

ESTONIAN INFORMATION TECHNOLOGY FOUNDATION



E-LEARNING DEVELOPMENT CENTRE

STRATEGY

2007-2012

TALLINN

1. INTRODUCTION	5
1.1. General Data	5
1.2. Vision	5
1.3. Mission.....	6
1.4. Principal Objective	6
1.5. Motto	6
1.6. Target Group	6
1.7. Resources	6
1.8. Control.....	6
2. OVERVIEW OF THE CURRENT SITUATION	7
3. STRUCTURE OF EITF AND THE ESTONIAN E-LEARNING DEVELOPMENT CENTRE.	
.....	10
3.1. Structure of EITF.....	10
3.2. Structure of the Estonian e-Learning Development Centre	10
4. OBJECTIVES AND AREAS OF ACTIVITY	11
4.1. Training.....	13
4.1.1. Objectives	13
4.1.2. Activities.....	13
4.2. Infrastructure	13
4.2.1. Objective	14
4.2.2. Activities.....	14
4.3. Analysis and Development Projects	14
4.3.1. Objectives	14
4.3.2. Activities.....	15
4.4. E-learning Support System.....	15
4.4.1. Objective	15
4.4.2. Activities.....	15
4.5. Supporting the Creation of e-Courses and e-Curricula.....	15
4.5.1. Objectives	16
4.5.2. Activities.....	16
4.6. National and International Cooperation.....	16
4.6.1. Objectives	16
4.6.2. Activities.....	17
4.7. Popularisation	17
4.7.1. Objective	17

4.7.2. Activities-----	17
5. SWOT-ANALYSIS	18
5.1. Strengths -----	18
5.2. Weaknesses -----	18
5.3. Opportunities -----	18
5.4. Threats -----	19
6. CRITICAL SUCCESS FACTORS.....	19
7. CURRENT SITUATION AND FUTURE OF RESOURCES	19
7.1. Management and Staff-----	19
7.2. Finances -----	20
7.2.1. Income -----	20
7.2.2. Costs -----	22
7.3. Infrastructure of e-Learning -----	24
8. TERMINOLOGY	25

E-LEARNING DEVELOPMENT CENTRE

Legal person: Estonian Information Technology Foundation (EITF)
Address: Rävälä pst 14
10143 Tallinn
Telephone: +372 685800
Fax: +372 685801
E-mail: info@eitsa.ee
Website: www.eitsa.ee

Structural unit of EITF: **e-õppe arenduskeskus**
International name: **Estonian e-Learning Development Centre**
Website: www.e-ope.ee
E-mail: e-ope@eitsa.ee
Websites of consortia: www.e-uni.ee; www.e-vet.ee

Principal area of activity: support, coordination and development of e-learning activities in universities, institutions of professional higher education and vocational schools through the Estonian e-University and Estonian e-Vocational School consortium.

1. INTRODUCTION

This strategy has been prepared for the purpose of planning the activities of the Estonian e-Learning Development Centre in 2007-2012. The strategy is based on the planning and realisation of e-learning in Estonian higher and vocational education through two consortia administered by the Estonian e-Learning Development Centre:

- 1) Estonian e-University,
- 2) Estonian e-Vocational School.

The strategy describes the current situation of e-learning in Estonia, sets the objectives of the Estonian e-Learning Development Centre until 2012, presents an activity plan that needs to be observed in order to achieve the objectives and also specifies the required resources.

1.1. General Data

The Estonian e-Learning Development Centre was created as a separate structural unit of the Estonian Information Technology Foundation (EITF) on 2 May 2006. Before the creation of the Estonian e-Learning Development Centre, e-learning in Estonian higher and vocational education was coordinated by two consortia: the Estonian e-University consortium (founded on 21 February 2003) and the Estonian e-Vocational School consortium (founded on 16 February 2005). EITF is the legal person of the consortium and the managing bodies are the Council of the Estonian e-University and the Council and General Assembly of the Estonian e-Vocational School, respectively. Lists of the members of the Estonian e-University and Estonian e-Vocational School consortia have been given in appendices to this strategy (see Appendix 1 and Appendix 2). The Estonian e-Learning Development Centre employs 6 full time employees and 2 contractors (as of January 2007). Among people acquiring higher and vocational education, the consortium of the Estonian e-Vocational School forms 87% of the total number of learners and the consortium of the Estonian e-University forms 83% of the total number of learners (as of January 2007).

1.2. Vision

Quality, flexible and internationally competitive higher and vocational education is available to different target groups in Estonia.

1.3. Mission

The mission of the Estonian e-Learning Centre is to launch e-learning in vocational and higher education in Estonia.

1.4. Principal Objective

Methods of e-learning and information and communication technology (ICT) are an everyday, inseparable part of the learning process higher and vocational education.

1.5. Motto

I LEARN FOR AS LONG AS I LIVE.

1.6. Target Group

The implementation of e-learning methods must allow learners to acquire a good education. In order to achieve this objective, the Estonian e-Learning Development Centre uses its activities to influence the heads and teaching staff in higher and vocational education.

1.7. Resources

The success of the implementation of this strategy depends first and foremost on the existence of human, financial and technological resources. Human resources mean the team of the Estonian e-Learning Development Centre, education technologists (60 education technologists work in educational institutions who are members of the Estonian e-University and Estonian e-Vocational School consortia as of December 2006) and teaching staff who work in thematic networks. Financial resources required for the activities described in the strategy are guaranteed from membership fees, the state budget, from projects (European Social Fund, European Regional Development Fund, European Union programs) or from our own funds. Centrally obtained and administered hardware and software required for the development and realisation of e-learning form the technical resource.

1.8. Control

Achievement of the objectives set in the strategy will be analysed and assessed and on the basis of this the strategy will be amended every year at a joint meeting of the Councils of the two consortia.

2. OVERVIEW OF THE CURRENT SITUATION

The consortium of the Estonian e-University was created on 21 February 2003 and it became the starting block in the implementation and coordination of e-learning in higher education in Estonia. It was founded by 6 institutions of higher education, the Ministry of Education and Research and the Estonian Information Technology Foundation. The principal objective of the consortium is coordination of e-learning cooperation between institutions of higher education, introduction and implementation of innovative ideas, inclusion of new target groups and development of international cooperation.

The number of students in Estonia in autumn 2006 was 68,785 and 70% of these were splitting their time between university and work and/or other activities. In addition to this, tens of thousands of learners attend in-service training courses in institutions of higher education. The share of learners taking in-service training or retraining courses and adult learners participating in continuing training will increase in the future, because lifelong learning guarantees that many adult learners return to the acquisition of a formal education and the number of students in upper secondary schools will decrease. Institutions of higher education who are members of the Estonian e-University employ 2,265 full-time teaching staff.

Launching the work of the Estonian e-Vocational School consortium on 16 February 2005 became the logical step after the further development of the Estonian e-University. It was founded by 4 institutions of professional higher education, 34 institutions of vocational education, the Ministry of Education and Research and the Estonian Information Technology Foundation. The principal objective of the Estonian e-Vocational School consortium is launching and promotion of the e-learning cooperation of member schools and development of e-learning proceeding from the principles of lifelong learning and regional development.

A total of 34,087 people are currently learning in vocational schools and institutions of higher professional education that are members of the Estonian e-Vocational School. The number of full-time teachers in the 2005/2006 academic year was 2,503; 1,425 of them are vocation teachers and 1,078 teach general subjects.

The main attention of the Estonian e-University and Estonian e-Vocational School consortia is on five areas.

1. Development and Support of Teaching Staff

We have created a three-level training system – basic level, advanced level and expert level. 1,300 teaching staff have taken part in different e-learning training from March 2003 to September 2006. In 2004, institutions of higher education started creating positions for education technologists.

A total of 60 education technologists currently work in institutions of higher education and vocational schools (as of December 2006, 40 in the e-Vocational School and 20 in the e-University).

2. Development of the Content of e-Learning

Institutions of higher education and vocational schools have been supported in the creation of e-courses in the extent of 350 Credit Points.

3. Infrastructure of e-Learning

The Estonian e-Learning Development Centre had 6 servers at its disposal in autumn 2006. Support is given to the administration of three learning environments: WebCT, IVA and Moodle. Websites of consortia have been created (www.e-uni; www.e-vet.ee). A video conference system that covers all Estonian educational institutions has been created in order to make e-learning more varied.

4. International Cooperation

The Estonian e-Learning Development Centre is a member of four international consortia: *European Distance and e-Learning Network (EDEN)*; *European Association of Distance Teaching Universities (EADTU)*; *EIFEL*; *European Foundation for Quality in eLearning (EFQUEL)*.

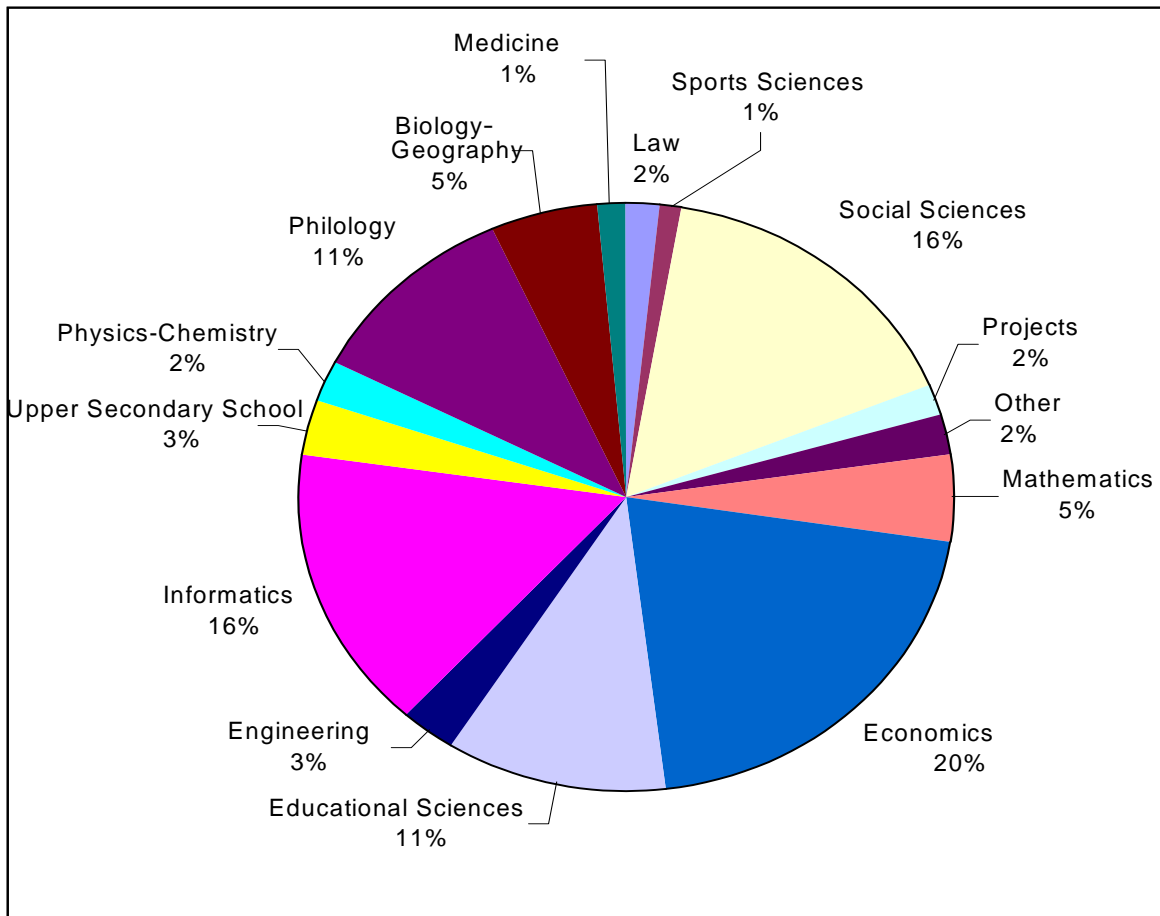
5. Briefing Work

A conference is held every spring and a training seminar every autumn. Café club events are organised and the e-Learning Newsletter is issued. Informational events about e-learning are organised in different regions of Estonia.

The share of e-courses in the Estonian e-University consortium among all courses was up to 14% and in the Estonian e-Vocational School up to 2%. The total number of e-courses in institutions of higher education is 2,100. 21,000 learners have taken part in different e-courses (average for 2006). E-learning is mostly used as a support to lectures, which entails use of some ICT equipment and making materials available on the web.

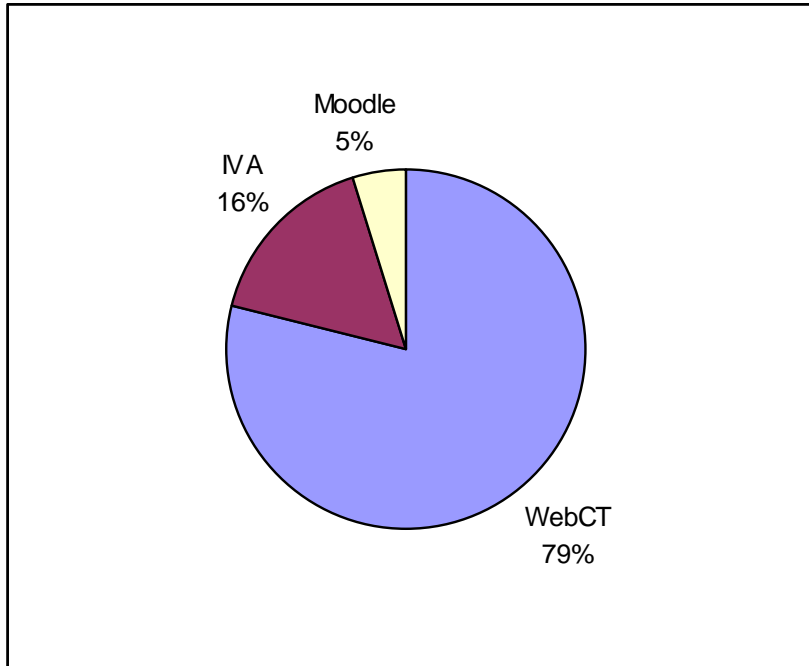
Division of e-courses in the Estonian e-University consortium according to areas (approximately):

Economics	20%
Social Sciences	16%
Informatics	16%
Educational Sciences	11%
Philology	11%
Biology-Geography	5%
Mathematics	5%
Upper Secondary	
School Subjects	3%
Engineering	3%
Physics-Chemistry	2%
Projects	2%
Law	2%
Medicine	1%
Sports Sciences	1%
Other	2%



Division of e-courses in the Estonian e-University consortium according to environments:

WebCT	79%
IVA	16%
Moodle	5%



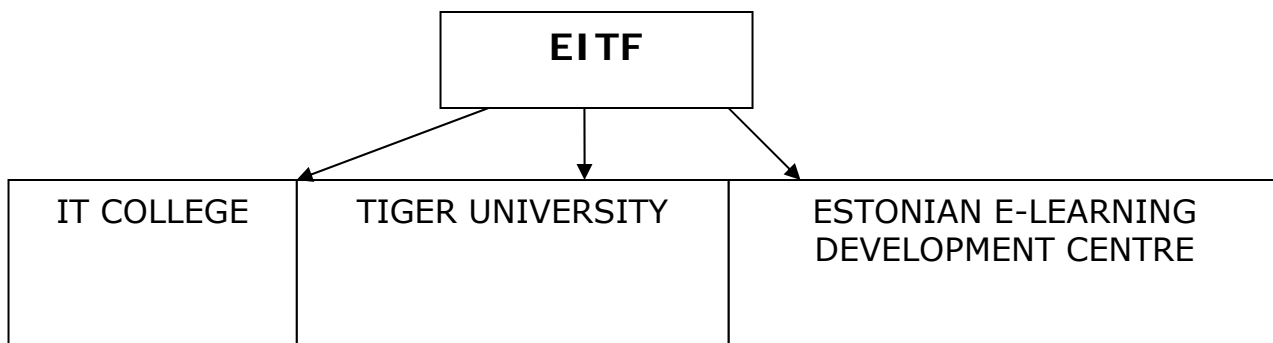
3. STRUCTURE OF EITF AND THE ESTONIAN E-LEARNING DEVELOPMENT CENTRE

3.1. Structure of EITF

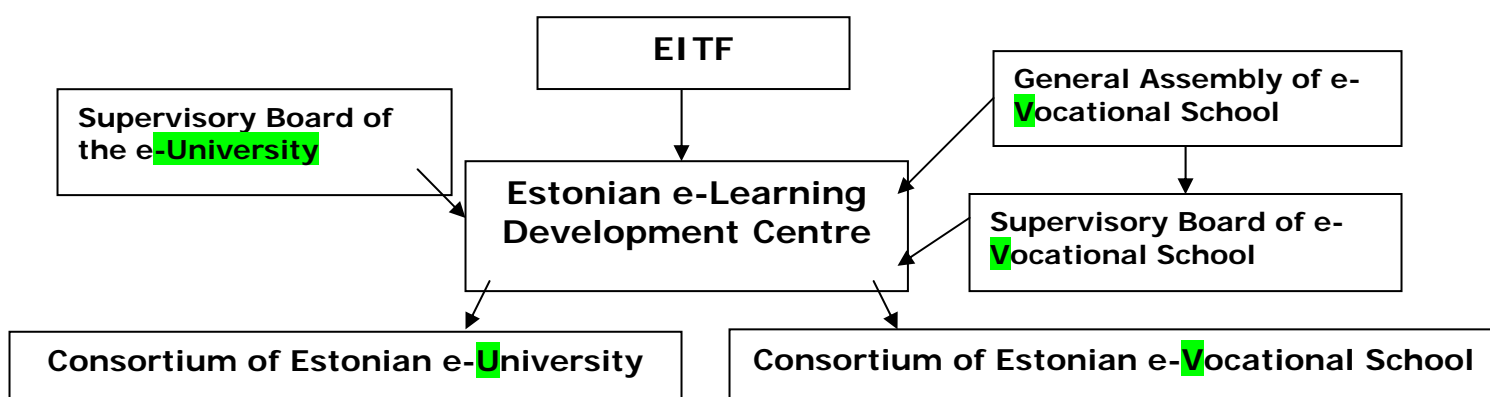
Administration and development of the Estonian e-University and Estonian e-Vocational School consortia showed that the projects have become dependable and that a common structure is required for the better coordination of e-learning development activities in vocational and higher education. The Estonian e-Learning Development Centre was created as a separate structural unit within EITF on 2 May 2006.

EITF administers three lines of activities:

- 1) administration and development of the IT College,
- 2) administration of the Tiger University,
- 3) administration and development of the Estonian e-Learning Development Centre.



3.2. Structure of the Estonian e-Learning Development Centre



4. OBJECTIVES AND AREAS OF 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.

Under the quality of learning, we mean the quality of learning as a process. The quality of the content of what is taught does not depend on the use of this or that method and the

Estonian e-Learning Development Centre does set assessment or improvement of the content of the courses offered by schools as its objective. However, it does contribute to the improvement of the quality of the learning process. E-learning does not mean copying the current learning process with the help of information and communication technologies (ICT), but redesigning learning according to new possibilities. Introduction of e-learning does not mean that current good learning and teaching methods need to be abandoned, but it allows them to be updated and broadened.

Passing a curriculum fully or partially by way of e-learning contributes to the improvement of the quality of the learning process in higher and vocational education. Learning becomes truly open, e-learning allows everyone to learn during their entire lives regardless of age, professional activities, geographic location or special needs. On the other hand, the use of e-learning methods and ICT equipment makes the learning process significantly more efficient both for learners as well as society. Learners can use their time and money to the maximum.

E-learning allows to:

- 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, thereby promoting the maximum realisation of the abilities of all members of society;
- develop learner-focussed motivating learning methods, where the learner has a more important role in designing the learning process and thereby 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.

In order to achieve its mission, vision and principal objective, the Estonian e-Learning Development 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.

According to areas of activity, the Estonian e-Learning Development Centre sets itself the following goals and plans the relevant activities for their achievement.

4.1. 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. In order to help members of the consortium, the Estonian e-Learning Development Centre has been organising teacher training from 2003 and it has started the development of an education technology proficiency system.

4.1.1. Objectives

- 4.1.1.1. 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.

4.1.2. Activities

- 4.1.2.1. Development and implementation of the proficiency system of teaching staff in higher and vocational education by 2007.
- 4.1.2.2. Further development of the e-learning in-service training system on all proficiency levels of education technology.
- 4.1.2.3. Coordination and organisation of e-learning training for teaching staff.
- 4.1.2.4. Training for trainers.
- 4.1.2.5. Coordination of pedagogical methodology and its introduction to teaching staff.

4.2. Infrastructure

The infrastructure of e-learning is a combination of hardware and software (servers, learning environment, homepages, etc.), which is required for the creation of e-courses,

organisation and coordination of e-learning. This infrastructure is constantly changing due to the fast development of technology. It was impossible to project what hardware and software was going to be used in 2012 when the development plan (autumn 2006) was prepared.

4.2.1. Objective

- 4.2.1.1. There is always a contemporary, functioning, secure and uniform e-learning infrastructure in Estonia, which guarantees that the objectives of the Estonian e-Learning Development Centre are achieved and methods of e-learning are implemented in higher and vocational education.

4.2.2. Activities

- 4.2.2.1. Acquisition, testing, adaptation, development, administration and management of the infrastructure required for the completion of different forms of e-learning.
- 4.2.2.2. Guarantee that the e-learning infrastructure works without problems 24/7.
- 4.2.2.3. Acquisition and development of common databases and technological solutions for the development of new technological solutions (e-portfolio; repository of learning objects; database of tutors, trainers and e-courses).

4.3. Analysis and Development Projects

Extremely fast changes in learning methods as well as the globalisation of education are currently taking place in the traditionally conservative world of education due to the implementation of e-learning methods and ICT equipment. The Estonian e-Learning Development Centre sets itself the following objectives in order to be able to influence the development of e-learning in Estonia.

4.3.1. Objectives

- 4.3.1.1. To always have an overview of the situation of e-learning and trends in higher and vocational education both in Estonia and abroad.
- 4.3.1.2. To implement international experience in the development of e-learning in Estonia.
- 4.3.1.3. The Estonian e-Learning Development Centre is an important partner in international e-learning research and development.

4.3.2. Activities

- 4.3.2.1. Participation in the work of international consortia.
- 4.3.2.2. Initiation and coordination of e-learning projects in Estonia.
- 4.3.2.3. Creation of the Estonian e-learning monitoring system.
- 4.3.2.4. Initiation, coordination and partnership in international projects.
- 4.3.2.5. Collection of e-learning statistics and trend analysis.
- 4.3.2.6. Creation of a uniform system of e-learning terminology and administration of the relevant virtual dictionary.

4.4. 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. They need assistance both in technical and methodological issues. Learners taking part in e-courses also need assistance at times. Positions of education technologists and tutors have been created in the higher and vocational education system to resolve these problems and a common multimedia support will also be developed.

4.4.1. Objective

- 4.4.1.1. 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).

4.4.2. Activities

- 4.4.2.1. Training for education technologists and tutors.
- 4.4.2.2. Coordination of the work of education technologists and tutors and administration of the work of the network.
- 4.4.2.3. Coordination of the activities of regional e-learning centres.
- 4.4.2.4. Development and launch of the concept of the technological support of e-learning.

4.5. Supporting the Creation of e-Courses and e-Curricula

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. At the same time it is important that the courses/curricula that will be created offer a quality

content and study process. The Estonian e-Learning Development Centre considers improvement of the quality of the study process of courses in the higher and vocational education system one of its tasks.

4.5.1. Objectives

- 4.5.1.1. 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.).
- 4.5.1.2. The curricula of least 8 Estonian e-University and 5 Estonian e-Vocational School consortium members can be fully taken in the form of e-learning.
- 4.5.1.3. The volume of e-courses created is 4200 CP, 2400 CP of this in the Estonian e-University consortium and 1800 CP in the Estonian e-Vocational School consortium.
- 4.5.1.4. All e-courses and e-curricula that will be created correspond to quality standards.

4.5.2. Activities

- 4.5.2.1. Financial support to making curricula, learning objects and courses either fully or partially web-based.
- 4.5.2.2. Development and implementation of the e-course quality system.

4.6. National and International Cooperation

The demographic situation of Estonia will increase the already tough competition in the education market in the next few years. At the same time, more and more young people go to study abroad. Cooperation is the only way in which educational institutions can survive in such competitive conditions. The Estonian e-Learning Development Centre tries to be the active side in communicating about e-learning and creating contacts with institutions of higher education and vocational schools and different Estonian and foreign organisations interested in the development of e-learning.

4.6.1. Objectives

- 4.6.1.1. Good cooperation with educational institutions of different levels, e-learning development units and other organisations (companies, social partners) in order to guarantee improvement of the ability to compete.

4.6.2. Activities

- 4.6.2.1. Participation in international e-learning organisations.
- 4.6.2.2. Development of cooperation with the Ministry of Education and Research and other institutions engaged in the development of e-learning (Tiger Leap Foundation; Foundation Archimedes, Foundation Innove, e-school, etc.).
- 4.6.2.3. Contribute to the free movement of students between Estonian institutions of higher education and vocational schools.
- 4.6.2.4. Coordination of the work of Estonian e-University and Estonian e-Vocational School.
- 4.6.2.5. Coordination of the work of thematic networks.

4.7. 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. However, Estonian institutions of higher education and vocational schools are offering more and more e-courses in foreign languages in addition to the ones in Estonian. The Estonian e-Learning Development Centre is trying to help institutions of higher education and vocational schools find answers to the question of how to make foreign learners aware of these.

4.7.1. Objective

- 4.7.1.1. E-learning and possibilities of e-learning are well known in Estonia and abroad.

4.7.2. Activities

- 4.7.2.1. Improvement of people's awareness of e-learning (public presentations, publications, etc.).
- 4.7.2.2. Offering opportunities of individual development to teaching staff (training, conferences, e-Learning Newsletter; e-learning information day).
- 4.7.2.3. Meetings of e-learning activists and developers (e-learning café club; e-Learning Newsletter).
- 4.7.2.4. Participation in international conferences.
- 4.7.2.5. Organisation of international conferences.
- 4.7.2.6. Marketing e-curricula and e-courses.

5. SWOT-ANALYSIS

5.1. Strengths

- The goods reputation of the Estonian e-Learning Development Centre and 3 years of experience in e-learning activities.
- The team is motivated, able to develop and open to everything new.
- Experience in coordination of international projects (UNIVe, REDEL, e-KEY) and experience in participation in five international projects.
- Support of the EITF management.
- A good and strong initiative group consisting of the teaching staff of different institutions of higher education and vocational schools and their readiness to develop e-learning together.
- Adherence to international e-learning standards in our activities.
- The interest of learners and enthusiastic teaching staff.

5.2. Weaknesses

- E-learning is not a priority for the Ministry of Education and Research.
- E-learning is not of highest importance for managements of institutions of higher education and vocational schools.
- Middle managers of institutions of higher education do not acknowledge e-learning.
- There is no motivation system to make teaching staff implement e-learning.
- The large workload of teaching staff and the lack of education technological proficiency for the development of e-learning.

5.3. Opportunities

- Estonian society (in the widest sense) is open to new, innovative ideas, including the implementation of ICT equipment in different areas of life.
- The decreasing number of learners/students makes Estonian institutions of higher education and vocational schools join forces, introduce new forms and methods of learning and include new target groups (companies, state institutions, learners with special needs, foreign students).
- E-learning is among the priorities of the European Union.

5.4. Threats

- Restriction of financing of e-learning projects and uncoordinated activities in the European Union project implementation units.
- The inertness and internal competition in the Estonian education system.
- Restrictions and prejudices associated with copyrights.

6. CRITICAL SUCCESS FACTORS

Critical success factors, which require special attention, have been highlighted to minimise the weaknesses and threats specified in the SWOT-analysis of the Estonian e-Learning Development Centre.

- Cooperation with the Ministry of Education and Research and the managements of institutions of higher education and vocational schools.
- Improvement of the awareness of school managements about e-learning.
- Development of pedagogy and didactics proceeding from e-learning and corresponding training for teaching staff.
- Implementation of the *Creative Commons* license principles in Estonia.

7. CURRENT SITUATION AND FUTURE OF RESOURCES

7.1. Management and Staff

The work of the Estonian e-Learning Development Centre is managed by the member of the EITF Management Board who deals with development issues. The manager of the Estonian e-Learning Development Centre coordinates the activities of the Centre in cooperation with the supervisory board of the Estonian e-University and Estonian e-Vocational School consortium and the general assembly of the Estonian e-Vocational School. There is every-day cooperation between consortium members, education technologists, tutors, e-learning activists and the teaching staff who participate in thematic networks.

1. The Estonian e-Learning Development Centre currently has six employees and six contractors:

- 1) Manager – Ene Tammeoru,

- 2) Project Manager (coordination of the international and Estonian projects of the Estonian e-University consortium) – Jüri Lõssenko,
- 3) Project Manager (coordination of the international and Estonian projects of the Estonian e-Vocation School consortium) – Kerli Kusnets,
- 4) Chief Education Technologist – Karin Ruul,
- 5) Training Project Manager – Triin Pajur,
- 6) Assistant (preparation and submission of financial reports of projects) – Kristi Kadaja,
- 7) IT Project Manager – vacancy,
- 8) e-Learning Environment Administrator (WebCT and Moodle) – Eneli Sutt (contractor),
- 9) Linux-Server Administrator – Hendry P. Ariste (contractor).

The e-learning centres operation in different regions are one of the most important parts of the e-learning support structure. In 2004 and 2005, the Estonian e-Learning Development Centre opened 10 e-learning centres in different regions of Estonia (Appendix 3).

7.2. Finances

The financial projection of the Estonian e-Learning Development Centre for 2007-2012 has been given in Appendix 4. The consortia of the Estonian e-Learning Development Centre have many common costs (e.g. training, information, etc.). The financial projection covers both the Estonian e-University and Estonian e-Vocational School consortia. The projection was prepared on the basis of the actual income and costs of the Estonian e-Learning Development Centre in 2006 and all planned activities. If income (e.g. ESF financing) is smaller than planned, we will mainly have to reduce the support offered to schools for the creation of e-curricula and e-courses.

7.2.1. Income

7.2.1.1. ESF Projects

The main source of income in 2006 and also in the nearest future are the funds received from the European Social Fund (ESF). At the time when the development plan was prepared (September 2006), the activities of the Estonian e-Learning Development Centre were financed from two ESF projects:

- “Regionally available quality higher education through the development of e-learning” (REDEL),
- “Development and implementation of e-learning in vocational schools and institutions of professional higher education” (e-KEY).

Project financing according to years is as follows:

	2007	2008	Total
REDEL	3,775,000	150,000	3,925,000
e-KEY	10,222,000	4,683,000	14,905,000
TOTAL	13,997,000	4,833,000	18,830,000

During the new ESF implementation period (from 2007-2013), the Estonian e-Learning Development Centre plans to submit its e-learning program (and hopes that it will be financed) for the approximate amount of 60 million kroons per year (8 million kroons in 2008).

7.2.1.2. Tiger University

In 2006, the activities of the Estonian e-Learning Development Centre were financed with 2.6 million kroons from the Tiger University program. The amount divides in two:

- Financing of the Estonian e-University consortium projects from EITF funds (720,000 kroons in 2006, approximately 9% of the total cost of ESF projects). We are projecting a similar, approximately 10% self-financing also for the next years;
- Costs of the Estonian e-Learning Development Centre that do not qualify for support in the framework of ESF programs (e.g. e WebCT license in 2007 for 1 million kroons, administration costs of learning environments IVA and Moodle). We project that such costs will increase an average 10% a year.

7.2.1.3. Membership Fees

A membership fee has been established for members of the Estonian e-University and Estonian e-Vocational School consortia, which depends on the number of students in the school. Considering the opinions of schools (especially smaller ones), we have decided to keep the current size of the membership fee (a total of approximately 1 million kroons a year). The membership fee will have to be increased in a few years' time (e.g. 2010) to compensate for inflation.

7.2.1.4. Ministry of Education and Research

Outside the Tiger University program, the Ministry of Education and Research finances the Estonian e-Learning Development Centre with the amount that covers the EITF self-financing of the e-KEY project. We are hoping that the Ministry of Education and Research will provide the same amount of direct support to activities associated with professional education in the future as well.

7.2.1.5. International Projects

Within the next 6 years, the Estonian e-Learning Development Centre will participate in 3-5 projects and it will coordinate at least one of them. We project the total volume of the projects to be one million kroons a year.

7.2.1.6. Other

The funds earned by the Estonian e-Learning Development Centre (e.g. participation fees of conferences and seminars, etc.) are recorded on the line for other income.

7.2.2. Costs

7.2.2.1. Activities

- **Training**

Considering the number of full-time teaching staff currently working in Estonian institutions of higher education (approximately 2,300) and vocational schools (approximately 2,500, the objectives we have set to ourselves (see article 4.1.1) and the number of people who have already passed training (1,300), then we have to train another 3,500 people in the next few years. Considering that training one person costs an average of 2,000 kroons and that 15% of the training costs are covered by the schools, then it takes

$$3500 \times 2000 \times 0.85 = 5,950,000 \text{ kroons.}$$

When we consider the flow of labour as 20% between 2007-2012, then the amount required for training would be the following:

$$5.25 \text{ million} \times 1.2 \approx 7.1 \text{ million kroons.}$$

The main emphasis of training is aimed at the first years of the planned project.

- **Infrastructure**

Infrastructure investments have been planned considering that we need to purchase hardware and software that will be in joint use, mainly the so-called country licenses of learning environments (WebCT, IVA and Moodle) and programs and the servers that required to keep them in working order. The WebCT license contract will remain in force until the end of 2007, from 2008 we are planning to use approximately 2 million kroons for buy the new learning environment country license, 0.5 million kroons to buy other licenses and 0.5 million kroons year to renew hardware.

- **Analysis and Development Projects**

We plan to finance this area of activity with one million kroons in 2007. Approximately 300,000 kroons of this will be spent on constant monitoring of e-learning and 700,000 kroons on different one-time research. We will continue with the same proportions whilst taking into account a 5% price increase.

- **Support System**

There are currently 20 educational technologists working in institutions of higher education and 36 in vocational schools. We project their number to be 60 from 2008, all full-time and the Estonian e-Learning Development Centre will compensate 10,000 kroons a month of their salaries + employer's taxes. It is planned to employ a full-time technical tutor in ten e-learning centres (Appendix 3) from autumn 2007, their monthly salary will be 10,000 kroons + employer's taxes. Learning tutors will be used to organise e-courses from 2008 onwards. The number of courses supported by tutors should increase to 500 by 2009. A tutor will be paid 3,000 kroons + employer's taxes for conducting one e-course. A salary increase must also be considered in the next years.

Education technologists: $60 \times 12 \times 10\,000 \times 1.333 \approx 9.5$ million kroons,

Technical tutors: $10 \times 12 \times 10\,000 \times 1.333 \approx 1.5$ million kroons,

Tutors: $500 \times 3000 \times 1.335 \approx 2$ million kroons.

10,000 kroons per CP is prescribed for multimedia costs in the production of learning objects and the content of e-courses.

We also have to plan support for project administration (accounting, legal counselling, project assistance and program management costs). We have planned to use 0.5% of the cost of all activities for this.

- **Supporting the Creation of e-Curricula and e-Courses**

The Estonian e-Learning Development Centre has set itself the objective of supporting the creation of e-courses in institutions of higher education in the extent of 600 CP and in vocational schools in the extent of 500 CP every year, which will total 6,600 CP during the entire period. Considering that the cost of taking one CP onto the e-platform in an institution of higher education is 25,000 kroons and in vocational schools 15,000 kroons and that the self-financing by schools will be 15%, the cost to the Development Centre per year will be:

$$(600 \times 25,000 + 500 \times 15,000) \times 0.85 \approx 19 \text{ million kroons.}$$

We plan to use one million kroons a year to create/procure learning objects.

- **National and International Cooperation**

We plan to use one million kroons a year on national and international cooperation.

- **Popularisation of e-Learning**

We plan to use one million kroons a year on popularisation of e-learning.

7.2.2.2. Staff Costs of the Estonian e-Learning Development Centre

There are currently 6 people working in the Estonian e-Learning Development Centre whose average monthly salary is 18,000 kroons. We are planning to recruit two new employees in 2007. We assume that 8 people are sufficient for completion of the planned activities. We also have to consider a 20% salary increase a year in the net years.

7.2.2.3. Overhead Costs

We calculate the overhead costs of e-learning as 0.5% of the money to be spent on activities.

If we do not manage to get ESF support in the planned amount, we can mainly save money on account of the production of support systems and content. This means that we will not be able to create e-courses (and therefore also curricula) at the planned volume.

7.3. Infrastructure of e-Learning

The Estonian e-Learning Development Centre currently owns six servers and it also administers and manages four portals (www.e-uni.ee; www.e-vet.ee; WebCT and Moodle community portals) and three learning environments (WebCT, IVA, Moodle). The list of the

infrastructure of the Estonian e-Learning Development Centre as of autumn 2006 has been given in Appendix 4.

8. TERMINOLOGY

1. e-learning – learning activities that take place with the help of information and communication technology (ICT), which occur in classrooms as well as outside a classroom or a formal lesson. ICT equipment (computer, projector, etc.), Internet, digital study materials, distance education environments, etc., are used or e-learning in order to improve the quality and efficiency of learning through better access to information and services, more flexible learning methods, more efficient cooperation between learners and new teaching methods.

2. e-course – a course that can be partially or fully taken on the Internet or using ICT equipment.

3. Learning Object – small, complete digital object of educational value (e.g. website, multimedia presentation, interactive exercise, test question) that can be joined into bigger one-line study materials and reused in different learning contexts and learning environments. Learning objects are equipped with standard metadata, which allow the search for learning objects to be automated, and they can be used to prepare complete learning material and present it (e.g. preparation of a unique set of test questions for every student).

4. Module - collection of courses or subjects that form a whole.

5. Learning management system – learning software that automates the management of learning events and allows the teaching staff to plan, conduct and manage the learning process on the basis of the web.

6. WebCT – commercial learning environment used in the Estonian e-University consortium. Further information is available at: <http://webct.com>.

7. IVA – free open source learning environment used in the Estonian e-University and e-Vocational School consortia. The learning environment was created in the Tallinn University. Further information is available at: <http://www.htk.tlu.ee/iva>.

8. Moodle – free open source learning environment used in the Estonian e-University and e-Vocational School consortia. Further information is available at: <http://www.moodle.org>.

9. Creative Commons – copyright system that allows one's works to be shared with others and mark works available on the net under such conditions at which they are usable. Creative Commons licenses can be used for sound, film, picture, texts as well as study materials. Further information is available at: <http://creativecommons.org>.

10. Module-based e-curriculum – curriculum that consists of subject modules that can be passed as in-service training or separately (e.g. as a minor speciality in another curriculum). Learning is web-based.

Members of the Estonian e-University Consortium

1. University of Tartu
2. Tallinn University
3. Tallinn Technical University
4. Estonian University of Life Sciences
5. Estonian Business School
6. Estonian Information Technology College
7. University Nord
8. Audentes International University

Members of the Estonian e-VET Consortium

1. Estonian Maritime Academy
2. Estonian School of Hotel and Tourism Management
3. Haapsalu Vocational Education Centre
4. Ida-Virumaa Vocational Education Centre
5. Kehtna School of Economic and Technology
6. Kuressaare Professional School
7. Luua Forestry School
8. Lääne-Virumaa Professional High School
9. Narva Vocational Centre
10. Olustvere School of Service and Rural Economics
11. Paide Vocational Secondary School
12. Põltsamaa Professional School
13. Pärnu German Technology School
14. Pärnumaa Vocational Education Centre
15. Rakvere Vocational School
16. Räpina Gardening School
17. Estonian Public Service Academy
18. Suuremõisa Technical School
19. Tallinn Construction School
20. Tallinn Kopli Professional School
21. Tallinn Lasnamäe School of Mechanics
22. Tallinn School of Economics
23. Tallinn High School of Healthcare
24. Tallinn Polytechnic School
25. Tallinn Service School
26. Tallinn Higher Technical School
27. Tallinn Industrial Education Centre
28. Tartu Vocational Education Centre
29. Tartu Higher Art School
30. Tartu Art School
31. Tartu Aviation College

32. Tartu High School of Healthcare
33. Türi Technical and Rural Economics School
34. Valgamaa Vocational Education Centre
35. Võrumaa Vocational Education Centre

e-Learning Centres of the Estonian e-Learning Development Centre

1. Kuressaare College
2. Haapsalu College
3. Pärnu College
4. Türi College
5. Narva College
6. Rakvere College
7. Kohtla-Järve College
8. Viljandi Academy of Culture of the University of Tartu
9. Valgamaa Vocational Education Centre
10. Jõgevamaa Central Library

Infrastructure of the Estonian e-Learning Development Centre (September 2006)

The servers of the Estonian e-Learning Development Centre are located in the Tallinn Technical University (Raja 15).

1. Fujitsu-Siemens RX300S2

Name: saturn.e-uni.ee
IP: 193.40.242.117
OS: Gentoo Linux 2005.1
Functionality: HTTP server
- www.e-uni.ee
- conference2006.e-uni.ee
- moodle.e-uni.ee
- secure.e-uni.ee
- www.e-vet.ee
- kursus.e-vet.ee
- http://moodle.e-ope.ee

2. Fujitsu-Siemens RX300S2

Name: mercury.e-uni.ee
IP: 193.40.242.118
OS: Gentoo Linux 2005.1
Functionality: IVA learning environment, thematic networks, newsletter (temporary)
- iva.e-uni.ee
- portaal.e-uni.ee/webct
- portaal.e-uni.ee/moodle
- portaal.e-uni.ee/uudiskiri

3. SunFire V440

Name: malfoy.e-uni.ee

IP: 193.40.242.124
OS: Solaris 10
Functionality: WebCT v4.1
- webct.e-uni.ee

4. SunFire V440

Name: azkaban.e-uni.ee, oracle.e-uni.ee
IP: 193.40.242.123
OS: Solaris 10
Functionality: WebCT v6.0 Campus Edition, Oracle 9 Standard Edition
- webct6.e-uni.ee

5. Fujitsu-Siemens RX300S2

Name: hermione.e-uni.ee
IP: 193.40.242.112
OS: Gentoo Linux 2005.1
Functionality: Backup server (volume: 1.8TB)

6. Codian MCU

Name: codian.e-uni.ee
IP: 193.40.242.122
OS: Gentoo Linux 2005.1
Functionality: Video conference exchange

7. UPS