a learning environment which develops interactive and learning skills
  - connecting the Estonian educational system with international information databases
  - encouraging the creation of original software for Estonian language, culture, history and nature, in accordance with the state curriculum

# Estonian Tiger Leap

- **Tiger Leap National Program** was tasked with 2:
  - developing information systems for education with the assistance of the PHARE program, the establishment in every county of a regional computer training center
  - providing assistance to counties for the development of the information technological infrastructure of the schools, proceeding from the development plan of the schools and their relationship to the development of the region

## **Success is a myth**

**The image of Estonia's success in implementing ICT is a myth:  
Estonia's "high" level is relative.  
However, our backwardness relative to developed countries is not as great as compared to former eastern block countries.**

# Success is a myth

This relative success has been ensured by:

- a slightly better starting position (a systematic approach to the development of academic computer science, the small amount of old equipment, and a clear will to update)
- transfer of western experiences and knowledge (the right neighbors)
- an inherited good level of general and higher education
- openness and the use of de facto standards
- a beneficial business and investment environment
- state investments

# Success is a myth

There is, however, no reason for euphoria. In order to achieve a level and effectiveness comparable with Europe and the US, much work is needed - to look at developing the content, training people and raising the level of the working culture, using existing resources and updating legislation. Here we do not have a beneficial starting position - we are actually behind the pack. *(source: The Estonian Tiger Leap into the 21 st Century*

<http://www.esis.ee/ist2000/background/tiigrihype/2.html>



# Tiger Leap

- Actually, the Tiger Leap has moved outside the borders of general and higher education. Today we have a process encompassing all of Estonia, which must guarantee both a better infrastructure as well as a competent individual, who can utilize this modern infrastructure and make it work in his or her interests.
- The initiation of programs like Tiger Leap is now a worldwide trend - most developed countries, and also post-socialist countries, have a program which is generally called information and communication technology in education. Estonia took example primarily from Finland. Very ambitious programs have been initiated in the US, Ireland, Scotland, Portugal, etc. (cf. Appendix 2a). Estonia is, therefore, not unique - we are attempting to keep up with the others, and we have been doing this relatively successfully.

# Estonian e-University

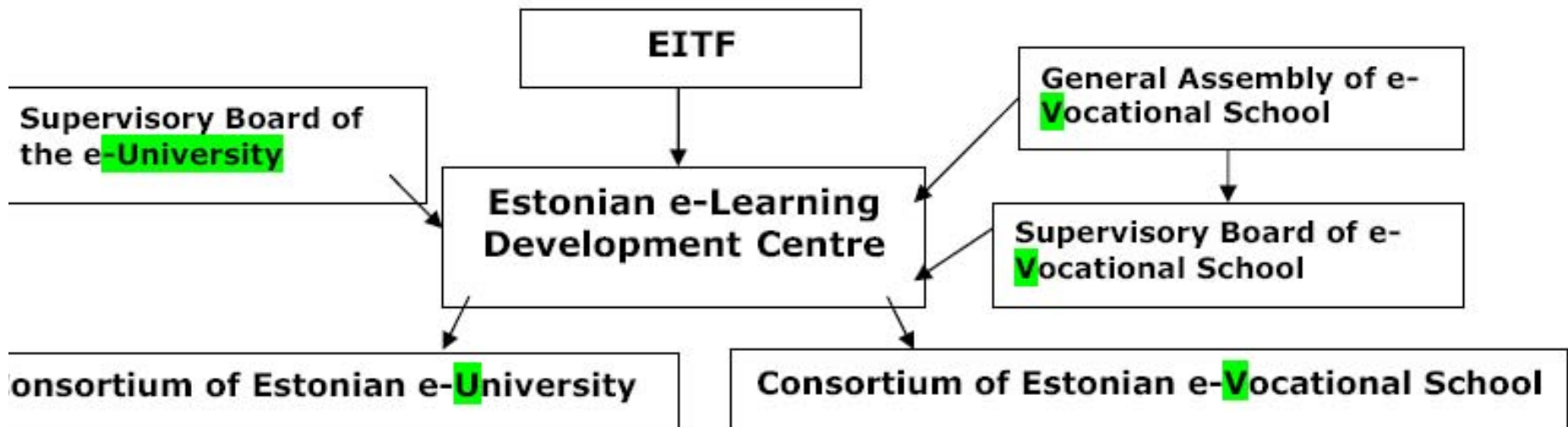
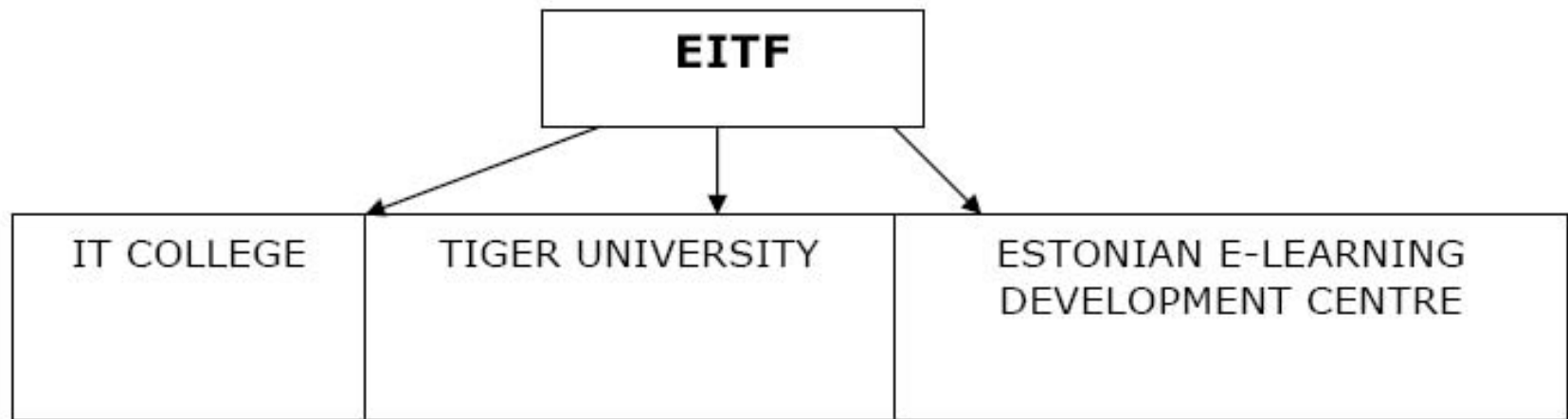
Estonian e-University is a consortium of universities and applied universities, was founded in February 2003.

## Consortium consists of

- Estonian Ministry of Education and Research
- Estonian Information Technology Foundation
- University of Tartu
- Tallinn Technical University
- Tallinn University
- Estonian University of Life Sciences
- Estonian Business School
- Estonian Information Technology College
- University Nord
- International University Audentes



# Estonian Information Technology Foundation EITF



# Estonian e-University

Functions of the Estonian e-University consortium are:

- Coordination of cooperation between universities and applied universities based on principles of profound studies
- Increasing the availability of quality education for students and other people willing to learn, for example **adults**, handicapped people, Estonians abroad and foreign students

# Estonian e-University

- Educating lecturers of universities to compile and practice quality and efficient e-courses
- Providing lecturers with necessary technical equipment
- Improving the reputation of university education in Estonia and creating contacts for cooperation between foreign universities and business circles

## **Estonian e-University is a member of:**

**EADTU** European Association of  
Distance Teaching Universities



ePortfolio **EIFEL** (European  
Institute for E-Learning)



**EFQUEL**



**EDEN** European Distance and e-  
Learning Network

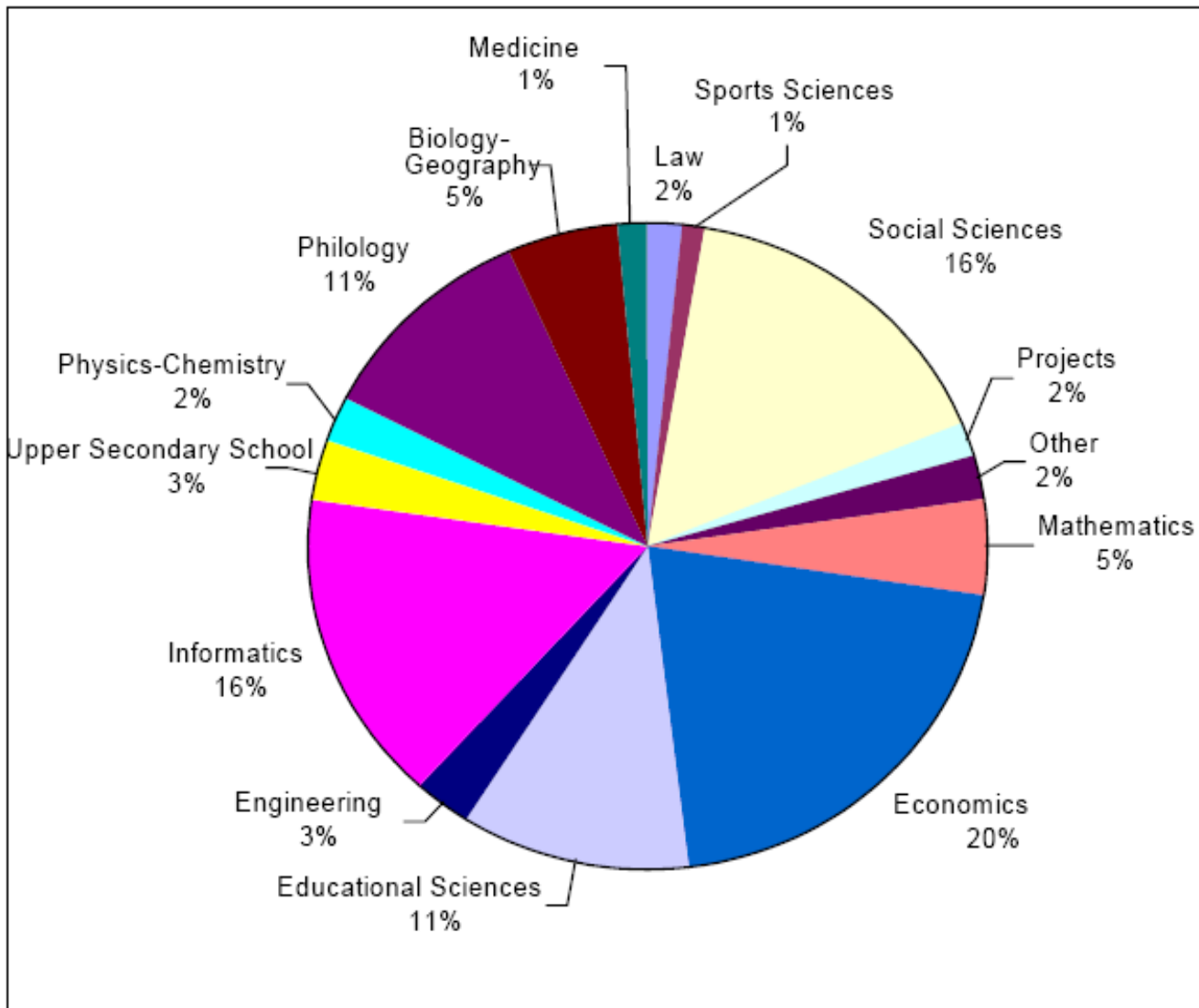


**Baltic Sea Virtual Campus**

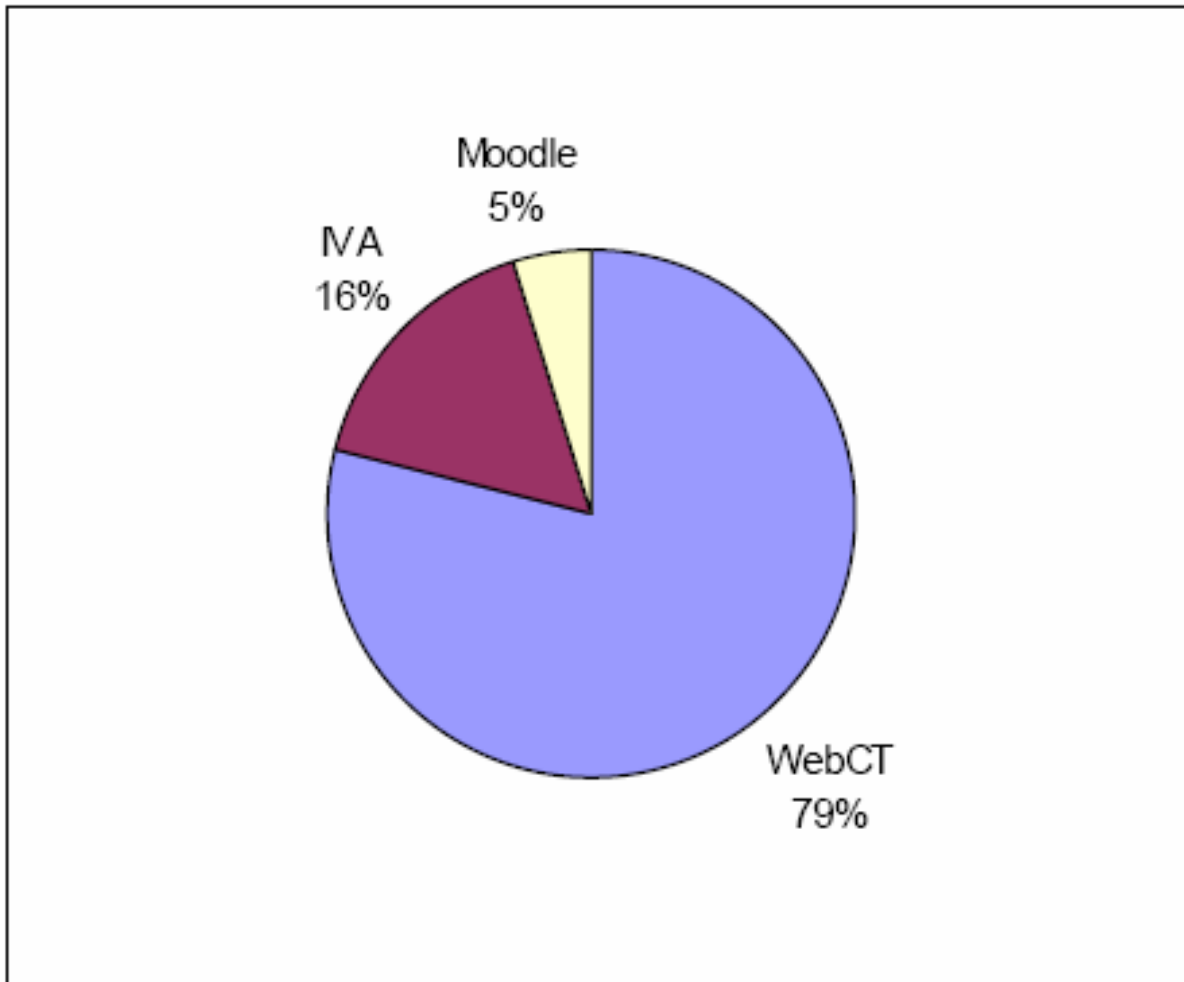


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Division of e-courses in the Estonian e-University consortium according to areas. *Source: E-learning Development Strategy 2007-2012*



WebCT	79%
IVA	16%
Moodle	5%

Division of e-courses in the Estonian e-University consortium according to environments: . *Source: E-learning Development Strategy 2007-2012*

# Objectives and areas activity

- The main objective of the activities of the **Estonian e-Learning Development Centre** is to contribute to the increase of the quality and efficiency of learning in Estonian institutions of higher education and vocational schools through a wider application of e-learning methods and ICT in the learning process, making them every-day, inseparable parts of learning.

# Objectives and areas activity

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# E-learning allows to

(fully or partially by way of e-learning) :

- improve the **quality of learning** as it makes cooperation between educational institutions and teaching staff easier and integrates different subjects and forms of learning;
- make learning more **efficient** and available,
- develop learner-focussed motivating learning methods

# E-learning allows to

- create a learning environment that supports learning in the best possible way;
- significantly change the content of the work of teaching staff as it creates the option to individualise the learning process and make it creative and flexible considering the learner's specific characteristics.

# the Estonian e-Learning Centre

will focus on the following areas of activity until 2012

- 1) **training,**
- 2) infrastructure,
- 3) analysis and development projects,
- 4) **e-learning support system,**
- 5) **supporting the creation of e-curricula and e-courses,**
- 6) national and international cooperation,
- 7) **popularisation of e-learning.**

# Training

Most of the teaching staff working in Estonian institutions of higher education and vocational schools lack the skills and experience required for the creation of e-courses and use of ICT equipment in the study process.

At least 80% of full-time teaching staff in institutions of higher education and at least 60% full-time teaching staff in vocational schools and institutions of professional higher education are on the basic level of education technology proficiency, at least 50% of those who have passed the basic level have progressed to the advanced level. All trainers are on the expert level.



# E-learning Support System

Due to the **large workload** and **limited experience**, it is difficult for teaching staff to independently design new e-courses and complete them.

Estonia has a functioning support system for the development and support of e-learning (60 education technologists, 10 regional e-learning centres and 500 e-courses are receiving tutor support).

Training for education technologists and tutors.

# Supporting the Creation of e-Courses and e-Curricula E-learning Support System

The Estonian e-Learning Development Centre offers financial support to the creation of e-courses and e-curricula and/or taking existing courses/curricula onto an e-platform.

80% of curricula in institutions of higher education and 30% of curricula in vocational schools have e-learning support (materials in the learning information system (LIS), learning environment, forum/lists, grade system/feedback, etc.).

# Popularisation

Even though both consortia have been operating for several years, the **term of e-learning** and especially its content are relatively confusing for most of the teaching staff, not to mention the public.

- Improvement of people's awareness of e-learning (public presentations, publications, etc.)
- Offering opportunities of individual development to teaching staff (training, conferences, e-Learning Newsletter; e-learning information day)

# SWOT-ANALYSIS

- **Strengths**
- **Weaknesses**
- **Opportunities**
- **Threats**