Importance of Information Region in Development of the Whole Country

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Abstract

This article shows possibility how information and communication technology (ICT) can play important role in development of region. Information region (IR) represents one stage of ICT usage. In addition, this article mentions relationship among IR and administrative regions, state information policy and so on.

Introduction

Last decade brought fast progress into development of information and communication technologies (ICT) and this situation pointed to the question; how can ICT be useful in all branches of everyday life. Although the opinion on this subject is not unified, this article supports the estimation that information and communication technologies can significantly help in regional development.

Traditionally regional policy in industrialised countries aimed at quantitative economic growth, reduction of disparities between centres and peripheries as well as modernisation and industrialisation of lagging areas. This policy focused on overcoming weaknesses and deficits by improving infrastructures and promoting entrepreneurship, notably via attracting inward investment.

Although in many regions this approach has been proved successful for reducing disparities, it was not possible to effectively tackle structural problems. Therefore new approaches have been pursued since the early 1980s, which aimed at strengthening the endogenous potentials of regions. This policy orientation focused on improving the regional capacity for innovation and adaptation, notably via „soft" instruments like business oriented infrastructures, improved framework conditions for enterprises and measures in the fields of training or employment.

Situation in society, progress in science and changes in education show us possible expansion of existing instruments of regional policy. Information and communication technology can play important role in development of region as it will be expressed in this article.

First chapter describe possible usage of ICT in regional development. Second chapter explain meaning of the expression Information region and show possible measure of ICT development in region. Third, fourth and fifth chapter will answer basic questions about information region. At the end are summarized presumptions of establishment of information region.

1. New tool for regional development - ICT

The promise of a new infrastructure in the new economy will at least be the same as the promise of the roadway infrastructure back in the old economy: to provide improved access for its citizens to develop new ways to live, work, and play, and also to help attract new business and investment to the community. The principle is the same; the tools and way to deliver them are different.

Usage of ICT in regional development represent powerful tool which can be understand in many ways. Here is possible structure:

- production of hardware and software,
- regional infrastructure,
- presentation,
- education,
- communication,
- business.

Following chapters clearly explain every way of ICT usage.

1.1. Production of hardware and software

Great boom of ICT made increasing demand for computer hardware and software. The central thought from the point of view of regional development concerned the identification of the ICT industry as a significant growth sector in the economy. Fast growth of ICT industry leads up to idea that attraction of ICT production companies means development of region (lower unemployment -> higher standard of living, big taxpayer -> more money for public services and so on).

Good example of usage of ICT as an industry is in Pardubice region. Company Foxconn, producing computers, started here production in 2000. Last year this company employed 3200 people and increased sales on 39 billion Kč. Next year is expected to bring new jobs in Pardubice region because of opening of new high-tech repair center and production of top LCD monitors. This plans count with 1800 new jobs, 300 of them for qualified experts. [1]

Production of ICT is important part of help to regional development but it is necessary not to think about it as the only one. It would cause such paradox like thinking about manufacture of locomotives and carriages as the principal economic impact of the coming of the railways.

1.2. Regional infrastructure

Regional infrastructure is composed of roads, railways, sewer system and many other things. Telecommunications now play important role in regional infrastructure as a location factor for companies. A strong positive correlation between measures of the deployment and uptake of telecommunications and measures of economic development (such as main telephone lines per 100 inhabitants and Gross Domestic Product) is well established at a national level. A number of studies [2, 3, 4, and 5] have also identified the existence of positive relationships of this sort at the regional level. The first significant study [6] to address the question, of the direction of causality concluded that the evidence supported bi-directional causality; an increase in the number of telephones per capita caused economic growth and economic growth caused an increase in the number of telephones.
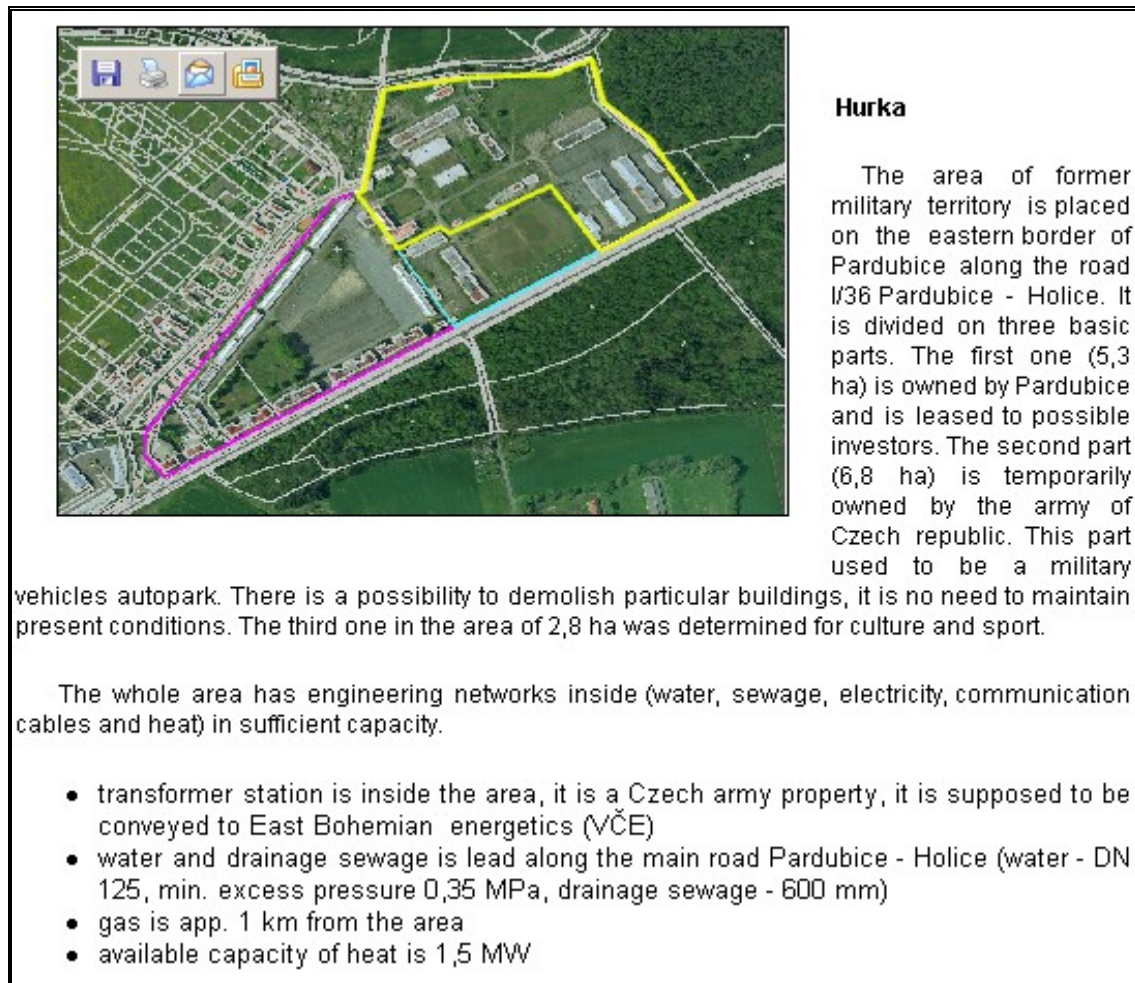
However, the significance of telecommunications infrastructure and services varies widely by sector, the quality of telecommunications being a particularly critical location factor for (financial) services, European head offices, and European distribution activities, and an important and increasing location factor for R&D and high-tech manufacturing.

Ireland is very good example of relationship between telecommunication infrastructure and foreign investment. Grow of economy was 70% in period from 1990 to 1998. [7]

1.3. Presentation

Presentation of region is one of the most important functions of ICT. Information published on the Internet is easily accessible for many users and publishing of information is quite inexpensive. There is also minimal delay between information production and publishing. So what is information to be published?

Regions are able to present their investment potential. Many regions attract investors by offering free lands and tax concession. Information about knowledge potential is also important; therefore well-educated employees are welcome in every business. There is also information about supplier-consumer relationship what can be published on Internet.

Hurka

The area of former military territory is placed on the eastern border of Pardubice along the road I/36 Pardubice - Holice. It is divided on three basic parts. The first one (5,3 ha) is owned by Pardubice and is leased to possible investors. The second part (6,8 ha) is temporarily owned by the army of Czech republic. This part used to be a military vehicles autopark. There is a possibility to demolish particular buildings, it is no need to maintain present conditions. The third one in the area of 2,8 ha was determined for culture and sport.

The whole area has engineering networks inside (water, sewage, electricity, communication cables and heat) in sufficient capacity.

- transformer station is inside the area, it is a Czech army property, it is supposed to be conveyed to East Bohemian energetics (VČE)
- water and drainage sewage is lead along the main road Pardubice - Holice (water - DN 125, min. excess pressure 0,35 MPa, drainage sewage - 600 mm)
- gas is app. 1 km from the area
- available capacity of heat is 1,5 MW

Fig. 1: Pardubice industrial zone [8]

Many regions have very nice nature and clean environment. They should specialize on tourism and present their information about nature beauties, monuments and another attraction. This should be published not only on local web site, but also on special servers dealing with tourist information. There is necessary condition for these pages to be multi-lingual.

Web sites concerning job opportunity may be useful in regional development in two ways. Great problem in some regions is unemployment. There are some in the north Bohemia and north Moravia with over 20% of unemployed persons. On the other side there are few regions looking for specialists that can be difficult to find.

Fig. 2: Presentation of Pardubice region [9]

1.4. Education

Education is necessary assumption of successful development of region. Educated people create added value in greater extend than people without education.

One form of education, using ICT as a tool, became very popular in the last five years. It is distance learning. Definition of distance learning is not clear nevertheless we can specify it in this way: the process of extending learning, or delivering instructional resource-sharing opportunities, to locations away from a classroom, building or site, to another classroom, building or site by using video, audio, computer, multimedia communications, or some combination of these with other traditional delivery methods.

Distance learning brought possibility of education also into outlying regions without educational institutions. So importance of ICT usage is clear in this case.

1.5. Communication

Communication is necessary part of everyday life in region. Local and regional officials have to communicate together and with central agencies. Companies need to communicate with business partners and schools, especially universities have to change information, cooperate on projects and so on.

Example of electronic communication can be found everywhere. Citizens can use e-mail for communication with officials. Some forms are available in electronic way that is more comfortable for people.

The ICT has improved communication in several ways:

- speed: messages from few lines to several volumes can be sent and received in seconds or minutes
- distance: messages can be sent to anyone in the world who has a computer connected to the Internet
- time: people do not have to be on-line at the same time; you can check your mail when you want
- breadth: it is almost as easy to send a message to a large group as it is to an individual

1.6. Business

E-business (electronic business) is, in its simplest form, the conduct of business on the Internet. It is a more generic term than e-commerce because it refers to not only buying and selling but also servicing customers and collaborating with business partners.
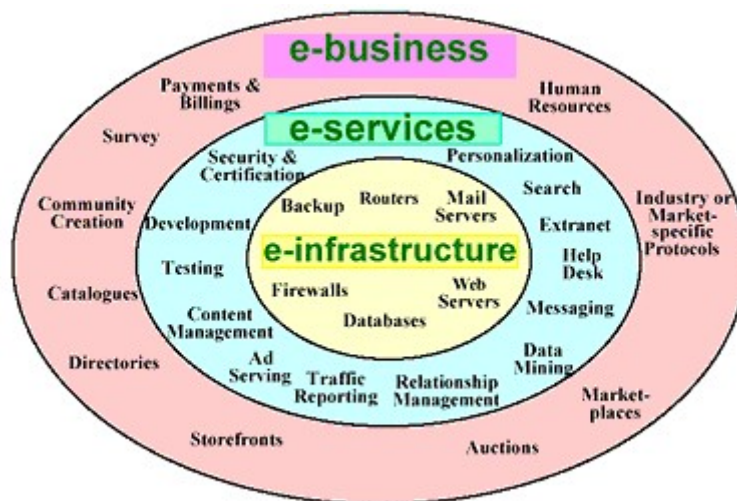
Fig. 3: Modeling e-business [10]

IBM, in 1997, was one of the first to use the term when it launched a campaign built around the term. Today, many corporations are rethinking their businesses in terms of the Internet and its capabilities. Companies are using the Web to buy parts and supplies from other companies, to collaborate on sales promotions, and to do joint research. Exploiting the convenience, availability, and global reach of the Internet, many companies, both large and small have already discovered how to use the Internet successfully. [11]

E-business enabled producers and tradesmen to make business from the registered office even if it is in small village. Making contracts is not dependant on some specific place. Actually business partners do not necessary meet each other at all. Agreement can be made on the Internet using digital signature.

2. What means Information Region (IR)

Information region is such region which takes advantage of ICT for its development. Region can be identified as informational when it uses ICT in all ways as it was described here or even in some ways. For comparison of regions it is necessary to find any measure that will allow us to distinguish different stages of information region.

In this article I propose these criteria:
- percentage of regional GDP produced by ICT firms per year,
- percentage of population online,

- web presence indicator (number and quality of web pages; public administration, companies and schools),
- tele-lines per 100 inhabitants,
- mobile phones per 100 inhabitants,
- percentage of people using modem (narrowband), ISDN (midband); or xDSL/cable modem (broadband) and other (satellite),
- number of distant study programs offered by schools in region,
- number of people educated by distance learning in region,
- amount of sales done through Internet per year,
- rate of electronic contacts among public administration on one side and inhabitants, companies and several institutions on other side (some of these criteria are used to measure e-government [12, 13]).

3. Relationship between administrative regions and IR

Although definition of region is not unified, usually is region defined as a spatially solid territory or interrelated units that differ from the surrounding areas according to a chosen criteria or a set of the latter. Typically region is characterized by some common interest of its subunits to improve the aggregate wealth.

Evaluation of regions from the viewpoint of ICT usage can be done using cluster methods based on data from particular municipality. Creation of such clusters is possible even if it is difficult but regions made this way do not concern any geographical or other characteristics. Inhabitants usually identify themselves as a part of geographical or administrative region. Due to this fact it is better to compare level of ICT usage on administrative regions.

4. Relationship between concentration of population and IR

First thoughts about this problem could suggest that there is clear evidence for direct relation between concentration of population and IR. Higher density of population means more developed information region but the situation is more complicated. It is true that regions with high level of ICT usage are usually highly populated. Nevertheless reverse relation does not happen so often. Actually the highest populated areas are located in poor parts of world therefore we can not say about them they are information regions.

5. Relationship between State Information Policy and IR

We can find tight relation between State Information Policy (SIP) and development of IR. SIP defines and characterizes steps that will be undertaken in order to strengthen all factors of IR growth. Formulation and fulfillment of particular steps in SIP is indispensable but interest on region's side is absolutely necessary.

The Czech SIP is based on 7 pillars; standardization, communication, security, research and development, education, electronic commerce and public information service. [14]

Standardization needs to ensure easier and better quality communications among individual public administration information systems and to adjust the system of technical regulations and standards to the situation prevailing in the EU.

The main objective for communications is to meet the needs of the Czech economy, the requirements of individuals and corporations and the interests of the state in the securing high-quality, reliable and widely accessible telecommunication services and in establishing a publicly accessible communication infrastructure under the optimum conditions and in the extent corresponding to the advanced countries of the EU and of the world, in order to integrate the Czech Republic in the global information society of the 21st century.

It is necessary to foster public awareness on the need to protection information, to increase reliability and secure the safety and protection of the protected data for improving the confidence of citizens in the civil service and local government.

In the field of research and development, the most important thing is to secure the optimum state support of innovation activities and the support of cooperation of the private sector in the development of the new technologies.

Education provide better work with information while taking advantage of modern information and communication technologies at all types of schools and formulating a modern moral codex for work with information.

Electronic commerce represent powerful tool that utilize the electronic form of contact in their relations with others the confidence that it is a sufficiently secure, practically as well as formally acceptable way of acting, equivalent to traditional commercial practices.

Public information services will create the optimum system for the provision of information to citizens and corporations using modern information and communication technologies, and accessible independently of the social position of the entity involved, for the sake of improving the quality of everyday life.

6. Conclusion

This article suggested many ways how to develop information region. It also showed ways how to measure improvement in usage of these tools but it did not say the most important thing. Anything from these tools is useless if there is no or low interest of people. This situation is the most visible on public administration. Officials, who do not like ICT, slow down application of e-government what have negative impact on the region and the whole country. This example again shows necessity of good education that is the most important presumption for establishment of IR.

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