

## INFORMATION SOCIETY AND QUALITY OF LIFE

**Antanas Keras**

**Valerijus Keras**

*Mykolas Romeris University*

### Abstract

The key objective of the Long -Term Development Strategy of the Republic of Lithuania, as formulated in this Strategy is to create an environment for the development of the state's material and spiritual welfare that is generally described as knowledge-society, secure society and competitive society. While implementing these objectives it is crucial to do the best in order the country's quality of life would rise.

Recently, in the European Union considerable attention has been devoted to the enhancement of social solidarity. An importance of social solidarity has already been emphasized in the Lisbon Strategy. If there is no social solidarity, the fields of social tension inevitably occur. Quality of life makes a rather considerable influence on the assurance of social solidarity.

Consequently, an investigation of the quality of life proves to be an unquestionably topical issue.

The quality of life to a large extent depends on the country's economical and social state. Nevertheless, at the current societal development stage, it also depends on the implementation and mastering of the new technologies, information and knowledge society development. Modern information and communication technologies and, first of all, the global computer network Internet has created preconditions and conditions to establish the information society. Further development of information and communication technologies is unquestionably directly affecting the development of information society, and at the same time makes a considerable contribution to the development of the country's or region's economy, is directly making a strong impact on it. At the same time it is also indirectly affecting the quality of life.

This paper aims at analysing of the indices that characterise the quality of life and the indices that characterise the development of information society – for Lithuania and separate countries of various development level. At the same token, dynamics of these indices, their objective growth for Lithuania and objective dynamics for some chosen countries should be highlighted.

### Keywords:

Quality of life, information society, development, technologies.

### Introduction

While Lithuania was integrating into the European Union, it was important to evaluate strategic provisions of the European Union. That was done in preparing the long-term development strategy of the State. The long-term development strategy of the State was approved by the resolution of 12 November 2002 of the Seimas (Parliament) of the Republic of Lithuania.

The key objective of the long-term development strategy as formulated in this strategy is to create an environment for the development of the state's material and spiritual welfare that is generally described as knowledge-society, secure society and competitive society. It is indicated in the resolution that in approving this strategy the conclusions of the Lisbon European Summit are taken into consideration. It was stated in the mentioned Conclusions that the economy of the European Union by 2010 has to become the most dynamic, most

competitive, knowledge-based, additionally, universal occupation has to be achieved: “**The European social model has to be modernised, investment has to be made in people as well as an active welfare's state has to be created.** People happen to be the greatest European value and the key objective of the European Union policy. Investment in people and the creation of an active and dynamic welfare's state will be substantial in ensuring Europe's place in a knowledge-based economy and seeking that an emergence of this new economy would not sharpen such social problems as unemployment, social exclusion and poverty”.

While implementing these objectives it is crucial to do the best in order the country's quality of life would rise. Consequently, an investigation of the quality of life proves to be an unquestionably topical issue.

The quality of life to a large extent depends on the country's economical and social state. Nevertheless, at the current societal development stage, it also depends on the

implementation and mastering of the new technologies, information and knowledge society development.

Contemporary information and communication technologies (ICT) and, first of all, the global computer network Internet has created preconditions and conditions to establish the information society (IS). Further development of ICT is unquestionably directly affecting the development of IS, and at the same time makes a considerable contribution to the development of the country's or region's economy, is directly making a strong impact on it. At the same time it is also indirectly affecting the quality of life (QL) (Quality of Life – QL).

The Commission in 2005 proposes a new **strategic framework**, “**i2010 – European Information Society for growth and employment**”, **laying out broad policy orientations**. It promotes an open and competitive digital economy and emphasises ICT as a driver of **inclusion and quality of life**.

As it is noted in the strategy **i2010**, Information and communication technologies are a powerful driver of growth and employment. A quarter of EU GDP growth and 40% of productivity growth are due to ICT. Differences in economic performances between industrialised countries are largely explained by the level of ICT investment, research, and use, and by the competitiveness of information society and media industries. ICT services, skills, media and content are a growing part of the economy and society.

The strategy **i2010** have significantly contributed to developing information society in Lithuania.

In the scientific work (A.Keras, V.Keras, 2008) were analysed connections of Gross domestic product (GDP) with information society development index and index dynamics of Lithuanian information society from 2000 to 2007.

This paper aims at analysing of the indices that characterise the development of information society and indices that characterise the quality of life – for Lithuania and separate countries of various development

level. At the same token, dynamics of these indices, their objective growth for Lithuania and objective dynamics for some chosen countries should be highlighted.

### Development of the Information Society in Lithuania

Lithuania join in EU in 2004. We will analyse further the indexes that characterise the development of the Lithuanian information society over the last five years (from 2004 to 2008).

We also will analyse index of the development of information society within other countries' context. Integrated indexes of the development of the information society are necessary in order to have a such a comparative analysis possible. One of such indexes – Digital Opportunity Index (DOI).

Digital Opportunity Index (DOI) has been designed to as a tool for tracking progress in bridging the digital divide and implementation of the outcomes of the World Summit on the Information Society (WSIS). As such, it provides a powerful policy tool for exploring the global and regional trends in infrastructure, opportunity and usage that are shaping Information Society (WISR 2007).

General index DOI is measured by scores from zero to one. Index DOI score can never be less than zero and bigger than one.

Index DOI size is presented in the Table 1 for our neighbour states and for Ireland for 2004/2005 and 2005/2006 years. This table also contains ranks in Europe and World ranks (WISR 2006, WISR 2007).

As we can see from the Table 1, index DOI of the development of the information society in Lithuania among our neighbour states and Ireland for 2004/2005 is quite fine – we find ourselves after Ireland. Lithuania's (DOI=0.56) rank in Europe is 20 and World rank is 32. Latvia occupies 30st place in Europe and 48st place in the World.

**Table 1. Digital Opportunity Index (DOI) for 2004/2005 and 2005/2006**

Rank in Europe 2004/2005	Rank in Europe 2005/2006	Country	DOI 2004/2005	DOI 2005/2006	World Rank 2004/2005	World Rank 2005/2006
1	1	Denmark	0.71	0.76	3	3
3	4	Sweden	0.69	0.70	6	9
5	7	Norway	0.67	0.69	8	12
8	6	Finland	0.64	0.69	17	11
11	14	Estonia	0.63	0.65	20	24
19	18	Ireland	0.58	0.61	31	31
<b>20</b>	<b>20</b>	<b>Lithuania</b>	<b>0.56</b>	<b>0.61</b>	<b>32</b>	<b>33</b>
24	33	Poland	0.52	0.51	39	53
30	26	Latvia	0.49	0.54	48	46
33	31	Russia	0.45	0.52	60	51
37	38	Belarus	0.41	0.45	76	78

Denmark and Sweden have gained remarkable results. Denmark's (DOI=0.71) rank in Europe is 1 and World rank is 3. Fine results have gained Estonia (DOI=0.63) - rank in Europe is 11 and World rank is 20.

Index DOI for 2005/2006 years increased for all countries, except Poland. Lithuania's rank in Europe is the same, DOI increased from 0.56 to 0.61.

There are some changes of rank per year – Norway's rank in Europe decreased from 5 to 7. Finland's rank in Europe increased from 8 to 6 and remarkable increased Finland's World rank from 17 to 11. Estonia's rank in Europe decreased from 11 to 14.

Poland's rank remarkable decreased - in Europe from 24 to 33 and World rank from 39 to 53. Also decreased Poland's index DOI – from DOI = 0.52 to DOI = 0.51.

Over the last five years (2004-2008) telecommunication networks in Lithuania were successfully developing. An academic network Litnet was developing with a great success. Litnet has been a member of the European

academic network GEANT since 2004. Broadband computer network SVDPT of the state institutions and rural area information technology broadband network RAIN were successfully designed.

In the Table 2 some important indexes that characterise the development of informatin society from 2004 to 2008 are pointed out.

All indexes increased. Number of mobile phone subscribers per 100 inhabitants increased from 61.0 to 146.2. In this area we have gained remarkable results - Lithuania's World rank of mobile phone is 2.

Percent of all households owned personal computers increased from 25.0 to 48.0.

Percent of all households had an access to the Internet at home increased from 10.6 to 47.1 (for 4.44 times).

Percent of households had an access to the Internet at home (Rural areas) increased prominently - enlargement from 2.0 to 32.9 (enlargement for 16.45 times). These results are very important and will help to turn the digital divide in Lithuania into digital opportunity.

**Table 2. Development of the Lithuanian information society**

	2004	2005	2006	2007	2008	Enlargement, times
Number of mobile phone subscribers per 100 inhabitants	61.0	89.1	127.9	139.4	146.2	2.40
Number of main telephone lines per 100 inhabitants	23.9	23.9	23.5	23.4	23.7	0.99
Percent of all households owned personal computers	25.0	29.0	36.5	42.0	48.0	1.92
Percent of households owned personal computers (Urban areas)	32.4	36.4	46.9	52.5	54.1	1.67
Percent of households owned personal computers (Rural areas)	11.2	13.5	17.9	23.6	34.5	3.08
Percent of all households had an access to the Internet at home	10.6	14.4	31.7	40.3	47.1	4.44
Percent of households had an access to the Internet at home (Urban areas)	15.2	19.6	40.2	50.4	53.5	3.52
Percent of households had an access to the Internet at home (Rural areas)	2.0	3.6	16.4	22.6	32.9	16.45
Computer usage in enterprises	89.7	91.7	91.7	90.5	94.8	1.06
Internet usage in enterprises	79.8	85.2	87.5	88.4	92.7	1.16

### Quality of Life

Recently, in the European Union considerable attention has been devoted to the enhancement of social solidarity. An importance of social solidarity has already been emphasized in the Lisbon Strategy. If there is no social solidarity, the fields of social tension inevitably occur. **Quality of life** makes a rather considerable influence on the assurance of social solidarity.

Quality of life is a crucial factor. It evidently shows how strong diverse fields of social solidarity as well as contradictions are. If allowed proportions of quality of life will be breached, it can impede the evolution of the democracy-based society. The neglect of the problems related to people development level may

create fundamental preconditions for order disturbance, upheaval, illegal activity, various conflicts, etc.

The Quality of life can be measured by Human Development Index (HDI). The HDI provides a composite measure of three dimensions of human development: living a long and healthy life, being educated and having a decent standard of living (Human Development Report 2007/2008). HDI, provided it is high, reflects the country's high life level as well as reflects sufficiently good preconditions for social cohesion and even sustainable development. However, if it happens to be low, it can pose the whole range of problems. To be more precise, it is not a low HDI that causes the mentioned problems, it just reflects the situation in the country or region which

in turn may pose such problems. It is bad if HDI is low, but it is worse if there are great differences by HDI inside the country among separate inhabitants' groups or layers. All this can trigger instability inside the country's life, social tensions inside the country, etc.

There is one more sphere where some unwanted phenomena may occur, these are the populists' marches against common election by making promises to their electors that they will bring down the mountains, will provide their electors with anything they desire. Thus, by taking advantage of the situation, dissatisfaction of certain part of people regarding insufficiently high quality of life, populists attempt to penetrate into one or other level of governance and often they succeed. On the whole, the populists' "marches", their success in political ratings with the help of the means of media, their success at the elections – of the municipalities, of the Seimas, as well as of the President (this success is partly due to low citizens' life level, and partly due to low civil consciousness level), is an attention-worth matter and the rise of the life level would unquestionably have positive influence on the reduction of such "success". It is essential to remember that having penetrated into the governance, populists, as a rule, immediately forget about their decent promises.

If the life level in the country is high enough and there are no glaring differences among various inhabitants' groups, then the populists will have less "chances", if they will have at all. If the differences are big, then the populists' "marches" may create preconditions for instable social and even political situation in the country.

It is crucial that an objective information about the country's achievements, its life level indices in comparison with other countries of similar or higher development level would be accessible to the ordinary country's resident, in a language understandable to him/her.

Moreover, it could be noted that if the country's quality of life becomes higher and at the same time it is likely that social solidarity of the inhabitants becomes bigger, then "speculations" will fail.

Nowadays, quality of life is perceived as an essential integrated characteristics. It reveals basic welfare preconditions both to the whole state's extent and, taken separately, successful human development.

It can also be adapted for the evaluation of the country's social, economical or technical level and its future development strategy.

In the table as provided below (Table 3) HDI dynamics from 1990 to 2005 are pointed out. We analysed Index HDI for the same group countries (11 countries) as in Table 1.

Lithuania according to HDI is in the 43th places among 177 world countries. This result is quite respectable. Lithuania's index HDI increased 4.23%. Lithuania is in the first group of world countries - "High human development" countries group (HDR 2007/2008). In this group were 70 countries, which index HDI = 0.8 or over 0.8.

When Lithuania's economy was in the transition period from planning economic to market economy, index HDI hard decreased from 0.827 in 1990 to HDI = 0.791 in 1995. But after that economy increased and index increased to HDI = 0.862 in 2005.

Index HDI from 1990 to 2005 increased for all eleven countries from Table 3, except Russia. Russia's index HDI decreases 1.6 %. Belarus has index HDI = 0.804 and it increased 1.77 %.

Scandinavian countries have fine results – Norway's HDI= 0.968 (2th place in the world), Sweden's HDI= 0.956 (6th place in the world).

Ireland gain quite fine result – HDI = 0.959, it's HDI increased 9.6 %. Ireland according to HDI is in the high 5th places among 177 world countries.

**Table 3. Human Development Index (HDI) for 1990 – 2005**

HDI rank 2000	HDI rank 2005	Country	HDI 1990	HDI 1995	HDI 2000	HDI 2005	Enlargement, percent
1	2	Norway	0.913	0.938	0.958	0.968	6.02
18	5	Ireland	0.875	0.898	0.931	0.959	9.6
2	6	Sweden	0.904	0.935	0.952	0.956	5.75
10	11	Finland	0.906	0.918	0.940	0.952	5.07
14	14	Denmark	0.898	0.916	0.935	0.949	5.68
37	37	Poland	0.806	0.822	0.852	0.870	7.94
<b>49</b>	<b>43</b>	<b>Lithuania</b>	<b>0.827</b>	<b>0.791</b>	<b>0.831</b>	<b>0.862</b>	<b>4.23</b>
42	44	Estonia	0.813	0.792	0.829	0.860	5.78
53	45	Latvia	0.804	0.771	0.817	0.855	6.34
56	64	Belarus	0.790	0.755	0.778	0.804	1.77
60	67	Russia	0.815	0.771	0.782	0.802	-1.6

As we emphasized before, Lithuania's quality of life index HDI = 0.862 is quite decent. But there are some problems in the field of poverty and social exclusion. One of problems - at risk of poverty rate in Lithuania was too high - 19.1 % in 2007. It may create preconditions for order disturbance, various conflicts. Another problem – there are large differences of Gross domestic product by county. GDP is index, which partly characterised quality of life.

In the Table 4 Gross domestic product (GDP) per capita are pointed out.

There are marked differences of GDP between counties. GDP total by country (GDP = 29.1) largely exceed GDP by Tauragės county (GDP = 13.7), which

increased 48.9 % from 2004 to 2007, nevertheless it is insufficient. Tauragės county is at the borderline with Russia. Low level of quality of life can instigate illegal activity, first of all - contraband. Such illegal activity nowadays often occurs in the borderline regions, such as Tauragės county.

Marijampolės (GDP = 17.5) and Alytaus (GDP = 19.1) counties are also at the borderline with Russia, but they exceed the GDP of Tauragės county and there can occur probably less illegal activity.

Klaipėdos (GDP = 29.8) county exceed the GDP not only of Tauragės county, but also GDP total by country, and problems of the borderline region can be there less dangerous.

**Table 4. GDP per capita by county and total by country (LTL thous)**

	Total	Alytaus	Kauno	Klaipėdos	Marijampolės	Panevėžis	Šiauliai	Tauragės	Telsiai	Utenos	Vilniaus
<b>2004</b>	18.2	12.7	17.3	18.7	11.6	15.2	13.8	9.2	16.1	15.9	26.8
<b>2007</b>	29.1	19.1	28.0	29.8	17.5	20.4	21.0	13.7	24.3	22.7	45.0

Ignorance of life quality factors is related to an active habitants' emigration. It impedes further country's development. This in turn impels changes into the worsen side of science, education, health protection, culture and various other spheres of a contemporary social life. Eventually, relationship fields of an increased social tension may be highlighted here.

One more sphere as provoking potential "social instability" – it is what a part of the media is pretty often doing, in particular, that part which is not distinguished for its impartiality and, first of all, is chasing cheap sensations in order to guarantee a bigger attention of less educated readers and at the same time to maintain possibly bigger circulation. After all, some part of the media is successfully "speculating" by resonant headlines about that is "bad", "very bad", "very very bad" and by having read such headlines it seems that Lithuania must have "sunk" or "fallen into pieces" a long time ago, nevertheless, not only does it stand but it is also rather successfully going further in accordance with many objective indices. The part of the media very quickly proclaims the information on what is bad in our country (sometimes subjective and sometime objective information), however, it is frequently forgotten to spread the information about what is good, about progressive development tendencies and achievements... Such activity format of some part of the media makes also an influence on the country's inhabitants' mood. The achievements in a great deal of spheres in Lithuania are frequently being assessed more positively by foreign experts than by a considerable part of the Lithuanian people.

It is crucial that an objective information about the country's achievements, its life level indices in comparison with other countries of similar or higher development level would be accessible to the ordinary country's resident, in a language understandable to him/her.

Moreover, it could be noted that if the country's quality of life becomes higher and at the same time it is likely that social solidarity of the inhabitants becomes bigger, then "speculations" will fail.

## Conclusions

1. Lithuania has made serious progress in developing information society since country was entered in the European Union - from 2004. All indexes that characterise the development of the Lithuanian information society noticeably increased.

2. Telecommunication networks in Lithuania were successfully developing. Percent of all households had an access to the Internet at home increased more than four times. Percent of households had an access to the Internet at home (Rural areas) increased prominently – more than 16 times. These results will help to turn the digital divide in Lithuania into digital opportunity.

3. Index DOI of the development of the information society in Lithuania (DOI=0.56) among our neighbour states and Ireland is quite fine – we find ourselves after Ireland and our rank in Europe is 20 and World rank is 32. After one year, in 2005/2006, Lithuania's rank in Europe is the same and DOI increased from 0.56 to 0.61.

4. Lithuania's quality of life index HDI = 0.862 is quite decent. But there are some problems in the field of poverty and social exclusion. One of problems - at risk of poverty rate in Lithuania was too high - 19.1 % in 2007.

5. Another problem – there are large differences of Gross domestic product by county. GDP is index, which partly characterised quality of life. Consequently, low level of quality of life can instigate illegal activity, first of all at the borderline with Russia - contraband.

### References

- Valstybės ilgalaikės raidos strategija. Vilnius, 2002 – Patvirtinta Lietuvos Respublikos Seimo 2002 m. lapkričio 12 d. nutarimu Nr. IX-1187.
- i2010-Europos informacinė visuomenė augimui ir užimtumui skatinti. Briuselis, 1.6.2005 KOM(2005) 229 galutinis. On line: [http://ec.europa.eu/information\\_society/eeurope/i2010/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm)
- Keras A., Keras V. Development of information society in the context of growing GDP. European integration studies, 2008, Nr.2, 46-52 p.
- World Information Society Report 2007. Beyond WSIS. On line: <http://www.itu.int/osg/spu/publications/worldinformationsociety/2007/report.html>
- World Information Society Report 2006. On line: <http://www.itu.int/osg/spu/publications/worldinformationsociety/2006/wisr-web.pdf>
- Informacinės technologijos Lietuvoje, 2007. Statistikos departamentas prie Lietuvos Respublikos Vyriausybės. Vilnius, 2007.
- Informacinės technologijos Lietuvoje, 2008. Statistikos departamentas prie Lietuvos Respublikos Vyriausybės. Vilnius, 2008.
- Human Development Report 2007/2008. On line: [http://hdr.undp.org/en/media/hdr\\_20072008\\_en\\_complete.pdf](http://hdr.undp.org/en/media/hdr_20072008_en_complete.pdf)
- Human Development Report 2006. On line: <http://hdr.undp.org/en/media/HDR06-complete.pdf>
- Castells M. The rise of the Network Society. Second Edition. Blackwell Publishers, 2000.
- i2010. 2007 m. metinė informacinės visuomenės ataskaita. Briuselis, 30.3.2007 KOM(2007) 146 galutinis. On line: [http://ec.europa.eu/information\\_society/eeurope/i2010/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm)
- Lietuvos informacinės visuomenės plėtros strategija. Vilnius, 2005 – Patvirtinta Lietuvos Respublikos Vyriausybės 2005 m. birželio 8 d. nutarimu Nr. 625.
- Nacionalinė Lisabonos strategijos įgyvendinimo programa. Vilnius, 2005 – Patvirtinta Lietuvos Respublikos Vyriausybės 2005 m. lapkričio 22 d. nutarimu Nr. 1270.
- Laudon, Kenneth C., Laudon, Jane P. Essentials of management information systems. 7th ed. Pearson: Prentice Hall, 2007.
- Online Availability of Public Services: How is Europe Progressing? Web Based Survey on Electronic Public Services Report of the 6th Measurement, June 2006, Capgemini. On line: [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/benchmarking/online\\_availability\\_2006.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/online_availability_2006.pdf)
- Preparing Europe's digital future i2010 Mid – Term Review. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM (2008) 199. On line: <http://ec.europa.eu/i2010>
- Communication to the spring Europe Council. Working together for growth and jobs.
- A new start for the Lisbon Strategy. Brussels, 2.2.2005. COM (2005) 24 final. On line: [http://ec.europa.eu/growthandjobs/pdf/COM2005\\_024\\_en.pdf](http://ec.europa.eu/growthandjobs/pdf/COM2005_024_en.pdf)
- The User Challenge Benchmarking the Supply of Online Public Services. 7th measurement/ September 2007. Prepared by Capgemini
- Viešųjų paslaugų, teikiamų informacinėmis technologijomis, esamos būklės analizė 2007. Vidaus reikalų ministerija, BgjConsulting.
- Lietuvos plačiajuosčio ryšio infrastruktūros 2005-2010 metų plėtros strategija. Patvirtinta Lietuvos Respublikos Vyriausybės 2005 lapkričio 16 d. nutarimu Nr. 1231.

The article has been reviewed.

Received in March, 2009; accepted in April, 2009.