

Developing Virtual Communities in Lithuania

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Abstract

The paper explores infrastructural, political and market issues in virtual communities development in Lithuania. Information and communication technologies (ICT) centered on the Internet are today widely recognized as one of the driving forces in the transition toward a new economic system. Virtual communities are an important component of an emerging economic system that is powered by ICT, is knowledge-driven, is organized around electronic and organizational networks that generate knowledge which transform industries and markets, and is dependent on dynamic and flexible regulatory public institutions. The development of virtual communities is complex phenomena which require different factors and actions coordination and harmonization.

Keywords

virtual communities, ICT infrastructure, legal framework, market issues

Introduction

Virtual communities are an important component of an emerging economic system that is powered by ICT, is knowledge-driven, is organized around electronic and organizational networks that generate knowledge which transform industries and markets, and is dependent on dynamic and flexible regulatory public institutions. For ICT to diffuse throughout the whole economy in a way that supports virtual community formation, business firms, market conditions, and the culture and institutions of society need to undergo substantial change in a coordinated manner. It is the dynamic interdependence of these conditions that is the source of innovation and value creation in the new knowledge-driven economy. The agenda of research on the dynamics of adoption of new economy practices, innovation, and economic growth, as a result, needs to be expanded beyond the level of the firm. It needs to be built around the dynamic interrelationships between technological transformations, firms' organizational and knowledge-creating capabilities, emerging market and industry structures, and public institutions [Castells, 2000].

Virtual community formation and their development depend on three levels: the level of ICT infrastructure, regulatory environment, and market or civic attitudes toward ICT-enabled market transactions. On each of these levels the observations made are conditioned by the definitional parameters of 'virtual community'. For the purposes of this paper, a virtual community is understood as a set of interwoven relationships built upon shared interests, which satisfies members' needs otherwise unattainable individually [Rafi, etc. 2002]. It must be stressed that a virtual community thus defined refers not only to consumers but also businesses and organizational entities of the public sector.

ICT infrastructure

ICT infrastructure encompasses the ICT framework underpinning the emergence of virtual communities. It refers to computers and Internet usage within, between and across enterprises, governmental bodies and consumers or citizens. The use of ICT constitutes the basic precondition for the emergence of virtual communities. In defining the critical constituencies of virtual communities it is important not to exclude any of the above mentioned parties, because each of them can play a significant role in different types of virtual communities and the significance of their roles depends on the context in which they operate. In this context ICT plays critical enabler role in virtual communities' development.

The extent of computer and Internet use has been increasing rather quickly in Lithuania, though, as in many other new member states of the European Union, the issue of Internet access is still very important. Based on data from the 1st quarter of 2005, the number of people with a PC at home increased; 33.8 percent of people (15-74 years old) in the country indicated that they had a PC at home (cf. the 3rd quarter of 2004 – 28.1 percent); the proportion of people planning to buy a PC during the next 12 months was 14 percent (cf. the 3rd quarter of 2004 – 10.2 percent); the proportion of people with Internet access at home was 13.7 percent in the 1st quarter of 2005 (cf. the 3rd quarter of 2004 – 10.9 percent).

32.4 percent of all citizens between 15 and 74 years of age were using the Internet in the 1st quarter of 2005 (cf. the 3rd quarter of 2004 – 30 percent). Notably the increase in people using the Internet on a regular basis, i.e. at least once a week, is especially rapid - in the 1st quarter of 2005 the proportion of such people was 24.4 percent (cf. the 3rd quarter of 2004 - 18.2 percent).

Mostly Internet was used for communication, search for information, newspapers and magazines to read. Email was used by 75 percent; newspapers and magazines were read or downloaded from the Internet by 70 percent of Internet users. 63 percent of Internet users were searching for information on goods or services. The number of Internet users has increased poorly this year, but the variety of purposes for which the Internet is used has increased – in 2005 the penetration of e-banking reached 30 percent (in 2004 – 23 percent) and of information search regarding goods and services, 63 percent (in 2004 – 52 percent).

The extent of Internet use markedly depends upon age – the biggest proportion of Internet users is among young people: fully 82.5 percent of 15-19 year olds were using the Internet; the proportion of Internet users among 20-29 year olds was 55.1 percent. Note that the increase in Internet use among 15-19 year olds is especially big: during the past half year, use of the Internet in this age group increased by almost 13 percentage points. The percentage of Internet users among 40-49 year olds did not increase as dramatically as that - during the past half year it increased by 4 percentage points. Meanwhile, older people use information technologies little: during the above-mentioned period only 2.4 percent of people older than 60 years were using the Internet. Vast differences in usage of information technologies are noticeable between urban and rural residents. In the 1st quarter of 2005 almost 50 percent of people in cities and towns (with more than 2,000 people) were using computers, as compared with 26 percent in rural areas. The figures for Internet usage were 40 percent and 18 percent, respectively.

The percentage of the Internet users at home is increasing. In the 3rd quarter of 2004, 32.7 percent of the Internet users were using the Internet at home, but during the past half of the year this index increased by almost 7 percentage points and in the 1st quarter of 2005 home became the main place of using the Internet (39.8 percent). The change in the number of people in the country using the Internet at work was not statistically important; this index is currently equal to 39.2 percent. Many of the Internet users use the Internet at school or another institution of education (26.9 percent), in a public place of Internet use (an Internet café, a library) - 7.8 percent.

In spite of the promptly increasing number of the Internet users, we are still below the EU average of this index (47 percent in the 1st quarter of 2004). Therefore, the means of encouraging people to provide themselves with information technologies and the access to the Internet are still very important. An important step in this field was the Law on Amending the Law of the Republic of Lithuania on Personal Income Tax, as passed by the Parliament of the Republic of Lithuania on 15 June 2004, which provided that expenses incurred by a resident during a taxable period for acquiring one unit of hardware and software and/or installation of one Internet access place once per three years could be deducted from the taxable income of such resident.

Expenses for acquisition of software make a substantial portion of computer acquisition expenses; therefore the work performed in the field of creating open source software is of great importance. The newest package of open source office software OpenOffice was localised in 2004, some work was performed to support the earlier localised software from open sources (earlier versions of OpenOffice and Mozilla). The compatibility analysis of open source systems used in state institutions was performed, recommendations for elimination of incompatibilities were prepared. This work was aimed at creating an opportunity for computer users to make use of open source localised and standardised office software. Especially because all the free software is placed on the web and available to every user. Created Lithuanian-localised products are an opportunity for potential users to provide themselves with free software.

Successful introduction of new technologies in Lithuania is also demonstrated by technologies used for providing Internet access. It should be noted that technologies used for providing Internet access differ depending on the service recipient: whether it is a private consumer or another service recipient. Private consumers predominate among subscribers using the Internet via a dial-up line (63.5 percent); xDSL line (68.0 percent); public mobile radio connection network (76.2 percent); wireless communication lines (66.2 percent); cable TV network (97.2 percent); optic lines (89.7 percent); LAN networks (93.9 percent); and PLC or satellite communications (65.9 percent). Meanwhile other service recipients – companies and organisations – predominate among subscribers using the Internet via a leased line (97.9 percent).

In the beginning of 2005, 91.1 percent of industry, trade and services companies and 89.6 percent of service sector companies were using computers at work. 88.7 percent of small business companies (less than 50 employees) were using computers. 98.7 percent of medium-size companies (50-250 employees) and 99.7 percent of large companies (more than 500 employees) were using computers in the beginning of 2005. Comparing to the beginning of 2004, the number of companies using Internet has grown by 5 percent. In the beginning of

2005, 84.6 percent of state industry, trade and services sector companies (92.9 percent of companies having computers) were connected to the Internet (in the beginning of 2004 – 79.8 percent). 82.7 percent of industry, trade and services and 85.3 percent of service sector companies were using Internet service. According to the research data, 99.7 percent of large companies, 97 percent of medium-size companies and 80.8 percent of small companies were using Internet.

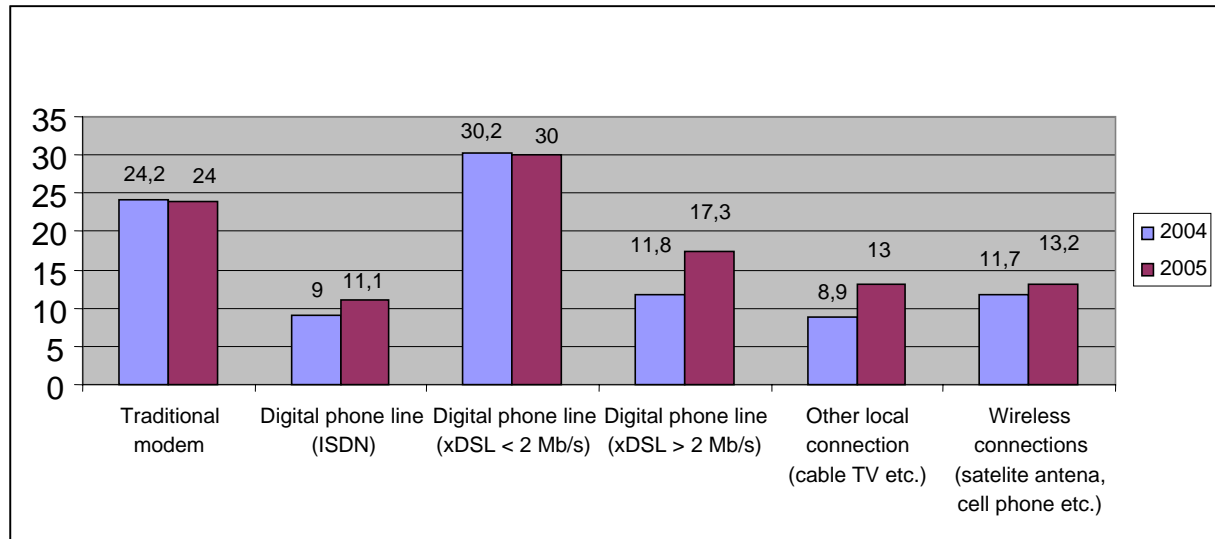


Figure 1. Range of Internet connections, used by business companies

45.4 percent of business companies were connected to the Internet with DSL technologies. In the beginning of 2005, comparing to the same period of 2004, the amount of companies using broadband DSL technologies ($DSL \geq 2\text{ Mb/s}$) increased from 11.8 percent to 17.3 percent. Modem (dial-up technologies) was used by 10 percent of state industry, trade and services sector business companies with 10 or more employees each.

Considering such situation it can be stated that infrastructure development has accelerated in some ways. However, such development tends to be concentrated in only in major towns. To high cost ICT usage shows an imbalance – the business and consumers are prevented to use technologies because of economic/financial considerations and constraints. High prices are one of the reasons that inhibit a broader usage of ICT. This clearly demonstrates the desynchronization towards the technological issues – despite the growing use of technology the use of services (Internet connection) develops too slowly. This relates mainly to consumer sector. Looking from business communities perspectives it might be stated favorable infrastructure preconditions for communities' development.

Legal framework

The Government of the Republic of Lithuania has declared the development of the information society to be a top priority, because creating the conditions needed for the development of an information society is one of the key requirements for the welfare of a modern country. The framework is composed of several interrelated areas of policy, social

and economic development and systematic interactions with government agencies. In this context supporting information society development facilitates virtual communities' development from the in political perspective.

In order to actively contribute to initiatives of the EU members states in development of the knowledge society and the competitive economy, Lithuania prepared the Lithuanian Strategy for the Development of the Information Society which is a planning document for a term of six years, outlining the main aims to be achieved by the country to ensure the development of the information society in Lithuania. The document defines the state's vision and priority directions, determines goals, and also provides for the model of implementation and monitoring.

The strategy, which was approved in 2005, is oriented towards several priorities, first of all People's Competence and Social Cohesion. By this priority it is sought to create conditions for Lithuanian people to acquire knowledge and skills necessary for successful application of information and communications technologies in their daily activities, and to ensure possibilities to make use of them, having in mind equal opportunities and even development of the country. The second priority of the strategy is Modernisation of Public Administration by Making Use of Information and Communications Technologies. As Europe and the rest of the world pays more and more attention to the development of the information society, one of the main factors is the development of public services provided on-line. The main features of the new generation e-government services oriented towards an individual as a client are: the quality of services, simplicity of use, and universal availability. By this priority it is sought to introduce information technologies into the field of public administration by creating e-government, and to increase the efficiency of public administration activities by developing electronically provided services and by ensuring the development of electronic democracy.

Knowledge Economy is the third priority of the strategy, and is intended to encourage economic development based upon knowledge, innovations, science achievements, and information technologies. In developing the knowledge economy, qualified labour becomes especially important; therefore many counties are oriented towards constant improvement of their education systems. It is also necessary to ensure an inviting environment for co-operation between science and business, and for the introduction of innovations in business.

Information technologies are used in Lithuania to foster and spread the Lithuanian culture, to encourage the society's creativity and cultural variety, and to ensure the preservation of the Lithuanian cultural heritage and the Lithuanian language in the global context. As Lithuania is becoming more active in the open dialogue of world cultures, there is a need to take actions to ensure the competitiveness of the national culture and the preservation of the Lithuanian language. Information technologies create new possibilities not only to keep but also to widely spread information about the culture and encourage modern cultural and artistic initiatives; therefore the Lithuanian Culture and the Lithuanian Language are the fourth priority of the Lithuanian Strategy for the Development of the Information Society.

The main aims of the planning documents are directed towards consistent development of the Euro-integration processes, increase of efficiency in the public administration sector, and making conditions favourable for the development of e-business and public e-services. The

set of these documents mainly set's directions of Information society development in Lithuania:

- Means for Implementing the Programme of the Government of the Republic of Lithuania for 2004-2008
- Lithuanian National Concept of Information Society Development
- Lithuanian Strategy for the Development of the Information Society
- Strategy for Implementation of Information and Communication technologies in the Lithuanian Education for 2005–2007
- Programme for the Lithuanian Language in the Information Society for 2000–2006
- Programme of Implementing Provisions of the Lithuanian White Book of Science and Technologies
- Programme for Development of High Technologies
- State Strategy for Security of Information Technologies and the Plan for its Implementation
- Programme for Innovations in Business
- Strategy for Creating the Integral System of State Registers
- National Programme for Social Integration of the Disabled for 2003-2012
- Strategy for Public Administration Development until 2010
- Plan of Means for 2005-2006 for Implementing the Strategy for the Public Administration Development until 2010

Therefore, the means of encouraging people to provide themselves with information technologies and access to the Internet are still very important. An important step in this field was the Law on Amending the Law of the Republic of Lithuania on Personal Income Tax, as passed by the Parliament of the Republic of Lithuania on 15 June 2004, which provides that expenses incurred by a resident during a taxable period for acquiring one unit of hardware and software and/or installation of one Internet access place once per three years can be deducted from taxable income.

From 2002 a private business initiative, “Window to the Future,” has been setting up public Internet access centres. With the collaboration of the Ministry of Internal Affairs 100 public Internet access centres were established in 2003. The efforts of the “Window to the Future” initiative have resulted in 175 Internet access centres in Lithuania during a three year period. Starting with the 1st of June this year, 300 more new public Internet access centres all over Lithuania started their activities. This completed the first stage of implementation of the project “Establishment of Public Internet Access Points in Rural Areas,” funded in accordance with the PHARE 2003 Social-Economic Cohesion Programme.

Public Internet access points were established in most often visited places: libraries, cultural centres, premises of public administration bodies, community centres, etc. The aim was to ensure that rural residents are no more than 8 –10 km from their nearest public Internet access point.

Each newly established point of public Internet access has up to five PC-equipped workstations with Internet access. The funds of the EU PHARE programme have been used for acquisition of technical equipment, furniture, enabling the Internet access and provision of services used for the implementation of the project. All other current expenses will be covered

by the founder of a public Internet access point at its own expense or with supporters' funds. The total funding assigned for the implementation of the project is 3.15 million Euros. Public Internet access points will provide Internet services free of charge, whereas other services will be provided for a minimum set fee. Public Internet access points guarantee people Internet access 40 hours per week, the Internet connection will be paid for with funds assigned for the project for 18 months.

Instructors working at the above points will inform users about available services and training programs, will help people to find and receive services from e-authorities, will monitor the use of PCs and software at Internet access points, and will assist in training rural people in using computers and the Internet. Further, suggestions will be made to rural people and companies how they could use current and forthcoming training courses based upon existing distance education modules, introduced in the nearest future through distance education centres (funded in accordance with the PHARE 2000 Social-Economic Cohesion Programme). It is also intended to prepare training programs and to disseminate them via the Internet.

In order to create still better conditions for people to use the Internet for free, an application has been filed for funding the establishment of public Internet access points from EU structural funds. The implementation of this project would result in the establishment of an additional 400 public Internet access points. Before these important investments were carried out, public libraries were the main place of public Internet access; libraries had more than 200 Internet access points. Now, Lithuania has about 700 centres where Lithuanian people can use the Internet for free.

Taking this into the consideration it must be emphasized the strong political support of information society and virtual communities' development, unless the survey of market issues show the different picture.

Market issues

Unless infrastructure and policy favorable to the emergence of virtual communities development move in tandem, market issues, such as consumers' willingness to use ICT for commercial transaction are likely to compromise the development of virtual communities. The survey "Digital Lithuania" reflects the main inhabitants attitudes [Digital Lithuania, 2001].

Lithuania's consumer and citizen attitudes toward the information society, and hence virtual communities development, is dual in nature. On the one hand, higher use of ICT in everyday economic life and business transactions is associated with a better quality of life and increased efficiency; on the other, there are significant reservations regarding the current situation in the country and government that imply negative views about a future of compromised privacy. This is borne out by recent research. For instance, almost three quarters of all respondents (73.8%) think that the information society is of significant need to *all* Lithuanian citizens, i.e. many Lithuanians follow the *conception of democratic informatization necessity* – they do not connect digital development of Lithuania with interest of specific social groups. The education and age of people have statistically significant impact on such respondents'

opinion: people of retirement age, as well as not having high education mostly have chosen variant “it is difficult to say” and the most rare – “to all citizens of Lithuania” [Digital Lithuania, 2001].

The survey carried out between Lithuania citizens aimed to analyze Lithuania citizens' attitudes towards virtual communities. This was preliminary survey, carried out in Kaunas city. 110 respondents participated in the survey. The respondents which use Internet in their activity were considered as target for the survey.

First of all respondents were asked if they consider their self part of virtual communities. Most of respondents (60 percents) stated they are not. Only 13 percents stated they are members of virtual communities. 27 percents, answered don't know. This imply several issues – these respondent's don't consider their activities as virtual community related activities or have not enough knowledge about virtual communities.

Responding to the question if virtual communities exist, most respondent agreed about it (83 percent).

The main barriers for getting involved in virtual communities are lack of time (10 percent), not interesting (20 percent), there is no sense (42 percent), there is no benefits (15 percent) and other reasons (13 percent).

Analyzing respondent opinions about preconditions for virtual communities' development it must be stated 67 percents respondents mentioned critical members number as important reason of communities appearance, 38 percent mentioned community members experience. Expressing views about members activities within virtual community 61 percent sated being member means active participation, 23 percents mentioned members might be not very active and 16 percents didn't had opinion towards this point.

The important factors joining community members are interesting information (73 percent) and business interests (66 percent).

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Kaunas eRegion initiative case

One of the examples of information society and virtual communities' development can be mentioned Kaunas eRegion project. The feasibility study of Kaunas eRegion was prepared on purpose to determine and summarize SWOT analysis of Kaunas eRegion in different sectors. It involved 5 sectors- public administration, communities, education, health, business and innovation sectors. Every part of the study described general situation of involved sector, analyses different kinds of legislation and documents, concerning information society development, that were adopted by the Parliament and the Government of Republic of Lithuania. Regional statistical data are very poor; therefore questionnaire method and expert evaluation method were used in order to evaluate the condition in the region. Main information sources were the web pages and issues of Information Society Development Committee under the Government of Republic of Lithuania, Open Society Fund Lithuania, Ministry of Economy, Ministry of Education, Ministry of Health care, World bank report "Lithuania. Knowledge economy development (2003)", Institute of Business strategy, Chamber of Commerce, Industry and Craft. The questionnaire method was used in municipalities and wardens of Kaunas County.

The programme is implemented by six independent subprogrammes, which cooperate with each other and various other players:

- Education and skills: Make sure that all the citizens have skills, access and motivation to fully utilise Information society services. Schools should be utilise eLearning possibilities whenever it is appropriate for learning and instruction
- eMunicipality: Public services should be provided via multichannel approach and when appropriate together with private sector. The aim is quality and cost effective service production.
- eDemocracy: Strengthen democratically processes via providing public decision process open via Internet and increase interactivity between decision makers and citizens.
- eHealth: Improve health care and making it more cost/effective utilising ICT in all level of healthcare system.
- Business and Innovation: Improve Information society business skills especially among SME-companies and create ecosystem for support innovations.
- eInfra: Create infrastructure which supports information society development. It must be reliable, easy to access, speedy and low cost.

These subprogrammes relates to different groups or virtual communities establishment in order to facilitate information society development in Kaunas region.

Conclusions

The analysis of main factors affecting virtual communities' development presents several positive changes towards the development. Yet despite these changes the real situation shows that Lithuania is in the early stages of virtual communities' establishment (especially in the business sector). The divide between different factors positive influence and reality implies what missing factors cause such situation. The current situation implies that the critical factors that could drive the formation of virtual communities are missing a framework of interaction.

The means aimed to strengthen and implement each of the factors should be facilitated and implemented in a harmonized and coordinated way. The implementation as well depends on different government levels of decision-making– national, regional and local. Actions taken to facilitate virtual communities' development should be harmonized and coordinated between these bodies. The future of virtual communities depends heavily on coordination of policy actions on each of these levels, because the lack of coordination results in disjointed and incomplete stimulation of virtual communities' development. The notable example can be mentioned Kaunas eRegion project, which in cooperation with Tampere city seeks to establish and facilitate six virtual communities development.

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