MASARYK UNIVERSITY IN BRNO

Faculty of Social Studies
Department of Sociology

Digital Divide in the Information Society
Innovative, dynamic and excluding Europe?

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Tomáš Punar 65575
punar@mail.muni.cz

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Introduction

This paper[1] deals with concept of information society and phenomenon called digital divide. Because of penetration information and communication technologies (ICTs) into society the concept of information society become very significant for developed countries like European countries are. My research question is if European Union is innovative and dynamic[2] in the sense of developing of information society. I use European documents, statistic and case analyses of the Czech Republic to find the answer. There is also close connection between information society and phenomenon digital divide. In the world of technologies there are people with no access or/and no skills to fully participate on information society. That is why I put another question if European Union is excluding[3] some people or groups in the sense of digital division. Again I use European and Czech statistics to find the answer.

Information Society as a concept

Information society is a concept that responds to the expansion and ubiquity of information. This expansion was strongly supported by spreading of ICT which allow work with great amount of information in faster time than ever before. The term has been in use since the 1970s, but has gained in popularity and is now widely used in social and political policy.

If we talk about information society we can find six analytically separate definitional criteria used by commentators on the information society [Scott, Marshall, 2005]. First and the most common definition deal with ICTs. Technologies both define and create the information society in this point of view. Economic approach uses the term information economy to describe a situation in which information industries command the major proportion of GNP. Occupational approach is most closely associated with Daniel Bell's theory of post-industrialism. Bell's book The Coming of Post-Industrial Society [1973] delineates an information society as one in which most jobs are informational (like lawyers, teachers, researches, etc.). Spatial definition stress is on effects on the organization of time and space, as well as on other relations, allowing real-time communication on a planetary scale. The one who discussed this topic was Manuel Castells in his trilogy The Information Age [1996–8] where he used the term network society for that. There is also cultural definition which is based on the growth of symbols and signs over recent decades. Finally theory approach suggests that an information society is one in which theoretical knowledge is dominant.

If we will think about those six analytically separate definitional criteria we will find they work together in current modern society. We will also find that all of them will not work without presence of technology (ICTs). Information society is based on historical development of capitalism and industrial society. This development has been achieved thanks to penetration and use of ICTs in the society. If we focus on different countries we can see that penetration of technologies is not the same. Also level of development of information society is not same in those countries. That is why most of them prepare plans, national programs, or support social programs which help to expand information society in the

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[1] This paper was done for purposes of international course Challenges of a new Europe held in Dubrovnik, spring, 2008.

[2] Innovation and dynamic are two of the dichotomies presented during the course Challenges of a new Europe. I work with them in the same way and compare if there is innovation or stagnation and dynamic development or freeze.

[3] There are many definitions of exclusion. I define exclusion in accordance with Lister [2004] as politically used term labeling marginalized groups.

country. They want to be successful in global economy. They want to be innovative and dynamic countries. Is it also the case of the EU?

In the following chapter I'm going to analyze current policy and plans of European Union for pushing forward information society. I will also mention one concrete case of the European country – Czech Republic. Then I will discuss unintended consequences for society which are coming with those social actions – primary and secondary digital divide.

Information Society and European Union

The vision of development of European Union till the year 2010 was planned during Lisbon summit. So called Lisbon Strategy started in the year 2000. The main goal for EU was formulated like this: "The most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment by 2010." [Kesner-Škreb, 2007: 447].

This strategy comprises three segments [Kesner-Škreb, 2007]:

1) The economic segment, in which a transition to a competitive, dynamic and knowledge-based economy is being prepared. The emphasis is placed on the need for constant readjustment to changes in the information society, and on fostering research and development.
2) The social segment is aimed at the modernization of the European social model. This is to be achieved by investing in human resources and by the fight against social exclusion. Member states are expected to invest in education and the acquisition of qualifications, and to carry out an active employment policy to smooth the way towards a knowledge-based society.
3) The ecological segment that was subsequently adopted at the meeting of the European Council in Göteborg in June 2001 reflects the necessity for economic growth to be harmonized with the rational use of natural resources.

Two points are clear from this statement. There is strong support for development information society (knowledge-based society is more or less the same term) and local governments are responsible for achieving goals of this strategy. Moreover in strategy you can find specification of a wider and more effective use of new information technologies.

Summit was followed by Action plan eEurope 2005. Afterwards, whole strategy was simplified and re-launched in 2005, because the Commission was disappointed from results. Current document which define vision of development of European Union as information society is called i2010 Initiative and is the key element of Lisbon strategy. What does it support? There are three main aims [i2010 Initiative, 2005]:

- To create a Single European Information Space, which promotes an open and competitive internal market for information society and media services,
- To strengthen innovation and investment in ICT research,
- To support inclusion, better public services and quality of life through the use of ICT.

It's clear that information society is not out of the guideline. And again there is very strong accent on ICTs. During last years the main strategy was followed by many documents with

letter “e” at the beginning. This mysterious letter has simple meaning – electronic. What documents are we talking about?

For example it is e-Health action plan [e-Health..., 2004] which describes the application of ICTs across the whole range of functions that affect the health sector. The goal of the document is to develop personalised health systems for patients and citizens. „Examples include health information networks, electronic health records, telemedicine services, personal wearable and portable communicable systems, health portals, and many other information and communication technology-based tools assisting prevention, diagnosis, treatment, health monitoring, and lifestyle management [e-Health..., 2004: 4].

Another plans which can affect all the EU citizens are those in segment called e-government which has special section at EU web portal [e-government, online]. And again e-Government is about using the tools and systems made possible by ICTs to provide better public services to citizens and businesses. What we can expect in this area? For example electronic voting in public issues, dealing with public services trough internet like request for any king of register statement or confirmation.

The big issue, which mainly affect university students now, but is more and more spread trough whole education system and lifelong learning is e-learning. Also in this widespread area has EU its strategy in many documents, programs, funds and actions. In eLearning Initiative and Action Plan [e-learning..., 2001] we can find steps like encouraging the development of new virtual campuses as a new model of European universities or for European exchange and sharing schemes (virtual mobility). There is also objective to strengthen and develop networking among schools trough ICTs and using them at schools.

In previous chapter I explained main features of the concept of information society and made it clear that this society is based on penetration of ICTs. In this chapter I provided overview of European documents which cover strategies of development of the Union. Those documents show clearly that there is a big effort to develop information society. Of course there can be a great gap between documents and reality. That’s why I m going to explore concrete case in the next chapter. I focus on the Czech Republic where do I live and I m trying to identify concrete actions for developing information society.

The Case: The Czech Republic

There is principle of subsidarity in European Union. It means every country government is responsible for realization of European policy. How is situation in the Czech Republic who entranced EU in 2004? First I will shortly summarized main political documents focused on developing information society and then I m going to give some examples of concrete actions held towards this development.

Czech government published first concept of information policy in 1999. The document was called National Information Policy [1999] with under-name Towards Information Society. This strategy continued with document National Information and Communication policy [2004] and it formulated four basic points of developement:

1) Available and safe communication services.
2) Information literacy.
3) Modern public services on-line.

4) Dynamic environment on-line.

Czech political strategies were definitely inspired by European strategy. Especially National Information and Communication policy from 2004 follows European plans from Lisabon strategy and put the tasks into more concrete and locally more specific shapes. And again strategies are very closely connected with ICTs and their penetration into society.

One of the very important real impacts of those documents was realization of National Information Policy in Education. This strategy was born in 2001 and realized within next five years. The three main goals were suggested. First goal was to develop all basic and middle schools by PCs and internet connection available to both – pupils and teachers. As we can see in i2010 - Annual Information Society Report 2007 [2007] there was 8,6 connected computers for 100 pupils at schools (9.9 is EU25 average) in 2006. Over half (67 %) of computers were connected to broadband internet (67 is EU25 average). Second goal was to educate all teachers on basic level of computer literacy and 20 % of them on the level of higher computer literacy. From i2010 Annual Report we can see that 78 % of teachers have been used the computer in class during the last 12 months (74.3 is EU25 average). Third goal of National Information Policy in Education was to provide educational software to schools. It was fulfilled by grants to schools and official evaluation agency which provided reviews on this software and helped to choose the right one.

Another program focused on the development of the information society was National Program of Computer Literacy (NPPG) which started in 2003. The aim of this program was to provide possibility to learn basic work with computers and internet. Program has been focused on groups who had no chance to work with computer and need to skip self-consciousness. Program was based on two hours long course where participants learned how to deal with PC, connect to internet, search the web and manage the e-mail. From the begging of this program more over 90 thousand "students" passed through this course [MI ČR, 2005]. In 2005 there was enlargement of National Program of Computer Literacy with courses for peoples with disabilities, and special courses Citizen, Officer, and Portal of the Public Administration.

One very good motivation for people to be computer literate is to create benefits for them. There is not so much to do from government side, but there are some possibilities. One of them is e-government which is discussed at EU level as I mentioned above. The core idea of e-government is to bring public services online. This step was done in the Czech Republic in 2003 when Portal of the Public Administration was launched. This Portal (http://portal.gov.cz) gives possibilities to communicate with public administration and provides some applications where citizens and business subjects are able to solve their administrative agenda online. If we look in i2010 Annually Report in the Czech Republic there was 8.3 % of basic public services for citizens fully available online (36.8 % is EU25 average). Then there was 62.5 % basic public services for enterprises fully available online (67.8 % is EU25 average). Percentage of population using e-Government services is 17.4 in the Czech Republic (23.8 % is EU25 average). Percentage of enterprises using e-Government services is 75.6 (63.3 % is EU25 average).

Those concrete actions are the main examples of developing information society trough ICTs in the Czech Republic. Of course we can name many more with local impact. And we can also add Czech participation in several EU projects like is eTEN for developing ICTs in security area, e-learning, e-health and of course e-government segment. Connection to those

programs brings possibility to donate concrete projects trough EU funds. There are also local funds for developing information society. For example some of them are part of National Strategy for Broadband Access [2005]. Those funds are more focused on direct support of infrastructure.

There are also great plans for the future development of information society based on technologies. For example there is an idea that every citizen will have electronic mailbox from government and all administrative communication go directly to this mailbox. It seems it can become reality for enterprises and business persons soon.

At this point I can try to answer first part of my research question. Is Europe innovative and dynamic? In previous chapter I presented main documents supporting dynamic and innovations trough development of the information society. I followed with the concrete case of the Czech Republic and found several concrete actions towards realization of this innovations. Czech households having broadband[4] increased from 10 % in 2003 to 56 % in 2006. Percentage of population who are regular internet users grew from 20 % in 2003 to 47 % in 2006. There is clear tendency to support innovations in EU and there is (at least in some countries) great dynamic in the development of the information society.

Yes, EU is innovative and dynamic when we talk about information society. But is also excluding? In the following chapter I will discuss one unintended consequence of information society which is called digital divide. Is it present in EU? Does it affect some concrete groups? Does it exclude them from society? Those are questions which helps me to answer main question if Europe is excluding as well.

Digital Divide and Second Digital Divide

Europe develops information society, but as Merton [1936] suggested there can be some unintended/unexpected consequences in every social action. I see such consequence in phenomenon called Digital Divide. As I mentioned above concept of the information society is closely connected with penetration of ICTs. The term Digital Divide covers one issue about ICTs – people are divided to those who have access to technologies and those who have not. Why it can be a problem? If we look again on current development of the information society it's clear that those people with no access to ICTs are limited on participation at society. Moreover, if we think about developed information society with all e-health, e-learning, e-government and of course e-entertainment we can suggest those people with no accesses are excluded from society. They are divided from skills necessary for life in information society and from access to information. But they are also divided from public sphere, online networks, peers, labor market, etc.

As OECD defined [2000: 3]: "Digital divide, is in fact, a whole series of interlocking divides – the gaps that separate segments of society as well as whole nations into those who are able to take advantage of the news ICT opportunities and those who are not." Another definition serves Judge, Puckett and Cabuk [2004: 383]: "Digital divide is now generally defined as the difference in information technology use based on ethnicity and socioeconomic status."

Judge, Puckett and Cabuk's definition stress one very important thing. Digital divide affect especially those people who are already excluded and strengthen their exclusion. As one of

[4] As % of those having access to the internet at home.

the British research conclude: "Digitally excluded[5] adults are more likely to be older and to have no educational qualifications. (...) Income certainly plays a role in digital exclusion for some in the UK population. Of the 9.5 million adults living on low incomes more than 7 million (or 74%) are digitally excluded. However, digital exclusion cannot be reduced to a mere causal link to income. People on low incomes account for 29% of the digitally excluded population, the remaining 71% being found above the poverty line. (...) Digitally excluded adults are almost 50% more likely than the UK average to have no educational qualifications (45.8% compared to 30.7%). Of the total adult population living below the poverty line, the digitally excluded are twice as likely as the average UK adult to have no educational qualifications but the digitally included are less likely than the UK average to have no qualifications. (...) Furthermore, the disabled adult population are at high risk of being digitally excluded. Of the 3.4 million adults who are registered disabled in 2004, 2.4m of them, or 7 in 10 are digitally excluded." [The Digital divide in 2025, 2004].

By another words: "Consistent throughout the literature is the fact that race, gender, educational level, and socio-economic status are determinant factors in whether or not someone had access to technology." [Sumari, eds, 2006: 5].

Attewel [2001] also reminds, why access to ICTs for everyone is not only guarantee for closing digital divide. It also matter if people use ICTs for education and skills development or just for having fun with games, etc. It means it's not only important if people work with technologies, but also if they can use them. Different approaches to work with ICTs can be source for Second digital divide. Attewel defines Secondary digital divide as social differences between computer usage at school and at home.

When we go through these definitions and data about digital division it seems there is a danger of creating kind of a computer-generated caste system. Is it possible in European Union with all inclusive strategies, document and actions? In the next chapter I'm going to present some data from our case the Czech Republic which will help me to find the answer.

Are they excluded?

In previous chapters I reflected strategies for information society development. I found that concept of information society is closely connected with technologies. European Union and its countries (like the Czech Republic case) strongly support ICT innovations and dynamics towards information society development. At the same time I described phenomenon of digital divide which is closely connected with ICTs and life in information society. I separated the term into two dimensions – primary digital divide (those who have access and those who have not) and secondary digital divide (those who can use ICTs and those who can't). Is it possible there is digital divide in EU? If we go back to i2010 - Annual Information Society Report 2007 [2007] it seems the answer is yes.

Broadband penetration which is presented in the EU documents [eEurope, 2005] as goal standard is present at 15.7 % EU25 households and only 9.6 % of the Czech households in 2006. Of course it doesn't mean that all the others are excluded from the using the internet, but they need some other place to connect or they have to use slower connection. So let's look at places of access. At home there is place of access for 42.6 % of EU25 population (30.9 % for Czech), at work there is connection for 23 % of EU25 population (19.8 % for Czech), at

[5] Study made for British Telecom (BT) defined digital exclusion as not having access to the internet at home.

educational place there is place of connection for 8 % (8.6 % for Czech) and at public places like libaries, etc. is place of access for 6.8 Europeans and 3.5 Czechs. If we count this data together we can see there is no access to internet for 19.6 % of EU25 citizents and 37.2 % of Czechs[6]. Those people are digitally divided and because of no access to the internet they are limited on participation on information society.

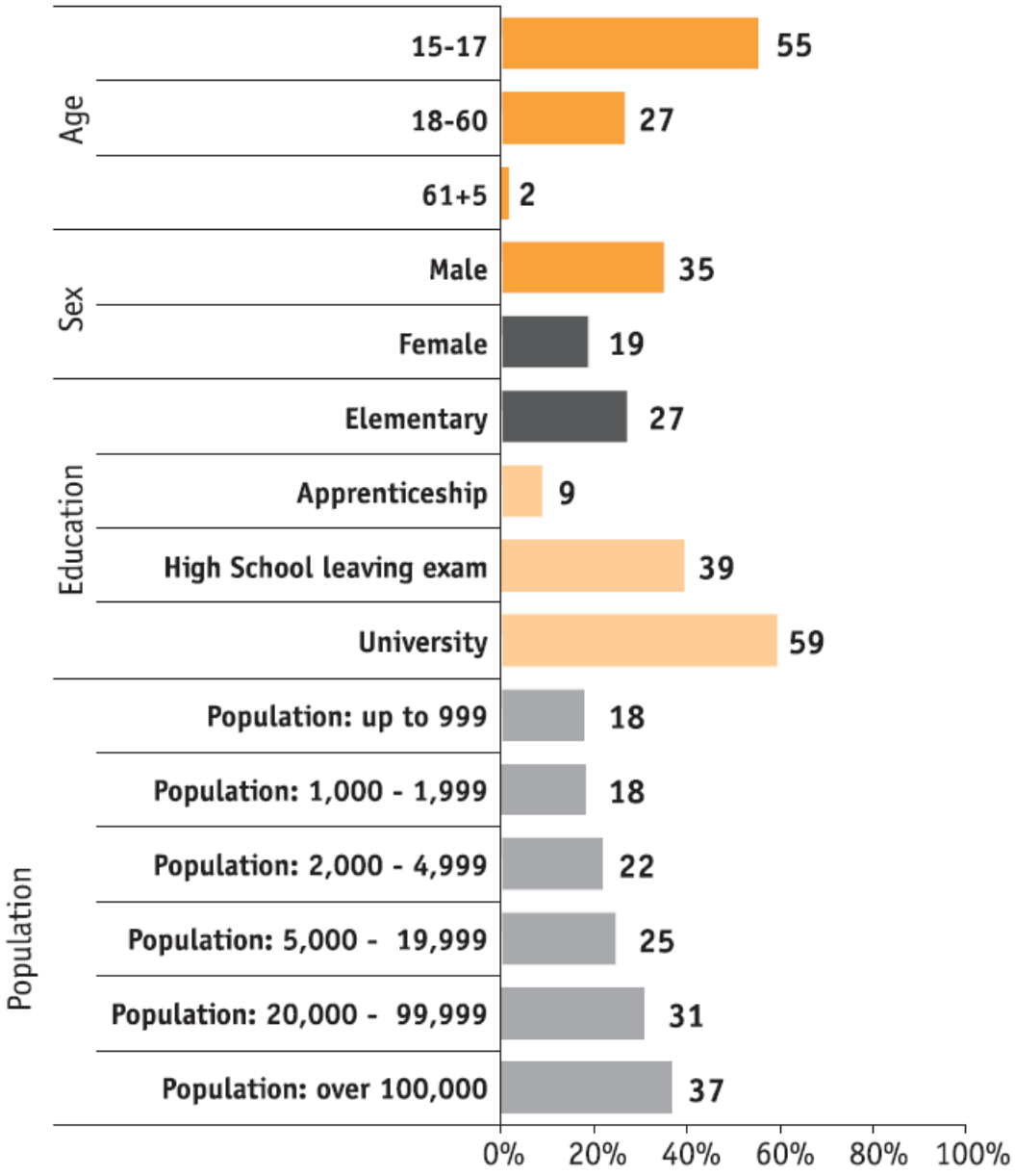
As I explained earlier it's not only important if one have access but also if he or she is able to use them. In this case we talk about computer literacy. There are many ways how to define computer literacy which means there are many ways how to measure it. I'm going to use one of the researches which were made in the Czech Republic. In February 2005 the Ministry of Informatics launched an information literacy survey. The extensive survey was done in three waves, with a total of 15 thousands respondents taking part. Moreover, the knowledge of one thousand of them was verified in a practical test.

"The survey has shown that over 27% of Czechs over 15 have basic computer skills. The survey classified those participants as computer literate who demonstrated their knowledge of basic IT terms, the ability to operate a computer and work with a word processor, spreadsheet program, graphics and the Internet. The survey results showed that those who work best with computers were younger people under 35, people with higher education (at least a high school leaving examination), inhabitants of municipalities with a population over 20, 000 and men." [MIČR, 2005: 17].

Who falls down in secondary digital divide? Those data (see graph 1) from the Czech Republic confirm the same as theory about digital divide as phenomenon. Digitally illiterate are more older people than young, females more than males, low educated than higher educated and people from small cities more than from bigger cities. It means those people who are already threatened by social exclusion are threatened by exclusion from information society as well. Maybe they have access to PCs and internet, but they are not able to use it properly and they are divided from the rest of the population.

[6] According to the survey made by Ministry of Informatics in 2005, 58% of the population had access to a computer and 50% of adult population had access to the Internet or e-mail. About 84% of people had access to a mobile telephone and 13% to a laptop computer.

Graph 1: Computer Literacy in the Czech population (N=16344)



Source: STEM/MARK, Information Literacy Survey 8/2005

In previous chapters I asked if digital divide is present in EU when I was looking for exclusion in EU. As we can see from the data I presented above there is clear answer. Yes there is digital divide which vary from country to country. In the Czech Republic we have data proof that both – primary and secondary - dimensions of digital divide are presented. I also suggested question if digital divide affects some concrete groups. Thanks to data from Ministry of Informatics survey I can conclude that some groups are more affected than the others. Those groups are old people, females, low educated and people from villages.

I also stressed question if digital divide exclude those divided groups from society. There is no clear answer from the data. There is clear point that those people who are digitally divided are not able to fully participate on life in the information society. But how deep is this exclusion? I found that digital exclusion can affect mainly people and groups who are already threatened by social exclusion. There should be more exploration of those people in another research. Digital exclusion can be just one of the parts of exclusion – but for sure part which was born thanks to developing of the information society.

Conclusion and discussion

In this paper I stressed two research questions. Is European Union is innovative and dynamic in the sense of developing of information society? And is European Union is excluding some people or groups in the sense of digital division? I used document analyses, case study of the Czech Republic and some statistics to find the answers.

I found that EU is innovative and dynamic when we talk about information society. I also found proof that EU has tendency to exclude people in the sense of digital divide. There is digital divide between countries, social groups and individuals which has two dimensions – have no access and not to be able to use technologies properly. It's not clear if we can talk about exclusion as result digital divide. Digital divide affects mainly people and groups who are already threatened by social exclusion. This topic should be explore more deeply with focus on "non-haves" and "cant-use" people and finding real reasons and barriers for falling in digital divide. Than EU and local governments can do some effective steps for to close digital divide.

Why should EU fight against digital divide and why not against Mercedes divide? First is European social approach of inclusive policy – they don't want to people left behind the major society and if we follow all this e-health, e-governance or e-learning strategies it's clear that people down in the digital divide with no access to technologies will be excluded from this information society. Moreover, I think that with development of information society digital divide will be bigger and bigger problem for more and more shaped groups of people It means that impact of technologies will cause more strength exclusion. The second reason for fighting against digital divide is more economical. If EU will not focus on those digitally poor groups it might lose their potential to develop information society. It means Europe will be losing chances be successful in global economy.

But how to fight against digital divide? In my has this fight two steps as digital divide has two levels. First is to make technologies available for everyone. The basic for this is some kind of PC with broadband internet connection. It seems not to be such a problem in the world of public schools, libraries and other public places. Private sector plays and important role at this level as well. People can purchase own technologies or rent services of access. Second step is much more complicated. Second digital divide can be closed only in the case we bring all people at basic level of technological and information literacy. Here we can meet with two great problems. Some people have intellectual limits and this basic level of technological and information literacy is changing rapidly. Digital divide has no one exact place or border – is changing during the time. If one gain access and digital literacy she or he can still not be sure that will be digitally literate after 10 years. It means closing digital divide is long-term run which will never end.

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