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IMPACT OF INTERNET AND INFORMATION TECHNOLOGIES ON THE DEVELOPMENT OF MAZOVIA

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ABSTRACT

The paper discusses selected aspects of the impact of the Internet and information technologies on the development of Mazovian Region. We have selected four such aspects, typically not discussed in detail. These aspects are: the impact of social knowledge of information technologies on the use of such technologies and thus on socio-economic development; cultural impacts of the Internet use; the impact of the Internet on sports and tourism; the use of information technologies in systems of quality control and their impact on economic competitiveness. While this paper presents only preliminary results or even only plans of the studies of such impacts in Mazovia Region, it illustrates how diverse might be the dimensions of information society development and how the knowledge about such aspects is needed in regional policy formulations.

Introduction

While the penetration of the Internet and information society in Mazovia Region was studied recently [Grzegorek, Wierzbicki 2009], the impact of the Internet and information technologies on socio-economic development of Mazovia was not studied in detail. This paper is written from a technological perspective, mainly by specialists in providing the Internet access but interested also in its impacts on society. The main theses of the paper start – in Section 2 – with the observation that the penetration of the Internet and information technologies depends crucially on the level of social knowledge about these technologies: while children, if exposed to the Internet possibilities at school, will in a sense naturally ask for improved the Internet access, older generations often do not know how to use even best Internet access. In further parts of the paper, we consider selected aspects of future impact (not necessarily current impact; some of our expectations determine research questions for future studies) of information technologies on Mazovia Region. We believe – see Section 3 – that Internet will have a decisive impact on the access to culture of remote (in the civilization sense) parts of the region and thus even might have an impact on the attractiveness of these remote parts as future living places, attracting future immigration. We also believe – see Section 4 – that Internet will have a decisive impact on access to sport and tourism; even if current data do not show such a visible impact today. Finally, we believe that generally

information technologies (including but not limited to the Internet) will have a fundamental impact on competitiveness of Mazovia industry, e.g., as stimulated by the spread of quality control systems in Mazovia, see section 5. Conclusions concern mostly further studies stimulated by this paper.

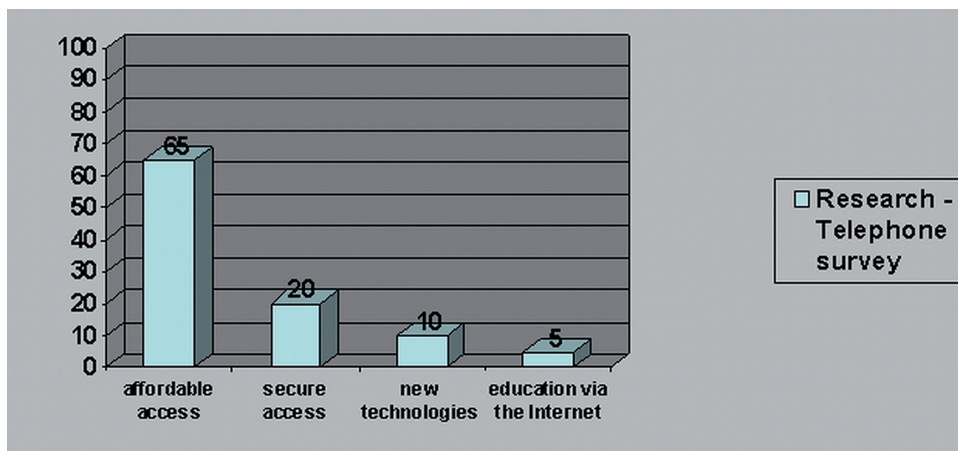
Social Development and Knowledge of Information Technologies

In modern information society, man has free access to means of communication and information transfer. Majority of interpersonal contacts take place with the help of technical devices and the Internet as mass means of intercommunication; many of them take place in virtual world. Thus, it is important to analyze not only the actual accessibility to the Internet and other mass means of intercommunication and information transfer, but also social expectations concerning the use of such means. This can be studied in diverse profiles: countries, regions, communities, state institutions, enterprises, schools, etc. While the accessibility is changing, corresponding services are made more popular, which in turn results in changes of social expectations.

However, social expectations depend not only on actual accessibility and on popularity of services, but also on the level of knowledge about information technology services and the ability of customers to take full advantage from such services. The main point of this section is that such knowledge and ability are very unevenly spread in the society, and this distribution depends additionally on the age of customers.

Recent studies of this question suggest that while children and young people accept new services even when they are quite complex technologically and learn their use in such a way as they learn driving a car, elder people are less ready to accept complex technologi-

Fig. 1. Results of a telephone survey on the importance of four categories of aspects in Mazovian Region

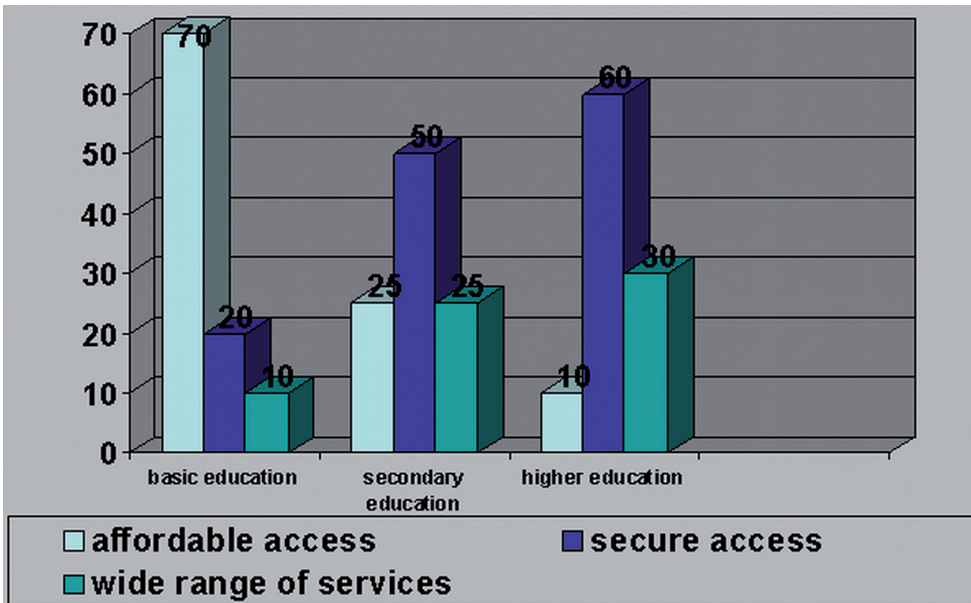


cal services. Moreover, the possibility of acceptance of new technologies depends positively on the exposure to the use of computers and the Internet in schools.

A question “What you expect from new communication services and technologies” was recently a part of a preliminary survey conducted in the Mazovia Region (without a subdivision into districts). Respondents were asked to determine what category of answer was the most important to them. The number of respondents was reasonably high (several thousands) and the results are shown in Fig. 1. Currently, people are not interested in new technologies or education via the Internet; the predominant concerns are affordable and secure access.

This might be expected: human expectations are conservative, information about new technologies, services and devices reaches people only after extensive effort. People are lost in the multiplicity of proposals and advertisements, lack orientation and education to make more advanced judgements. Therefore, a more detailed research was conducted (also in Mazovia Region but on a smaller probe of ca. 300 respondents) with a subdivision between respondents with primary, secondary and tertiary education. The results are shown in Fig. 2.

Fig. 2. Results of a survey with a breakdown according to the level of education



Note that tertiary education results in a substantial increase of interests in a wide range of services, but still dominant is the interest in secure access. Thus, we can conclude that the public – even after tertiary education – is not knowledgeable in the capabilities of modern communication technology. Thus, the problem is not on what scale people use comput-

ers, but with what knowledge and how they use modern technology for the greatest benefit to a region, country or mankind. People must be prepared for new information and communication technologies and this requires quite new education strategies. This is necessary because the Internet becomes today, e.g., one of the main tools of a wide access to the democracy of the social processes.

There are at least two types of actors that are interested in the broadness of social use of new electronic communication technologies. The first type are telecom operators, interested in profits from such use. The second are local and regional authorities that might use the broad social use of new technologies as a means to increase the attractiveness and competitiveness of their localities or regions. Both might learn a basic conclusion from the relations indicated above: *it is in the interest of both telecom operators and local or regional authorities to invest more in the equipment of schools in computers and in providing the Internet access to schools.*

These general relations and conclusions are related to many specific ones: what changes in social functions rely in functioning of people in modern information society, in the virtual world of the Internet, with its advantages and disadvantages. This includes the social functions of: governments, international organizations, charter organizations and their relation to the development and the popularization of the Internet and other means of intercommunication and information transfer. Other specific problem are the directions of the development of devices and means of communication, such as mobile phones; changes in the technology of common access to the Internet, broadband lines, etc. Such aspects, however, will be taken into account in future detailed research, performed by using questionnaire forms; in the Internet, on a macro scale. Data will be acquired also from state institutions and research entities, statistical yearbooks, researches in schools and the local communities, own studies. Concerning the directions of technological development, data will be obtained from research institutions dealing with such development in telecommunication, and technological publications.

As the result of research, we expect to broaden the knowledge concerning present days social expectations and readiness of acceptance of modern means of intercommunication and information transfer. This knowledge might help to determine the scope of action on diverse levels of administration and market organizations for the popularization and actual increase of availability of these means.

The study will have also a specific regional aspect. The region of Mazovia, with its big differences between diverse districts of this region in the preparation of information society (see Grzegorek and Wierzbicki quoted above), is a perfect field of study of the diversification of social expectations and their dependence on the spread of computers and the Internet access in the schools.

Internet and Culture

The access to the Internet stimulates in people deep desires concerning personal freedom or membership of a group, it helps also in the formation of social attitudes and fashions. The lack of access to the Internet today amounts to social exclusion. However, there are no clear answers yet to more specific questions concerning detailed specification of benefits from Internet, specific impacts of the Internet on local communities, priorities in providing Internet access (informatization of offices versus education of digitally excluded), etc.

Existing researches of such questions indicate generally that virtual reality provides a possibility of playing diverse roles and learning through playing, thus liberates deep layers of creativity and reflection, allows for consultation and verification in a network. The Internet becomes thus a platform of intercultural creation, with diverse dimensions of educational, promotional, social discourse character. Understanding of this fact is essential for regional policy. *Without stressing and promoting cultural aspects of the Internet access, local and regional authorities remain passive towards their most important problem: the out-migration of their most active and creative people.* A deep understanding of the cultural role of the Internet, with a policy towards an education of digitally excluded – including elder people that are naturally most conservative and distrust novelties, but also and especially directed towards young people with limited chances in local communities in a classical sense – might change the out-migration trends, create new chances and increase innovativeness and attractiveness of local community, provide a proper mixture of tradition and novel trends.

The traditional explanation of a passive attitude of large parts of Polish society by a thesis of a duality of Polish society does not take into account the fact that *digital divide is in a sense orthogonal to the traditional cultural needs: cultivation of language, religion, local culture.* In fact, Internet can be used effectively to promote such traditional needs. Thus, we must distinguish two dimensions of duality in Polish society: one related to more or less traditional attitudes, another related to digital divide. A practical conclusion is that educational programs combating digital divide should stress methods of consciously using the Internet to support traditional cultural needs and to stimulate local culture.

This orthogonal relation does not mean that there are no impacts of the Internet use (or, generally, information technologies) on cultural dimensions of life – just the opposite, such impacts are very strong. We observe obviously an increased interest in multimedia culture (especially films) at the expense of reading books; this was recently confirmed in Poland by the research reported in [Finansowanie kultury]. This trend will probably intensify in the future, since Poles are still using the Internet mostly for communication and discourse (e-mail, chats, communicators, community portals), much less yet for reading, films, knowledge acquisition. However, as indicated, e.g., in [Bard, Söderqvist 2002], this will inevitably change in future – for many reasons, including the fact that future society will treat entertainment as one of basic dimensions of life and economy. Thus, interactive Internet use will inevitably increase, also in Poland.

Another impact is that of the Internet use on life style. Contemporary media, including the Internet, provide an access to information about diversified local cultures and life styles around the globe; this has an impact on the life style of local people. A new type of network culture is being formed, including new aspects of language, behavioral norms and customs. According to research reported in [Diagnoza społeczna 2009], users of the Internet have significantly stronger cultural demands: during a months, 39% of the Internet users goes to cinema, theater, or a concerto, as opposed to only 7% of people not using the Internet. Users of Internet solve also differently their personal and social problems, less often use alcohol and pacifying medicaments. *Users of the Internet are typically more active culturally, socially and more satisfied from life. This shows the importance of the digital divide dimension of the duality of Polish society.*

These impacts – on the type and extent of cultural demands as well on the life style of people using or not using the Internet – might have also regionally and locally diversified character which is especially important for regional policy. Thus, it is important to start a more detailed study of such impacts; the region of Mazovia, with its large diversification of the advancement of informational society [Grzegorek, Wierzbicki 2009], might be an especially good field for such studies.

The importance of the cultural aspects of the Internet use indicated here confirm also the diagnose contained in [Głąb 2009]: in Poland, there is no sufficient relation between governmental and social dimensions of the development of information society. While the program of building information society in Poland was accepted by the Polish parliament already on 14 of July 2000 and followed by the directives of the Polish Council of Ministers, the priorities of these programs do not show a deeper understanding of the social impacts and needs of information society. In fact, these programs suggest that also governmental authorities suffer from informational divide and should be included themselves in broad educational programs aimed at combating this divide.

The impact of Internet on Sport and Tourism

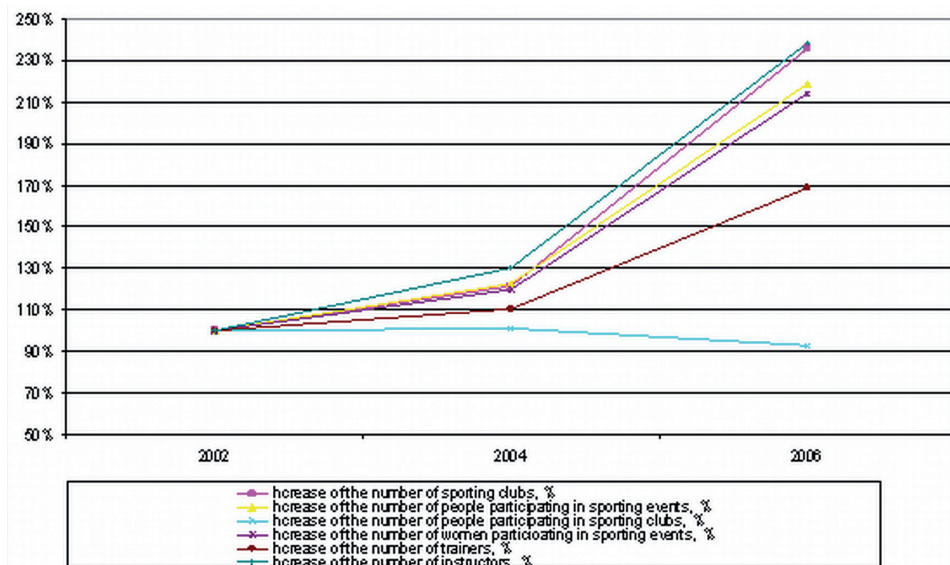
Besides generally on culture, the Internet has also impacts on physical culture – sports and tourism, which also are essential elements of regional policy. The participation in diverse forms of sports and recreation promotes a better effectiveness in professional life and generally a better quality of life. On the other hand, the promotion of tourism serves as an economic stimulator of remote local regions. Thus, regional and local authorities should have at least double reason for a better understanding of the impacts of Internet on sport and tourism.

Generally, social needs of sports and tourism depend on information – popularization, promotion, etc. Contemporary information technologies, such as Internet and mobile telephony, also support the development of physical culture. In recent years, parallel to the development of contemporary information technologies, we observe also the development of sports and tourism. In Table 1 we present the statistical data illustrating this development in Mazovia Region [GUS BDR].

Table 1. Some statistical data in Mazovia Region concerning participation in sports

Years	2002	2004	2006
Population of Mazovia	5.129 mln	5.136 mln	5.146 mln
Participation in sporting clubs and organizations	55 653	68 222	121 593
Participation of women in sporting clubs and organizations	15 830	18 972	33 914
Numbers of sporting clubs and organizations	671	816	1581
Number of trainers and instructors	2 066	2 509	4 295

Fig. 3. Percentage increases of sporting activities in Mazovia Region



These data are significant: even if the percentage of people participating in sports remains small (between 1 and 3%), the increase in recent years is over 100% in most categories, see Fig. 3.

This increase, however, is rather unevenly distributed. In large agglomerations, such as the city of Warsaw or city of Radom, there are significant increases, similar to the entire region. In small, peripheral districts, such as the district gostyniński, zwoleński, łosicki, the participation in sports stagnates. Future research of these issues will include not only distribution between districts, but also statistical correlation between the increase of participation in sports and the increase of access to contemporary information technologies (the Internet,

mobile telephony), as well as comparison of participation in European regional projects.

Concerning tourism, peripheral districts are not necessarily underdeveloped. We present below data concerning, firstly, the total number of tourist overnight quarters (including agro-tourism and camping houses) per 1000 population persons in diverse districts of Mazovia Region. In entire Mazovia Region in the year 2003, the number of tourist quarters per 1000 population amounted to 7.08 beds, out of which 4.14 was in hotels, motels and pensions. They were used approximately 50 to 60 nights per year. The distribution between diverse districts, shown in Table 2, is very uneven. The peripheral district łosicki has around 45 tourist quarter beds per 1000 population, but no hotels, motels or pensions. Other peripheral districts żuromiński, ostrołęcki, przasnyski have practically no tourist quarters and no hotels, motels or pensions.

Table 2. Tourism: Number of tourist overnight quarter beds per 1000/population

Lear	2003		2004		2005		2006		2007	
	Total	Hotels, motels pensions	Total	Hotels, motels pensions	Total	Hotels, motels pensions	Total	Hotels, motels pensions	Total	Hotels, motels pensions
Mazovia Region	7,08	4,14	7,42	4,57	7,19	4,53	7,13	4,38	6,92	4,34
District ciechanowski	4,74	3,79	5,65	4,05	5,97	4,54	5,93	4,57	5,89	4,58
District gostyniński	2,68	0,00	1,64	0,00	1,82	0,00	3,95	0,00	3,96	0,00
District mławski	1,59	1,59	3,29	1,13	3,89	1,13	1,80	1,13	2,50	1,83
District płocki	9,32	1,53	9,09	1,48	7,43	1,20	9,37	1,18	10,04	1,17
District płoński	3,62	2,31	2,76	1,80	2,55	1,83	2,39	1,72	2,37	1,72
District sierpecki	5,78	0,46	5,90	0,46	5,64	0,46	5,72	0,46	5,70	0,47
District żuromiński	0,20	0,00	0,25	0,00	0,20	0,00	0,20	0,00	0,20	0,00
District city Płock	3,07	3,07	3,17	3,17	3,19	3,19	5,18	3,20	4,25	3,02
District łosicki	45,08	0,00	45,40	0,00	45,15	0,00	42,60	0,00	46,43	0,00
District makowski	2,33	0,00	1,71	0,00	1,59	0,00	1,38	0,00	1,38	0,00
District ostrołęcki	0,18	0,00	0,18	0,00	0,00	0,00	0,00	0,00	0,00	0,00
District ostrowski	4,85	1,09	3,78	1,24	3,43	0,00	3,45	0,00	3,46	0,00
District przasnyski	0,00	0,00	1,74	0,00	3,74	0,00	1,32	0,00	0,00	0,00
District pułtuski	7,49	6,51	8,59	6,17	8,89	6,48	7,43	6,51	7,37	6,84
District siedlecki	0,95	0,00	1,21	0,00	1,22	0,00	1,32	0,00	1,06	0,00
District sokołowski	9,09	0,00	9,90	0,00	10,54	0,00	9,56	0,00	7,12	0,00
District węgrowski	5,41	0,52	7,13	0,69	7,06	0,53	6,97	0,53	7,21	0,74
District wyszkowski	8,08	0,84	6,24	0,00	5,88	0,00	6,11	0,00	6,09	0,00

District city Ostrołęka	6,71	3,61	6,70	3,60	5,83	2,72	5,86	2,73	5,80	2,70
District city Siedlce	9,03	1,26	12,25	1,26	12,23	1,26	10,99	1,26	10,50	0,99
District białobrzegi	3,26	0,59	1,60	1,60	1,61	1,61	2,27	2,27	2,26	2,26
District kozienicki	7,85	1,27	7,22	1,27	7,25	1,28	7,29	1,28	7,31	1,29
District lipski	1,57	0,00	0,00	0,00	1,08	0,00	1,09	0,00	1,10	0,00
District przysuski	1,05	0,38	3,82	0,00	4,35	0,27	4,36	0,27	1,45	0,32
District radomski	2,35	0,53	2,56	0,26	3,15	0,60	3,19	0,67	3,11	0,59
District szydłowiecki	1,17	0,58	4,74	0,60	4,60	0,60	4,62	0,60	5,72	0,60
District zwolenński	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
District city Radom	4,55	1,37	3,69	1,32	3,14	1,03	3,08	1,03	2,99	1,03
District city Warsaw	11,74	9,43	12,93	11,25	12,59	11,14	12,38	10,71	12,15	10,62
District garwoliński	9,85	0,21	8,49	0,32	7,53	0,32	7,39	0,32	5,54	0,32
District legionowski	13,40	5,57	13,48	6,39	14,13	6,28	14,67	6,23	15,52	7,12
District miński	2,47	0,83	2,55	0,28	3,00	1,56	3,23	1,60	3,17	1,59
District nowodworski	4,73	1,94	4,98	1,33	4,15	1,32	3,30	1,04	3,69	1,32
District otwocki	4,61	0,75	5,83	0,60	3,43	0,59	3,84	0,45	3,73	0,44
District wołomiński	0,99	0,32	1,14	0,28	1,11	0,44	1,25	0,45	1,11	0,46
District grodziski	1,04	0,43	1,00	0,42	1,05	0,42	1,04	0,41	2,18	1,56
District grójecki	1,37	1,03	1,77	0,81	1,50	0,83	1,52	0,70	1,08	0,26
District piaseczyński	6,48	2,04	6,59	1,95	5,07	0,87	4,87	0,89	4,53	0,59
District pruszkowski	8,76	6,76	3,39	2,28	3,56	2,46	3,49	1,84	2,17	1,12
District sochaczewski	1,75	1,41	1,81	1,47	1,81	1,47	1,73	1,46	1,70	1,44
District warszawski zachodni	1,21	1,21	1,92	1,23	1,95	1,20	1,85	1,43	1,56	1,14
District żyrardowski	4,71	2,72	4,52	2,67	4,43	2,78	5,13	2,79	3,57	2,33

It will be very interesting to correlate these data with participation in European regional projects or with access to contemporary information technologies.

The number of tourists nights per year and 1000 population, presented in Table 3, is strongly related to two factors: availability and attractiveness. Availability results from data presented in Table 2; attractiveness can compensate smaller availability. For example, the number of tourists nights per year and 1000 population is smaller in district łosicki – which has the largest availability – than in district pułtuski, because of the large attractiveness of the city of Pułtusk. The most attractive turns out to be the city of Warsaw and – probably because of direct connection to Warsaw and a very good availability – district legionowski.

Future research will include the correlation of actual number of tourist nights with the spread of mobile telephony and the access to the Internet, especially with the information about hotels, motels and pensions in the form of their the Internet pages. *It is a sign of relative weakness of the regional policy of Mazovia that the number of tourists – except in the city of Warsaw – is practically stationary, does not essentially increase during last years.* The research will help to understand the reasons of this weakness.

Table 3. Tourism: yearly number of tourist nights per 1000 population

Lear	2003		2004		2005		2006		2007	
	Total	In hotels motels in pensions	Total	In hotels motels in pensions	Total	In hotels motels in pensions	Total	In hotels motels in pensions	Total	In hotels motels in pensions
Mazovia Region	340,98	269,95	387,50	314,46	419,80	349,22	449,26	371,62	482,36	401,45
District ciechanowski	170,72	118,53	159,19	115,20	193,39	147,90	218,45	168,23	217,74	164,73
District gostyniński	39,65	0,00	45,89	0,00	56,55	0,00	88,51	0,00	117,08	0,00
District mławski	172,56	170,04	126,87	121,95	70,00	45,41	60,68	52,27	78,99	68,98
District płocki	210,62	70,37	279,11	88,27	283,58	82,43	209,82	85,44	236,97	96,52
District płoński	105,36	99,30	129,50	122,29	137,02	125,22	151,42	139,76	157,19	148,91
District sierpecki	81,51	9,89	111,01	7,83	181,73	7,29	152,37	9,57	158,43	10,36
District żuromiński	26,94	0,00	20,88	0,00	11,41	0,00	22,11	0,00	26,39	0,00
District city Płock	181,73	181,73	182,08	182,08	181,69	181,69	281,10	181,89	197,17	185,96
District łosicki	220,18	0,00	210,97	0,00	195,35	0,00	247,64	0,00	245,55	0,00
District makowski	43,35	0,00	46,16	0,00	44,30	0,00	37,18	0,00	30,36	0,00
District ostrołęcki	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
District ostrowski	116,44	66,22	133,02	80,72	149,88	0,00	163,72	0,00	187,72	0,00
District przasnyski	0,00	0,00	3,49	0,00	9,76	0,00	2,15	0,00	4,71	0,00
District pułtowski	279,73	276,56	397,24	351,73	347,44	314,20	421,67	378,46	377,63	335,07
District siedlecki	28,13	0,00	21,85	0,00	21,26	0,00	24,58	0,00	29,09	0,00
District sokolowski	66,32	0,00	55,98	0,00	57,82	0,00	56,61	0,72	46,44	0,00
District węgrowski	39,24	29,92	38,76	27,11	40,91	29,73	45,04	31,23	46,76	35,45
District wyszkowski	268,24	39,77	281,87	0,00	318,79	0,00	326,84	0,00	347,15	0,00

District city Ostrołęka	251,68	248,35	265,03	261,92	220,15	218,74	217,23	210,98	212,46	210,56
District city Siedlce	237,44	60,56	281,27	46,66	251,88	40,43	260,84	39,85	223,09	37,17
District białobrzegi	35,22	21,78	55,90	50,91	50,68	50,68	87,26	87,26	85,98	85,98
District kozienicki	93,85	64,61	101,00	54,24	123,17	71,65	166,89	86,83	111,50	71,16
District lipski	1,86	0,00	0,00	0,00	35,10	0,00	43,12	0,00	41,21	0,00
District przysuski	14,50	4,08	19,94	0,86	32,52	8,53	19,74	8,69	17,03	9,00
District radomski	70,32	25,19	75,71	8,35	81,60	33,38	89,50	35,19	93,77	33,93
District szydlowiecki	62,55	42,51	171,92	46,86	183,64	42,33	269,62	41,49	367,81	39,48
District zwoleński	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
District city Radom	151,50	77,06	163,26	94,83	147,29	80,67	132,80	76,57	149,91	89,86
District city Warsaw	752,96	670,51	875,72	794,36	963,55	897,89	1 036,44	962,06	1 112,45	1 031,99
District garwoliński	146,49	19,21	144,13	23,22	118,99	23,61	129,16	25,80	97,21	24,84
District legionowski	816,66	318,57	851,91	493,00	949,00	541,49	952,29	527,08	1 213,55	599,09
District miński	54,40	24,41	43,50	12,75	117,00	72,33	119,69	93,68	125,53	97,44
District nowodworski	253,44	161,97	175,60	63,90	122,05	47,65	111,65	32,26	123,12	50,41
District otwocki	177,44	27,87	202,82	49,52	219,99	69,02	201,24	51,14	218,35	56,95
District wołomiński	25,91	14,09	31,20	14,92	29,28	17,53	36,29	26,64	37,09	27,69
District grodzki	56,83	29,07	61,20	16,75	60,62	20,94	70,15	33,44	155,16	118,00
District grójcecki	62,27	55,71	68,28	45,08	62,49	37,32	66,48	34,13	55,27	17,28
District piaseczyński	144,30	90,18	133,48	62,11	109,28	56,96	108,77	48,30	116,54	40,05
District przuskowski	278,70	173,65	287,13	234,48	304,81	231,54	325,84	186,69	341,97	243,60
District sochaczewski	85,76	78,00	102,64	96,09	105,22	95,99	108,86	101,79	118,42	112,53
District warszawski zachodni	43,96	43,87	61,11	42,95	84,13	56,24	71,14	66,27	146,38	137,79
District zyrardowski	214,75	148,50	223,77	162,26	214,16	169,24	254,05	194,57	240,10	216,74

Quality Control Systems in Mazovia

One of the most important competitive inventions today are not necessarily inventive new products, but an overhaul of the organizational architecture [HBR 2006]. In the race for competitive positions on the market, many entrepreneurs introduce several new ideas at the same time with resulting organizational disorder, while there are contemporary means to secure orderly organization; the most important of such means is *quality control*. Quality control systems result in simple profits resulting from streamlining production, distribution and management processes and improving organizational performance. The introduction of new and improvement of existing procedures and processes in an enterprise is as important as introduction of new products. This applies especially for large enterprises or corporations, but is important even for small and, particularly, medium size enterprises.

In Poland and in Mazovia Region, the importance of quality control systems as a feature of regional development policy is mostly neglected. One of the aspects, however, of the use of information technologies is their application in quality control. Thus, *promotion of quality control systems should be a priority for any regional authority analyzing the possibilities of accelerating regional development resulting from increased the Internet accessibility and other information technologies*.

It is true that quality control systems are a subject in itself, with many approaches, tools and system types: norms of ISO 9000, diverse quality control tools (flow charts or process mapping, Pareto analysis, Ishikawa chart, FMEA causal analysis), TQM or Total Quality Management (with 14 points of Demming, PDCA cycle etc.), BPR or Business Process Reengineering, SOX or Sarbanes-Oxley system of internal control. In this paper, we can only outline some related general issues and specify future research directions useful for regional policy.

Pioneering work in quality control was done in Komatsu factory (in Ishikawa province of Japan) of tractors and heavy machinery already in early 70-ties. Soon it was noticed in United States, where the anthropologist Lucy Suchman started in 1979 research on procedures used by accounting clerks in Xerox company. These clerks maintained officially that they follow prescribed procedures, but in reality they improvised and followed intuitive approaches to conquer unpredicted difficulties in their work [Seely Brown 2006]. Thus, human factor in quality control is decisive: large effort in analyzing and describing manufacturing and business processes will remain unproductive if in reality another, informal improvisation will dominate. On the other hand, contemporary, fast changing markets require adequate responses from enterprises, thus an effective quality control, consistent with real procedures, is absolutely necessary.

Standards from the ISO 9000 group are most well known; they constitute a collection of good management practices and provide a consistence between the quality of a product or service with the expectations of the client; they are supported by specific standards and technical reports selected form quality control practice. The tools of quality control such as flow charts for process mapping are also broadly known as a starting element of further

quality control actions such as FMEA analysis of business processes. TQM is typically understood as a comprehensive approach to management resulting in continuous improvement of quality of products and services aimed at the satisfaction of the client.

However, one of most advanced contemporary total quality control systems is standard SOX – a system of internal control consistent with the requirements of Sarbanes-Oxley act of the Congress of the USA adopted in 2002. This act requires that any enterprise should self-assess whether its internal processes, including internal information processing, result in a correct and efficient financial information. Since practically all enterprises use computers for information processing, including financial information, standard SOX results practically in an organizational overhaul of all information technology systems used in an enterprise, including methods of securing access control to data and applications, methods of introducing changes in information technology systems, concepts of future development of such systems, etc. In Europe, the use of SOX standard is voluntary as yet, but larger enterprises and corporations – such as TP SA – have adopted this standard; learning about SOX standard is certainly beneficial for any organization introducing quality control, thus also for regional policy using quality stimulation of control as a tool of increasing regional competitiveness.

In Mazovia Region, SOX standard is used as yet only in a few enterprises and the issue of quality control does not attract attention it deserves in regional policy making. Future research should investigate the spread of quality control – including its diverse stages of development - in large, medium and small enterprises in Mazovia, its diversification in Mazovian districts, its correlation with the spread and access of contemporary information technologies, etc. Initial data on such questions – see [Lista] – indicate that there are about 2000 enterprises in Mazovia Region with quality control certificates, even if these enterprises are mostly located in Warsaw and neighboring districts and most of them do not use SOX.

Conclusions

The paper concentrates on selected aspects of the impact of Internet and information technologies on the development of Mazovian region. The selection of these aspects is done from a technological point of view, even if the diversity of these aspects includes cultural, social and economic dimensions. We are convinced that such diversity is necessary in order to better understand the impacts of information technologies on regional development.

We have selected four aspects: the impact of social knowledge of information technologies on the use of such technologies and thus on socio-economic development; cultural impacts of the Internet use; the impact of the Internet on sports and tourism; the use of information technologies in systems of quality control and their impact on economic competitiveness. Each of these aspects can be decisive for regional development, depending on local specificity. This paper presents only preliminary results or even only plans of the studies of such impacts in Mazovia Region; however, it illustrates how diverse might be the dimensions of information society development and how the knowledge about such aspects is needed in regional policy formulations.

BIBLIOGRAPHY:

Bard A., Söderqvist J., 2002, *Netocracy, The new Power Elite and Life after Capitalism*, Pearson Education, London.

Diagnoza Społeczna, 2009, *Diagnoza Społeczna 2009*, http://www.polska20.pl/diagnoza2009/DS2009_Dwie_Polski.pdf

Finansowanie kultury, *Finansowanie kultury i zarządzanie instytucjami kultury*, Uniwersytet Ekonomiczny w Krakowie, Małopolska Szkoła Administracji Publicznej, http://www.kongreskultury.pl/library/File/RoSK%20finansowanie/finansowanie_w.pelna.pdf

Głąb K., 2009, *Żle budujemy cyfrową Polskę*, http://www.rp.pl/artukul/5,323887_Zle_budujemy_cyfrowa_Polske.html

Grzegorek J., Wierzbicki A. P., 2009, *New Statistical Approaches in the Systemic Analysis of Regional, Intra-Regional and Cross-Regional Factors of Information Society and Economic Development; the Case of Mazovia*, in this volume, p. 117-128.

GUS BDR, GUS – *Bank Danych Regionalnych*, http://www.stat.gov.pl/bdr_n/app/wybrane_cechy.wymiary

HBR, 2006, *Knowledge Management*, Harvard Business Review.

Lista, *Lista liderów jakości*, <http://www.quality.hbi.pl/?p=lista>

Seely Brown J., 2006, *Research that Changes Organization* (in:) *Knowledge Management*, Harvard Business Review.

STRESZCZENIE

W artykule przedstawiono wybrane aspekty wpływu internetu i technologii informacyjnych na rozwój regionu Mazowsza. Do badań wybrane zostały 4 aspekty, które zazwyczaj nie są dyskutowane w szczególach. Aspektami tymi są: wpływ wiedzy na temat technologii informacyjnych na wykorzystanie tychże technologii, a tym samym na rozwój społeczno-ekonomiczny; kulturowe uwarunkowania korzystania z internetu; wpływ internetu na rozwój sportu i turystyki; wykorzystanie technologii informacyjnych dla kontrolowania jakości i ich wpływ na konkurencyjność gospodarczą. W artykule zawarte są wstępne wyniki badań oraz zaprezentowane plany badawcze, dotyczące takich wpływów w regionie Mazowsza. Obrazują one jednak dobrze, jak zróżnicowane mogą być płaszczyzny rozwoju społeczeństwa informacyjnego i jak potrzebna jest wiedza na ten temat dla formułowania polityki rozwoju regionu.

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