

## SOLVING ORGANIZATIONAL AND FINANCIAL PROBLEMS OF DISTANCE EDUCATION IN LIE DM NETWORK

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**Abstract.** In the light of technological, economical and social changes, the problems of overall occupation of people and continuous growth of economy become more important and complex. It is universally accepted that continuous development of people's knowledge and skills, investment in education and vocational training are the main factors stimulating the economical and social development of the state. This paper analysis the situation of implementation of distance learning in vocational training system, the organizational and financial problems of distance education and their solving methods.

**Key words:** Distance Learning, Lifelong Learning, Information Communication Technologies, Flexible and Open Education System.

### 1. Introduction

The constitutions of most European countries emphasize the right of all their citizens to learning and good professional training. This right also is declared both in European Union's Charter of Fundamental Rights, 2000 and in other EU documents [1, 2, 3, 4]. The main problem in the implementation of this right is the need of continuous updating of knowledge. Therefore, Memorandum on Lifelong Learning is announced in the EU, where learning, distance learning and information communication technologies (ICT) are recognized as the main tools of such learning.

Active implementation of distance learning in higher education, vocational training systems has to be a key part of both, development of Lithuanian educational system, and adaptation of all the economy to the needs of knowledge economy and information society [5, 6, 7]. Therefore, the development of LieDM network will help to reach general strategic objectives of Lithuanian development – to provide the equal possibilities for all the citizens to use and to develop their abilities, to get a good education which satisfies needs of society and to get the job which fits to such education.

#### The problem

In order to ensure quality of lifelong learning and services of labour market, accessibility of education

and vocational training services to all Lithuanian citizens, to modernize learning environment and to improve the infrastructure of educational system, it is necessary to increase the ICT possibilities in the areas of education, vocational training, science and higher education.

**The objectives and methods.** To overview the development of LieDM network, the situation of implementation of distance learning in Lithuanian higher education and vocational training system, to find out the main problems of this implementation and to suggest their solving methods.

### 2. The goal and purpose of LieDM network

Lithuanian distance education network is founded in consonance with program "Information Technologies for Education and Training (2001-2006)" (further termed as ITMiS) supported by the dictate of Education Minister No 115 for the date of January 30, 2001. The goal of LieDM is to generate and coordinate higher education studies and continuous training system based on information and telecommunication technologies.

The purpose of LieDM is to create better conditions for Lithuanian citizens for lifelong learning not leaving their place of living and job, to help learning centres to disseminate their experience and

knowledge, to create and maintain general-purpose e-learning environment for distance education and regular studies. The services of LieDM network are very important for development of human resources not only in education but also in the other processes of specialization in distant regions.

### 3. Geography of LieDM network

LieDM network is being created on the base of Academic and Research Network of Lithuania LITNET. Until the year 2000 inclusive, around 2,7 million LTL were budgeted from the government in coincidence with projects LieDM and LieDM-2. There were established 2 distance education centres at Kaunas University of Technology and University of Vilnius and 10 distance education classrooms. After starting implementing ITMiS program in 2001, according to LieDM-2 project 2.058 million LTL was budgeted for development of LieDM network and they were used for establishing 1 distance education centre, 5 videoconference mini studios and 6 distance education classrooms (Figure 1).

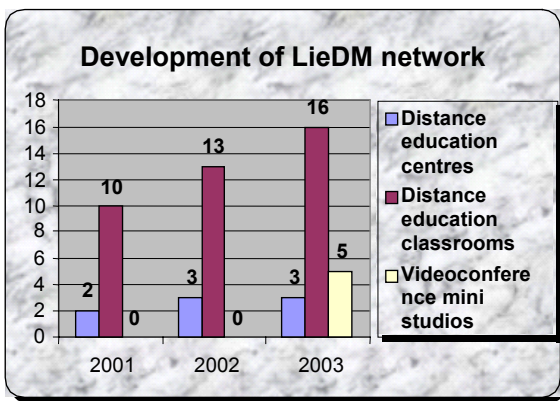


Figure 1. Development of LieDM network 2001-2003

Currently LieDM network consists of 3 distance education centres, 5 videoconference mini studios and 16 distance education classrooms. The network is most developed in higher education institutions. 3 distance education centres, 4 mini studios and 7 distance education classrooms were established in 7 from 15 (47 %) state universities and 1 scientific institute. 5 distance education classrooms and 1 mini studio were established in more than one third of state colleges (in 6 from 15). The LieDM network is least developed in vocational training system. Only in 4 from 86 vocational schools 4 distance education classrooms were established.

On the geographical point of view LieDM network covers almost all Lithuania. But it is better developed in the largest cities of Lithuania, because there are a big number of universities, institutes, colleges as well as students and lectures. There are 2 distance education centres (VU and VGTU), 2 mini studios (MII and Vilnius College) and 2 distance education classrooms

(VU and VGTU) in Vilnius. In Kaunas there is 1 distance education centre (KTU), 3 mini studios (KMU, LZUU, VDU) and 2 distance education classrooms (KTU and VDU). Each of the rest of Lithuanian counties has at least 1-2 LieDM departments.

### 4. Services of LieDM network: e-learning courses, videoconferences

The mission of LieDM network is to ensure life-long learning by increasing variety of services and providing equal learning opportunities to all Lithuanian citizens, despite their place of living, gender, nationality, and providing possibilities to use resources of other international distance education networks through national distance education network.

Various WWW virtual learning environments are used for learning in LieDM network. Currently WebCT is the most popular distance learning environment in Lithuania. About 87% of all distance education courses of LieDM network are designed in this environment. Learning Space and FirstClass environments are also used for distance learning through not so widely spread. About 13% of distance education courses are designed in these environments.

In the year 2001-2003, 392 distance education courses were designed. Most of them are in the areas of informatics (30%), economics (20%) and medicine (14%) (Figure 2). It is important to mark that **only 49 (12% of all DE courses) from 392 courses were budgeted from the Ministry of Education.** The rest of the courses are designed through enthusiastic lectures and teachers or budgeted from international programs. *Such insufficient funding impacts the quality of the courses.* Half of them are either the e-material of the lectures or e-books.

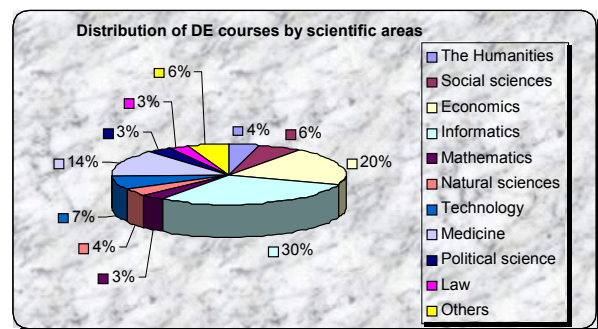


Figure 2. Distribution of DE courses by scientific areas

Moreover, it is important to mark that mostly separate distance education courses on various subjects, but not a whole training programs are designed. Currently there are only **3 full distance learning programs** – master studies “Information technologies” for first and second year students at KTU, interuniversity master program “Open and Distance Learning” and distant master studies “International

*Communication” at University of Vilnius. The reasons are:*

- Insufficient funding for designing distance education courses;
- LieDM network is still in the stage of development of infrastructure and focuses on purchasing hardware.

In the year 2003, **18000 registered users** used e-learning courses of LieDM network (392). Most of them are students and teachers from universities and colleges. Most of learners were from the largest cities of Lithuania – Vilnius, Kaunas, Klaipeda, Siauliai, Panevezys and only about 5% from regions. The main reason of such small percent of learners from regions is low rate of Internet usage at home (in the beginning of 2003 it accounted 6% i.e. 7 times less than the average in the EU); 19% of inhabitants have computer at home. Secondly, in the first half of 2003 every tenth household of urban areas and only every hundredth household of rural areas had access to Internet at home. As the data of Department of Statistics to the Government of the Republic of Lithuania shows, in Lithuania the Internet is mostly used in workplaces. According to the data of I quarter of 2003, 41% of all Internet users use Internet in their workplace, 29% - at home, 26% - in educational institutions and 20% in public Internet access points (such as internet cafes and etc.). And in Lithuania only 24% of all inhabitants of age 15-17 used Internet (the average in EU – more than 50%) [8]. In order to have more learners from regions and rural areas it is necessary to increase the number of internet access points in these areas and to develop IT usage skills.

Interactive Videoconferencing system was developed in order to make studies more interactive. The LieDM Classrooms can be connected with any point of the world using ISDN connection. In the year 2003, 7 courses with 279 students from all Lithuania were delivered using videoconferences.

Moreover, various events such as seminars, conferences and meetings for academic community and general public were transmitted by videoconferences. In 2002 there were more than 30 videoconferences and seminars and this number increased two times and in 2003 – 61. There were videoconferences with the USA, England, Germany, Sweden, Finland, Russia, the Ukraine, Poland, Latvia, Estonia, Turkey, Serbia, Jordan and Ghana. Non-governmental organizations and representatives of private business also noticed the advantages of videoconferences. There were organized 6 information seminars with 385 participants.

## 5. Human resources of LieDM

In 2003 LieDM network consisted of 3 DE centres, 5 videoconference Mini studios and 16 DE Classrooms. Altogether about 70 employees work in LieDM departments. Usually, **2-3 specialists** work in

one department. The functions of these employees usually are administration and technical maintenance of Classrooms and Mini studios. Therefore, there are no human and financial resources for designing DE courses, projects and organizing learning seminars. Statistical data of LieDM departments in small towns and regions reflects it. Only **6-7%** of all DE courses were designed in these departments. Experience of west countries shows, that from 10 to 15 various IT specialists (OS, databases, programmers, web-designers) work in one course designing group. Also action groups of managers and project makers are involved. KTU DE Centre is closest to these rates of west countries. And their results reflect it.

It is important to note that more than 95% of LieDM employees have higher education. Specialists of information technologies (educators and engineers of informatics) and retrained specialists of other subjects (physics, mathematics, engineers and etc) teach DE technologies.

Because of the rapid development of DE technologies, the specialists of this field have to upgrade their knowledge each 4-5 year. Special attention should be drawn to learning seminars and courses for lectures and teachers of various subjects. They should be introduced how to use DE technologies in learning process, how to manage virtual learning environments and modelling programs. LieDM network organizes such training from 2001.

Also the financing for upgrading qualification has to be increased. In the USA and the EU countries from 20 to 40 % of financial resources goes for upgrading qualification [9] (see section 5 Financing of LieDM Network).

## 6. Financing of LieDM Network

In all European countries lifelong learning and e-learning are recognized as one of priorities. This area is financed from the state budget and private capital. In Lithuania the development of LieDM network is implemented in coincidence with investment project “Expansion of Distance Education in Lithuania” (LieDM-2). Implementing this project, the technical equipment for new Mini Studios and Classrooms is purchased. The network activity support is budgeted from ITMiS program resources. Figure 3 and 4 show the dynamics of financing during 2001-2003.

The first stage of LieDM establishment in 2001 focused on the development of technical base. 1 million litas was budgeted for it, while only 350 thousand litas was budgeted for network activity support (Figure 3). In 2002 and 2003 the financing for LieDM network activity support increases. The creation of physical infrastructure of LieDM network is being finished and the main focus is on the services. The biggest part of total funding goes for support and exploitation of videoconferencing network (180 thousands LTL in 2001, 261 thousands LTL in 2002,

266 thousands LTL in 2003), designing DE programs and courses (130.73 thousands LTL in 2001, 235 thousands LTL in 2002, 190 thousands LTL in 2003) and purchasing the licenses for WebCT virtual learning environment (56 thousands LTL in 2002, 81 thousands LTL in 2003) (Figure 4). It is important to stress reasonless low financing for trainings, upgrading staff qualification, future designers of DE courses. Moreover, this financing has a trend to decrease. Currently only 4,53 % of total financing for LieDM network activity support goes for that purpose, and counting the costs for purchasing technical equipment only 1,93 % of total financing remains for it. As the experience of well-developed countries and recommendations of experts of World Bank shows, budget for the development of human resources has to account at least 30% of total budget in order to meet the strategy of creation of knowledge economy in Lithuania. This rate is very similar in Bulgaria and Cyprus, while in Greece this percent reaches 60% [9].

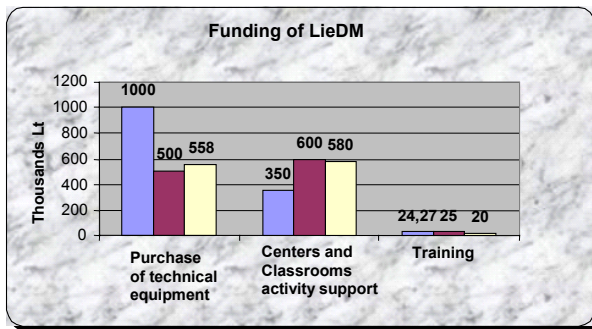


Figure 3

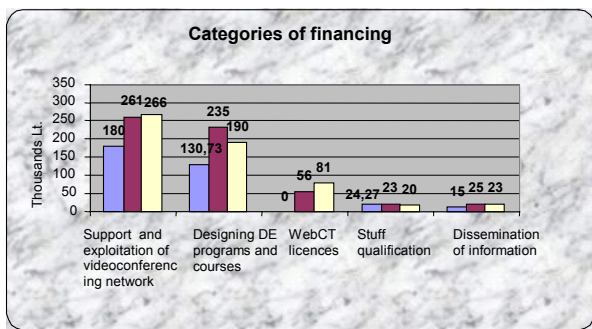


Figure 4

More funding comes from various projects budgeted from international and EU funds (Phare, Socrates, Leonardo da Vinci, Eureka, Framework Programme, United Nations Development Programme, Unesco, EC Small Projects Programme and others – Figure 5). In Lithuanian universities, colleges and professional training schools the projects, budgeted from SOCRATES and Leonardo da Vinci funds, and focused on ICT implementation in education, open and distance learning, ICT usage in education and training of specialists, are always being implemented.

In 2001 LieDM network participated in 10 international projects, in the year 2002 in 12 and in the year 2003 in 8 international projects.

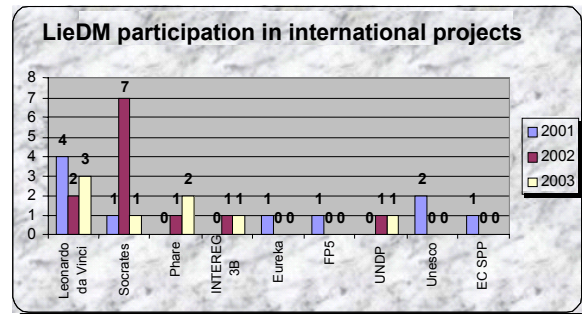


Figure 5. LieDM participation in international projects

In order to get supplementary funding, closer collaboration with enterprises of business and industry in delivering continuous vocational training programs is necessary. Besides of government-funded vocational schools, more than 43% of private companies provide some of vocational training services for their staff and one quarter of them designs distance education courses. In the EU countries this rate reaches 72%. In Lithuania the average number of hours for one learner (41hrs per learner) is one of the best among new members. This rate is better only in Romania. However, the expenditures of employer on designing professional training courses for the staff amounts only 0,8 % of wage budget, while in Estonia this percent is 1,8 %, in Latvia – 1,1% and in the other EU countries even bigger. This is one of the lowest rates among new members [10].

## 7. Conclusions

1. Solving the problem of unemployment, it is necessary to use the experience of the EU in development of formal, non-formal, continuing, vocational training, lifelong learning and implementation of modern distance learning technologies in education.
2. Education ensures development of knowledge society and knowledge-based economy. Therefore, it is necessary to develop open and flexible distance learning system that ensures lifelong learning.
3. In order to ensure equal development of all regions of Lithuania, it is necessary to develop LieDM network in the less developed regions. It is necessary to open at least Internet access points in the rural areas. The representatives of local government should find a funding for establishing DE classrooms.
4. It is necessary to increase a number of employees specializing in designing DE courses in the departments of LieDM. Moreover, the additional financing for this stuff has to come from educational

institutions themselves and the Ministry of Education and Science. Also very important problem is regular upgrading of qualification of DE specialists.

5. In order to ensure high quality services in LieDM network it is necessary to considerably increase financing for development of human resources of LieDM network and support of LieDM distance training classrooms and mini studios.
6. In order to expand a learning market, closer collaboration with representatives of business and industry in delivering continuous vocational training programs is necessary.

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