



Northern Hungary
REGIONAL REPORT ON IS
31TH JULY 2010

Regional Report on IS - Northern Hungary

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Report on IS (Final version)

1. Overview

1.1 Introduction

It appears that in 2007-2009 such a shift emerges from the data: the up until now slow rate of growth – which was sufficient in conserving our rather inauspicious position internationally – has sped up. Over the past years, the fundamental penetration indicators have significantly risen. Especially striking is the increase in the proportion of households possessing internet access, as well as the proportion of internet users.

Similar trends can be observed in the sphere of internet usage: the 4 percentage point growth characteristic of previous years this year rose to 9 percentage points, and as a consequence, 52% of the Hungarian population over the age of 14 now uses the internet regularly. Similar to trends of recent years, the dynamic diffusion of broad-band connections is noteworthy this year as well. We can say that the dial-up telephone modem is now a thing of the past – today, 87% of the home internet connections are either ADSL or cable, which is striking even in an international context.

It would be difficult to state unequivocally what the reason is for this sudden increase. It is evident that the continuous decrease in the price of pre-paid internet plans over recent years plays a role, which perhaps this year reached that critical level that for many people now makes the World Wide Web accessible. Although, for the time being, the proportion of users can hardly be measured, the appearance of cellular broad-band could bring about significant market movements and reorganizations in times to come, and this year became a real alternative to traditional cable access both technologically and economically.

In addition to the favorable changes concerning access and the supply side of the market, in our opinion, perhaps even more important is the process by which the World Wide Web has imperceptibly secured a place in virtually every sphere of our lives. The general penetration of the broad-band connection, and the growing number of applications and services based on this connection, today have made the internet comprehensible and useful to people who previously did not use the internet because they felt that it was unnecessary in their daily lives and in the execution of their daily routines.

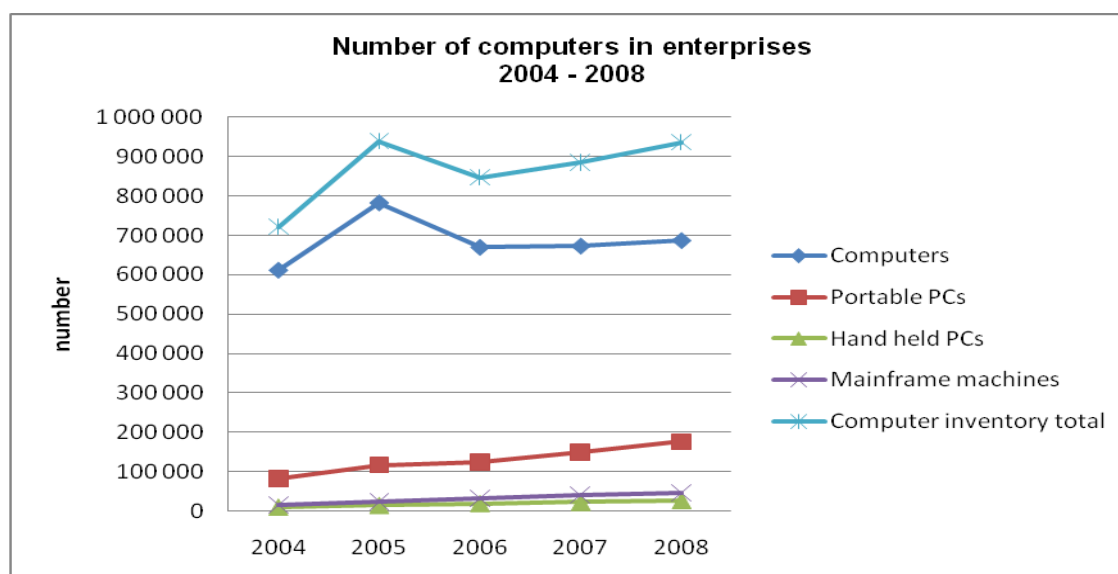
Today, there are numerous areas in which the internet has become perhaps the most important means of handling matters. Just think about the real estate and used automobile market, plane ticket sales, tax returns, or the virtualization of personal communication which makes it just as easy to chat as to use community web pages that offer countless functions. We could perhaps venture to say that recently the latter has made it easier for thousands of people to become familiar with the internet. During our research, we have observed that, today, virtually everyone knows what the internet is, and has a general idea of the types of things it is used for. It may be that they themselves have no personal user experience. Yet those living in their environment, their grandchildren, colleagues, friends, neighbors, as well as the media, films, and TV series all transmit ‘attitude-forming’ information about the World Wide Web. In spite of this, there are still many people who do not use the internet because they think they have no use for it, or simply because they are not interested – these continue to be the most common responses to questions inquiring about reasons for non-usage.

On the basis of the data, it appears that the development of the Hungarian information society reached a turning point in 2007 - 2009. Whether we examine the index of computer access, or that of internet access, it is apparent that diffusion has significantly sped up over the past year, relative to earlier years: the proportion of households equipped with a personal computer increased by 11%, and the proportion of homes possessing internet access increased by 21%.

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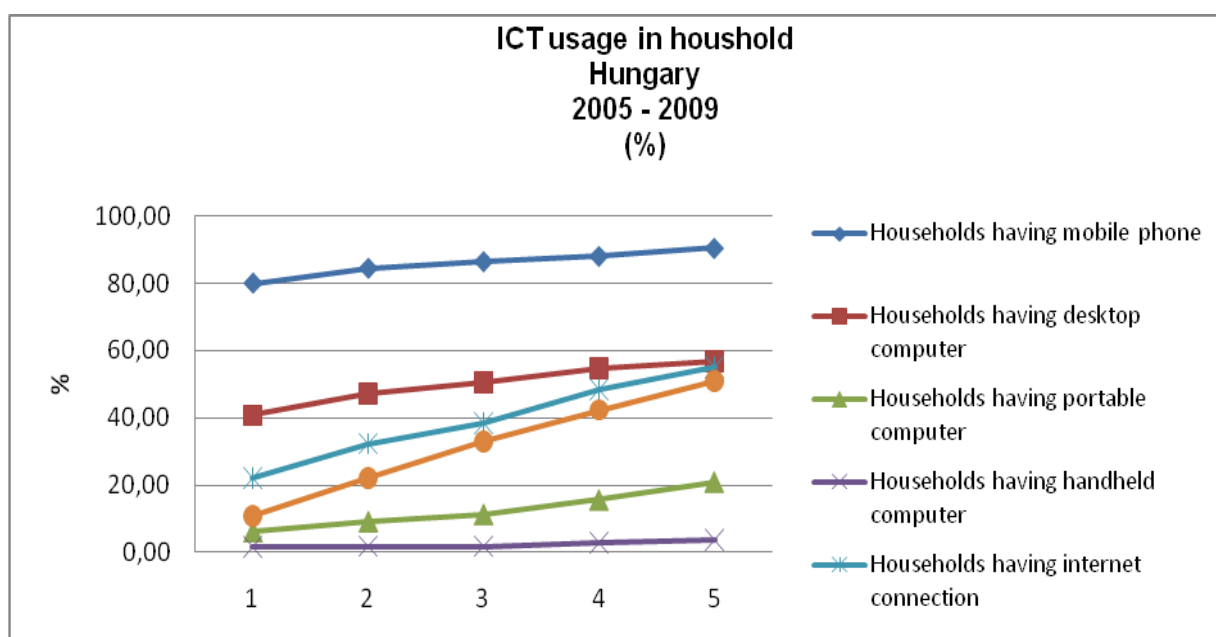
In 41% of the households, there is one personal computer. Yet in 14% of the households, there are either two or more – in such households, home networks can theoretically be built. Furthermore, in addition to the desktop computer, hand-held computers suitable for internet use are also becoming more widespread, and can be found in 12% of the households.

	2004	2005	2006	2007	2008
In the whole economy					
Computers	612 380	782 040	670 126	673 162	687 043
Portable PCs	81 955	117 256	124 712	149 412	176 056
Hand held PCs	10 932	15 265	19 826	22 942	27 249
Mainframe machines	16 533	24 812	32 570	40 329	45 984
Computer inventory total	721 800	939 372	847 234	885 845	936 331
of which					
servers	27 009	24 893	23 326	30 441	35 499
PCs functioning as servers	73 262	31 755	37 753	34 303	36 235
Of which used in computer services					
Computers	38 002	48 541	43 837	29 564	39 662
Portable PCs	7 995	13 155	12 194	11 294	18 278
Hand held PCs	551	1 239	1 143	1 061	1 950
Mainframe machines	1 579	1 633	2 628	3 026	3 255
Computer inventory total	48 127	64 568	59 803	44 945	63 144
of which					
servers	2 887	2 061	2 190	2 420	2 745
PCs functioning as servers	2 071	2 896	3 417	3 323	3 264



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	2005	2006	2007	2008	2009
Access to ICT devices (household level - Hungary)					
Households having mobile phone	79,90	84,40	86,40	88,00	90,40
Households having desktop computer	40,70	47,10	50,60	54,60	56,80
Households having portable computer	6,30	9,30	11,40	15,70	21,00
Households having handheld computer	1,60	1,80	1,80	2,80	3,60
Households having internet connection	22,10	32,30	38,40	48,40	55,10
Households having broadband internet connection	10,90	22	33	42,30	50,9
Computer and internet use (individual level - Hungary)					
Individuals who have ever used a computer	43,30	59,50	62,40	68,50	67,70
Individuals who have actually used the computer (real user)	42,10	54,10	58,30	63,40	62,60
Individuals who have ever used the Internet	39,90	48,50	54,40	62,70	63,70
Individuals who have actually used the Internet (real user)	37,20	44,90	51,60	58,70	59,30
Individuals who have ever ordered goods or services over the Internet	8,90	8,20	12,20	15,70	18,90
Individuals who have actually ordered goods or services over the Internet (real user)	5,30	5,00	6,90	7,70	8,90

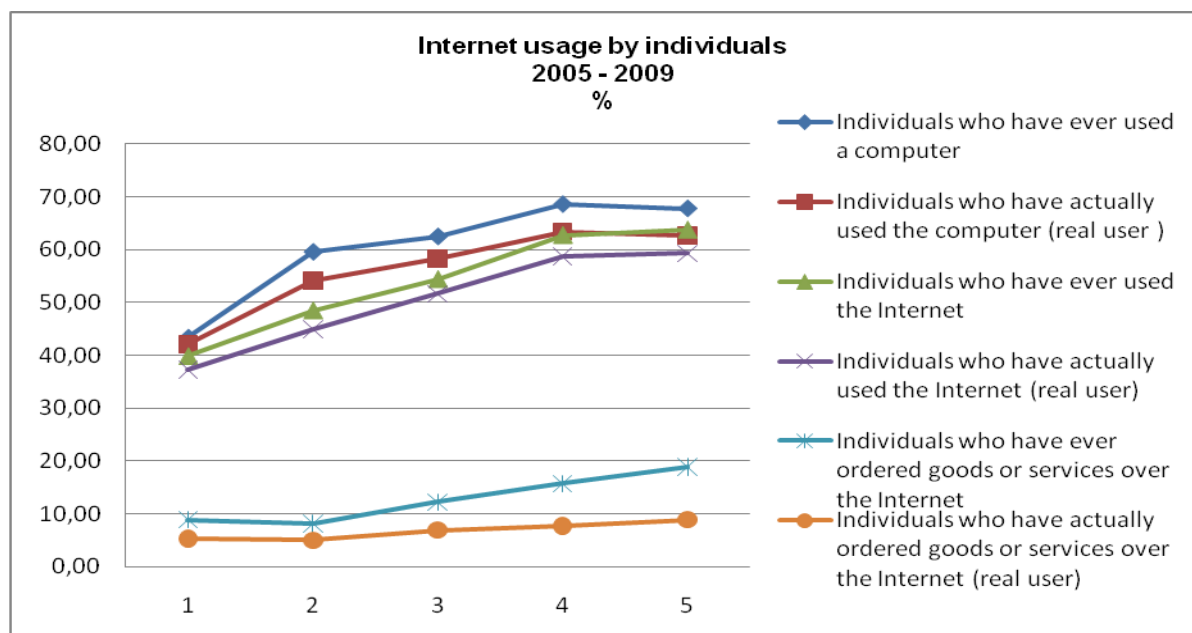
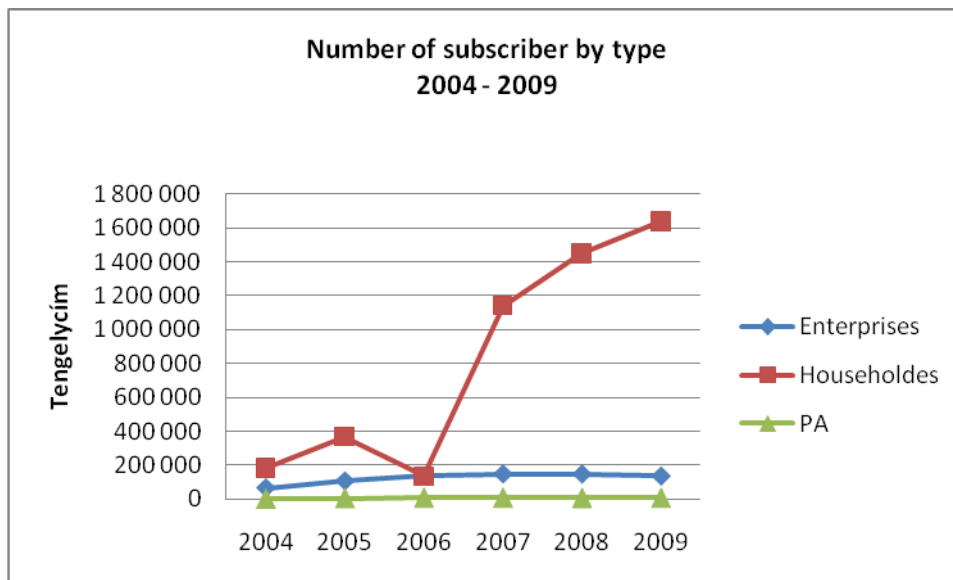


Source: Hungarian Central Statistical Office - HCSO

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Number of Internet subscriber – Hungary

	2004	2005	2006	2007	2008	2009
Enterprises	65 363	107 441	136 427	149 666	149 016	136 884
Householdes	182 952	368 587	136 427	1 141 375	1 450 922	1 637 865
PA	2 171	6 190	8 794	8 791	7 357	8 183



1.2 Socio-economic data

In order to advance the adjustment to the regional policy of the European Union, the system of planning-statistical regions was worked out. These regions represent the second level of NUTS (Nomenclature of Territorial Units for Statistics).

Northern Hungary is a region in Hungary. As a statistical region it includes the counties Borsod-Abaúj-Zemplén, Heves and Nógrád, but in colloquial speech it usually also refers to Szabolcs-Szatmár-Bereg county. The region is actually in the north-eastern part of the country, but the northwestern part is usually referred to as Northern Transdanubian region. The region's centre and largest city is Miskolc.

Map of Hungarian regions



List of regions of Hungary

Name of the region	Regional centre	Area (km ²)	Population	Density (/km ²)
Northern Hungary	Miskolc	13.428	1.289.000	96
Northern Great Plain	Debrecen	17.749	1.554.000	88
Southern Great Plain	Szeged	18.339	1.367.000	75
Central Hungary	Budapest	6.919	2.825.000	408
Central Transdanubia	Székesfehérvár	11.237	1.114.000	99
Western Transdanubia	Győr	11.209	1.004.000	90

Borsod-Abaúj-Zemplén County

With a total area of 7,247 square kilometres, Borsod-Abaúj-Zemplén County is the second largest county in Hungary and also among the most densely populated. It borders Slovakia to the north and its southern boundary is the river Tisza. The county seat of Miskolc at the foot of the Bükk Mountains and serves as its

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economic and traffic centre. The E71 international trunk road passes through the county providing good connections to Slovakia and Poland. The M30 motorway links the county with the capital of Budapest and Miskolc can also be reached from the capital via an Inter City rail service.

The county's first mines and foundries were established in the early 18th century thanks to an abundance of ore, coal, wood and water, later becoming the defining industries in the region. By the late 19th century, various other important engineering and military industrial companies were founded to manufacture products known the world over. Rapid industrialization in the 1950s saw further development of heavy industry and the creation of two large-scale chemicals companies – BorsodChem and TVK. The county maintains these industrial traditions to this day.

The economic structure of Borsod-Abaúj-Zemplén County has changed dramatically with the arrival of multinational companies producing modern goods. In addition, several small and mid-sized enterprises are growing strongly and creating new jobs. However, significant workforce cuts are still affecting some sectors of industry. As a consequence, the county's unemployment rate continues to be the highest in the country. The upside is that the county has an excellent pool of available skilled labour and their retraining and vocational training are government subsidized.

Heves County

Heves County is located in Northern Hungary where the Central Northern Hills meet the Great Hungarian Plain. Just 55 kilometers from the capital, the county extends through the heart of the Northern mountain range and the adjoining rim of the lowlands as far as the River Tisza.

The backbone of the county's infrastructure is its 1,256 kilometer network of public roads. Some 5 per cent of these form the M3 motorway, providing a high-speed link between Heves County and the Europe-wide road network. Heves County is easily accessible from Budapest via the M3 motorway, a new section of which runs through the entire county.

Nógrád County

Nógrád County is situated to the north of Hungary and occupies a territory of 2,544 square kilometers. It borders on Slovakia to the north, Pest County to the west and south-west, Heves County to the east and south-east and Borsod-Abaúj-Zemplén County to the north-east.

Nógrád County it is the country's second smallest administrative unit and least populated with 222,600 inhabitants. The county's population density of 87 people per square kilometre is below the national average. The six towns in the county – Balassagyarmat, Bátonyterenye, Pásztó, Rétság, Salgótarján and Szécsény – represent the economic, intellectual and cultural centers of their respective micro-regions. Some 45 per cent of the population lives in these towns. With a population of 46,000, Salgótarján is the largest town in the county and serves as its county capital.

Budapest can be reached from Nógrád county in 30 to 75 minutes. While the Hungarian capital is already experiencing a shortage of labour, Nógrád county has considerable human capital reserves.

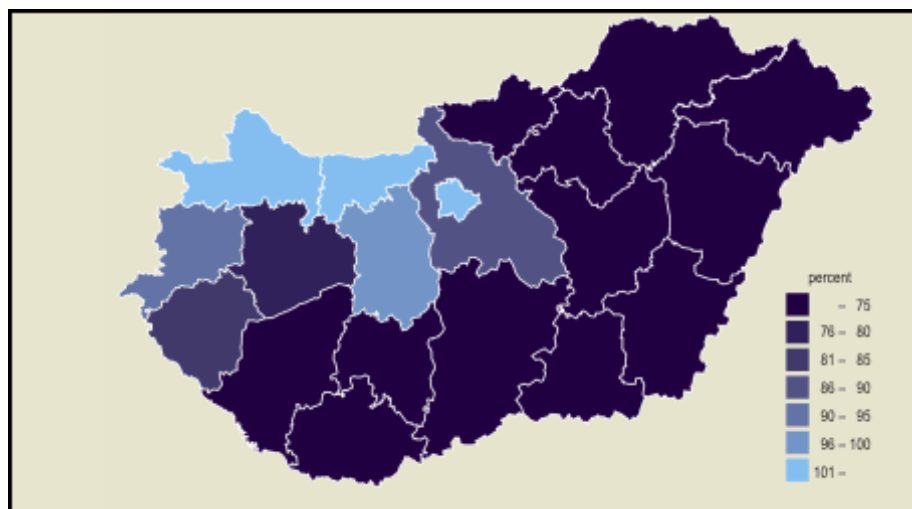
Regional characteristics

The picture of the east-western split is not plain either: while in the western part of Hungary Somogy county is the least developed, Csongrád is the most developed in the eastern parts. Dynamics of the western regions is primarily due to the favorable geographical location, a more mobile economic structure and a higher level of education. These factors helped the process of the foreign capital to settle down and also the export-oriented manufacturing to restructure and accelerate.

After the change of regime the crisis lingered on in the eastern part of the country. It was mainly the eastern counties that were concerned by the depression of the heavy industry producing for eastern markets and by the breakdown of agricultural mass production. A lower level and one-sidedness of education and skills, the lower level of infrastructure on large regional level, mainly the absence of motorways also aggravated the lag.

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GDP per capita as percent of nationwide average – 2009



❖ General indicators and figures

	Unit	Northern Hungary
Area	km ²	13.428
Population	thousands	1.223
Of which: aged 0-14 years	%	15.9
aged 15-64 years	%	67.3
aged 65-x years	%	16.8
GDP at current prices	EUR millions	6.898
Of which: Agriculture	%	4.2
Industry and construction	%	40.3
Services	%	55.6
Share of total GDP		
GDP per capita		

❖ Industry, construction

	Unit	Northern Hungary
Industrial production, volume index	%	94.5

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❖ Enterprises

Northern Hungary	
Number of active corporations and unincorporated enterprises by industry	114,329
<i>Of which:</i>	
in manufacturing	5,353
in construction	6,526
in trade/repair services	14,161
providing real estate/business services	13,154
others (%)	65.7
Number of enterprises per 1,000 inhabitants	93.48
Enterprises with foreign direct investment	733
Number of 100% foreign-owned companies	417

❖ Labor market

	Unit	Year	Northern Hungary
In employment	thousands	2009 Q2	397.6
Economically active	thousands	2009 Q2	467.5
Economically inactive	thousands	2009 Q2	456.9
Participation rate	%	2009 Q2	50.6
Employment rate	%	2009 Q2	43
Unemployment rate	%	2009 Q2	15
Number unemployed	thousands	2009 Q2	69.9
<i>Of which:</i>			
Men	thousands	2009 Q2	40.7
Women	thousands	2009 Q2	29.2
Number of registered jobseekers	thousands	Jun-09	105.211
<i>Of which:</i>			
younger than 19	thousands	Jun-09	3.06
20-24	thousands	Jun-09	14.61
25-34	thousands	Jun-09	28.31
35-44	thousands	Jun-09	26.17
45-54	thousands	Jun-09	25.23
-55	thousands	Jun-09	7.84
<i>Of which:</i>			
with tertiary education	%	Jun-09	2.8
with secondary education (GCE)	%	Jun-09	20.7
with vocational or apprentice school education	%	Jun-09	32.2
with primary school	%	Jun-09	44.2

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education or less than 8 grades			
Gross average monthly wages	EUR	2009 Q2	575
Blue collar	EUR	2009 Q2	418
White collar	EUR	2009 Q2	776

❖ Education, research and development

	Year	Northern Hungary
Number of secondary schools	2008/2009	296
<i>Of which:</i>		
vocational schools	2008/2009	81
special vocational schools	2008/2009	20
secondary general schools	2008/2009	90
secondary vocational schools	2008/2009	105
Number of students in secondary schools	2008/2009	85816
<i>Of which:</i>		
vocational schools	2008/2009	17701
special vocational schools	2008/2009	862
secondary general schools	2008/2009	25674
secondary vocational schools	2008/2009	34,849
Graduates in vocational education	2008/2009	6,730
<i>Of which:</i>		
Engineering	2008/2009	1,365
Number of university and college students	2008/2009	36,595
<i>Of which:</i>		
Engineering	2008/2009	3,094
Business	2008/2009	15,587
IT	2008/2009	1,775
Number of university and college graduates	2008/2009	4,841
<i>Of which:</i>		
Engineering	2008/2009	271
Business	2008/2009	1,587
IT	2008/2009	125

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❖ Research and development

	Unit	Year	Northern Hungary
Number of R&D units		2008	173
Number of R&D personnel		2008	1,155
R&D expenditure	EUR millions	2008	33.3

❖ Infrastructure

	Unit	Year	Northern Hungary
Public road network	km	2008	4,811
<i>Of which:</i>			
motorways and major roads	km	2008	146
Main telephone lines per 1,000 population		2008	273

1.3 Regional SWOT Analysis

In Hungary - due to size and strong economic centralization – the national trends are much indicated in the regional dimensions of the SWOT analysis.

Strengths	Weakness
<ul style="list-style-type: none"> ▪ The presence of foreign-owned producing enterprises and the number of their employees continue to grow (e.g. Bosch) and some of them have installed their R&D capacity into the Region ▪ The confidence of foreign capital (HUF FDI), low labor costs compared to EU average ▪ Moderate strong GDP (in regional aspect) ▪ Well-growing, open, largely privatized, mostly export-driven economy, low inflation and unemployment rate ▪ Automotive industry (Bosch, Remy, ZT, etc.) And ICT (Jabil, Vodafone IS CENTER, Sanmina) players has a strong regional presence ▪ Presence of higher education institutions and R&D Support ▪ Relatively high rate of broadband access in all municipalities in the region ▪ A significant and rapidly developing domestic ICT-producing sector ▪ R&D centurms of multinational companies ▪ Strong and innovative local mobile and internet service providers ▪ Number of domestic IT professionals, advanced IT education level ▪ High internet coverage in the corporate sector ▪ The available state-of-the-art ICT solutions for 	<ul style="list-style-type: none"> ▪ Lack in jobs that require higher educational background in the region, especially in SME sector, which encourages the emigration of graduates ▪ Local Hungarian firms scarcity of capital ▪ Unemployment is high, the skill composition of employment is unfavorable ▪ Infrastructure (physical and virtual) is backwarded ▪ In the field of technology and orientation (business, society) there is a serious gap knowledge, information society ▪ Weak service and knowledge economy sectors ▪ ICT development resources and capital adequacy ▪ The role of potential innovation actors on national and international level is weak, underdeveloped international relations of firms in the county, lack of an innovative cluster ▪ Low innovation culture and willingness to take risks ▪ Low added value in proportion of employees ▪ Low domestic and local consumption of ICT ▪ Copyright problems in the software market ▪ SMEs are lagging behind in access, PC penetration and the use of ICT applications

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<p>operators</p> <ul style="list-style-type: none"> ▪ Good PC endowment of educational institutions ▪ Strong representation of technical culture, technical skills in education as an attraction of economics operations 	<ul style="list-style-type: none"> ▪ Low employment, telecommuting, lack of distance learning ▪ Low system integrity ▪ E-learning solutions have not yet spread ▪ Do not have the right content and method of use of existing network infrastructure ▪ Online commerce and marketplaces are not widespread ▪ Low rate of Hungarian-language digital content ▪ The use of electronic transactions is not spread widely enough ▪ High digital illiteracy among the Roma population ▪ On-line retailing distrust
<p>Opportunities</p>	<p>Threats</p>
<ul style="list-style-type: none"> ▪ Cost advantage (wages), serious volume of value added (if appropriate focus), in FDI services and in knowledge economy ▪ Dynamic growth in the last few years, traditions and successes in ICT ▪ Technology, organizational model, in-sourcing "skip" in the advanced economies ▪ Knowledge economy companies (ICT, biotech, nanotech) ▪ Hungarian products, services market has great potential ▪ The value of ICT skills and the demand for IT professionals increase ▪ Vision for modernizing the state and public administration ▪ Demand for national "gap" products and services ▪ Due to the available ICT solutions there are many modernizing options in every field of state administration ▪ Need of e-governance services ▪ Cost-effective operation of state administration ▪ Closer cooperation in the ICT business, higher education and research institutions to improve the quality of specialist training ▪ Development of the underdeveloped areas of ICT skills upgrading ▪ Digitization of existing educational and research content ▪ The development of infrastructure opens up the possibilities for new ways of contact to communities 	<ul style="list-style-type: none"> ▪ Lack of competitive businesses, further eliminated, even in the domestic market ▪ Deteriorating economic equilibrium, low efficiency of the assets of state intervention (structure, society) ▪ Human and physical capital: gap in investment causes serious absence ▪ Deteriorating competitiveness (economy, society) ▪ The economy cannot develop under the weight of public administration (central, local), supply systems (pension, medical care) ▪ High rate of import ▪ Halt in economic growth ▪ Wage convergence will further reduce our competitiveness ▪ The size of domestic market, lack of critical mass ▪ Disordered structure of the government does not allow wide compatibility of the introduction of ICT applications ▪ Regulatory gaps around electronic signature and identification are further barrier to the introduction of e-government services ▪ Infrastructure is done, but the stimulant use of content, applications do not include sufficient pace

2. The Information Society in *Northern Hungary*: information and data

2.1 Diffusion of the main instruments

Infrastructure of information technology

The informational infrastructure of the region is so contradiction checked by the side of technical and human resources. From technical side the elements of the modern informational infrastructure – high-powered computer system and network of telecommunication, ISDN, XDSL, cable-television network – can be found, but institutions due to the development of the region do not take advantages of possibilities, so this is why the respectively structure and integrated network did not evolved.

In point of human resources there are same differences between the potential dispensers and users according the computer technology knowledge.

In reference to the North-Hungarian region the concrete conclusions are the followings:

- The region is in the middle in case of the number of PCs for 100 households
- The difference is not notable compare to Central-Hungary or Budapest according to the number of mobile phones for 100 households
- North-Hungary is one of the leadings according the internet-suppliers number for 100 households
- The region is in the middle according the rate of the connected cable-television for 100 households – in accordance the towns- and the rate is 100%

Wire telecommunication

In 2003 is not even the three-quarters of the households had wire telephones. The state of supply is not balance in Hungary: the rate of households owning wire telephones is the third highest (79%) in the North-Hungarian region. By the data of KSH (Central Statistic Bureau) the number of main telephone lines are 261 for 1000 people in the region, this is less than the national average (297). The data of the counties are the following: Borsod-Abaúj-Zemplén: 245, Heves: 283, Nógrád: 279.

Network of mobile phone

The mobile phone network and service is available in the whole region, but in a few, higher places the quantity of the service is not satisfactory or none. By the national researches the mobile communication penetration is nearly impregnated, this is general tendency what gets on the North-Hungarian region as well.

Computer usage

There are a lot of differences between the regions according the computer supply. The highest rate (41%) of the households having computer is in the Central-Hungarian region, it is oversize on Western- and Central-Transdanubia (35-36%) and the lowest (23-24%) is around the Great Plain region. According to the dynamic of flare the regions of Central- and Western-Transdanubia are leading, but the Great Plain and North-Hungary are just about the same as the national average. However the regions of Southern-Transdanubia and Central-Hungary are rising less than it would be required.

Internet configuration

It is available to subscribe to E-mail and Internet services in the whole region. Today all the mobile-suppliers are offering E-mail and Internet connections and connected services for low-cost tariffs.

In the North-Hungarian counties – just like in other parts of the country – the number of the Internet suppliers was rising by leaps and bounds, assuring the most competitive prices.

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Public attainment points – e-Hungary

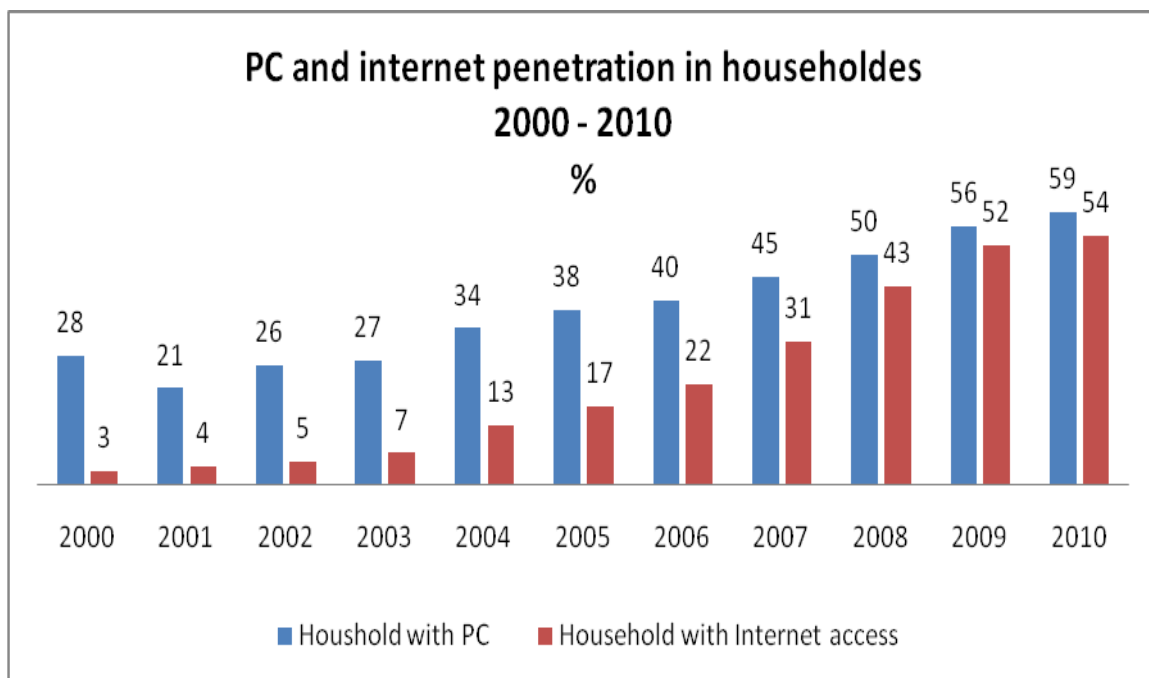
To get and reach the information-technology appliances (like computer, Internet, etc.) is sponsored in so many ways by different common forms. These common forms have to be public, but it can be various from some defined cases (like schools, clubs, communities). The public service can be accommodated with computers on the settled terminals of public places, controlled by IT mentors (“KözPont”, “e-Hungary-Point”).

Number of “e-Hungary Points” in the region:

- Borsod-Abaúj-Zemplén County: 135 pcs
- Heves County: 83 pcs
- Nógrád County: 69 pcs

2.1.1 Use of the PC

The proportion of households equipped with a computer rose the greatest in Central Hungary – that is, where we measured one of the greatest rates of penetration last years. It is worth noting that in the three regions characterized by the lowest ‘figures’ – the territories of Northern Hungary, The Northern Great Hungarian Plain, and The Southern Great Hungarian Plain – the proportion of homes equipped with a PC increased significantly.



ICT in enterprises

	2004	2005	2006	2007	2008
Computers	85,60	88,60	89,50	90,50	89,60
Mobile	90,00	90,10	90,10	91,30	89,70
Wirebased local area network (LAN)	34,70	39,50	49,10	53,20	48,40
Wireless local area network (WLAN)	3,30	6,00	10,20	16,00	17,10
Wide area network (WAN)	7,20	8,00	11,10	12,50	19,70
Intranet	11,30	12,60	17,00	21,50	16,20
Extranet	2,30	2,70	3,90	5,50	10,00
Internet/WWW	67,00	72,60	74,00	84,10	85,00
E-mail	64,20	72,60	74,00	84,10	85,00
Internet based EDI (Electronic Data Interchange)	5,80	6,90	11,50	16,00	14,10
Not internet based EDI	5,10	4,90	8,50	7,10	6,30

Indicators	Unit
How many families have a PC	48%
How many people use the PC:	
- every day	34%
- more time in a week	14%
- few times in a month	4%
- never	48%
How many enterprises have a PC	74%
How many employees use the PC one time a week at least	32%
How many people has followed a PC course	38%

2.1.2 Internet

Looking at the trends of the access indexes, it is not surprising that, according to the data, an explosion has occurred in the sphere of usage as well: the proportion of users has increased by 21 percentage points over the last 3 years. This means that in 2009, 52 percent of the Hungarian population over the age of 14 regularly uses the World Wide Web. In other words, more than half of the population uses the internet.

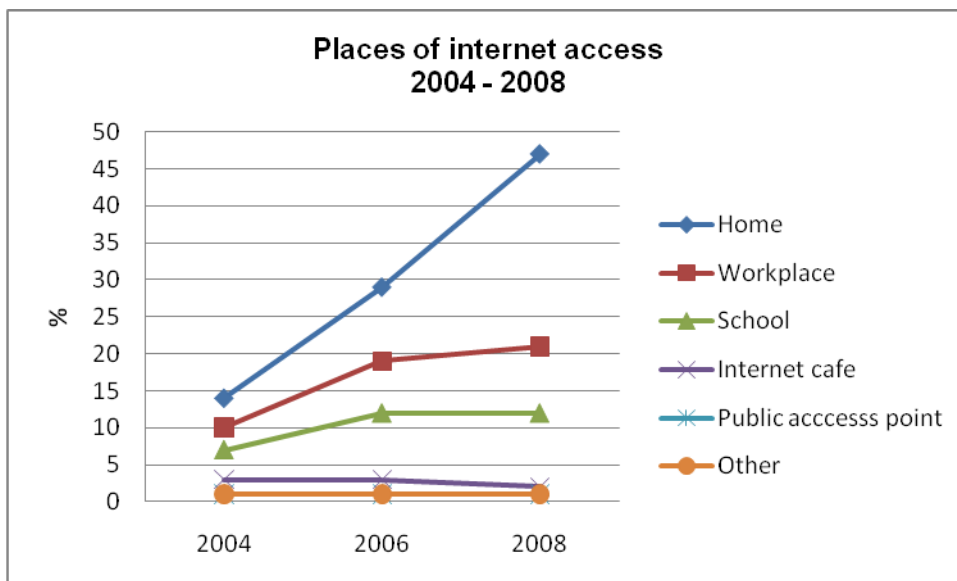
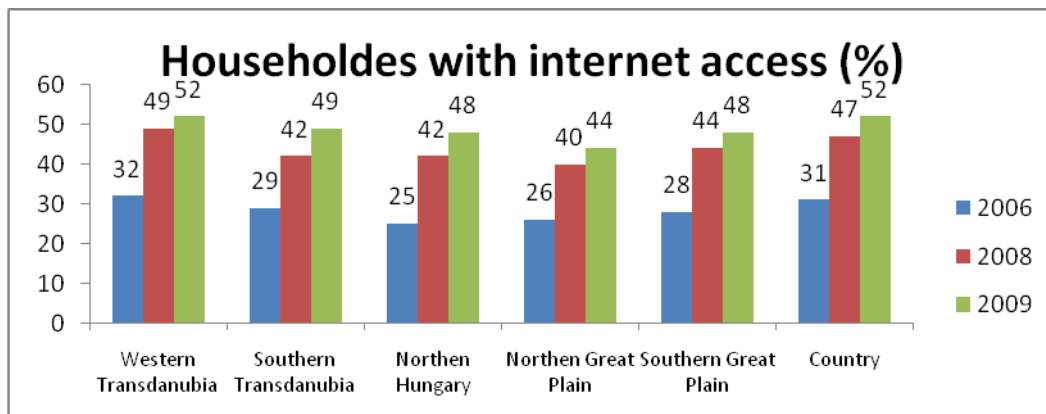
Over the past year, the proliferation of home broad-band access has been especially dynamic, and within it, so has been the headway made by cable providers. Thus, today, broad-band internet has virtually become the prevailing method of utilizing the World Wide Web.

Recently, we have seen the appearance of internet packages offered by cellular phone providers, public places offering wireless internet access, as well as other wireless solutions, which are becoming more and more popular.

Wireless internet connection may be the next step in internet access. Thus, it would be interesting to examine which social groups, first and foremost, use (or to be more precise, which groups realize that they

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are using) this technology. According to the data, to a certain extent, it is those groups who are/were innovators in the field of computer and internet usage – that is, the youth and men – who are taking the lead in the sphere of utilization of wireless solutions. Although we know that the prevalence of wireless solutions varies according to, for example, type of township, we did not find significant correlation according to the other sociodemographic factors used in this report. All of this seems to support the hypothesis that a certain portion of the internet users do not know how they connect to the internet – this is obviously not the most important consideration for the user – and that we only see significant deviations in groups that traditionally are more interested in technological innovation.



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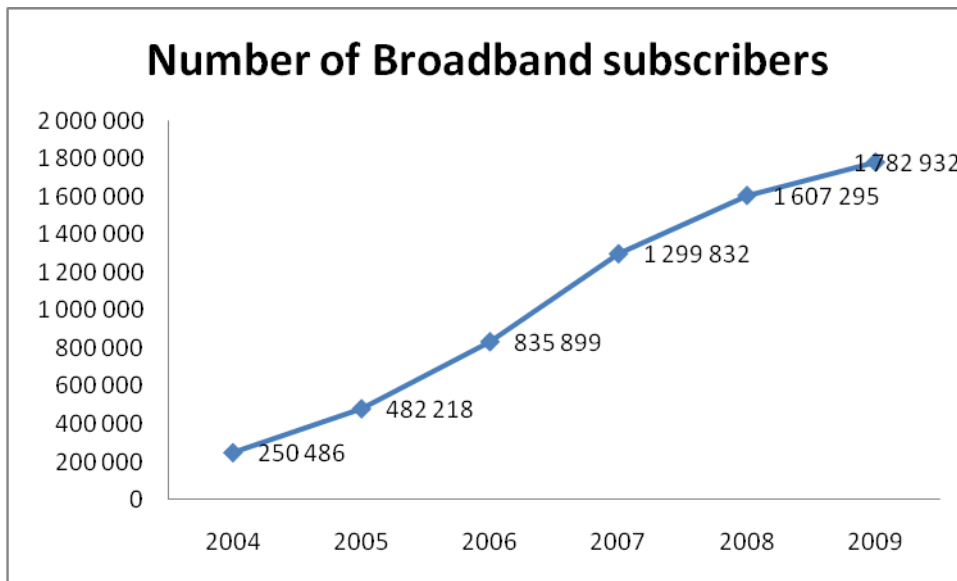
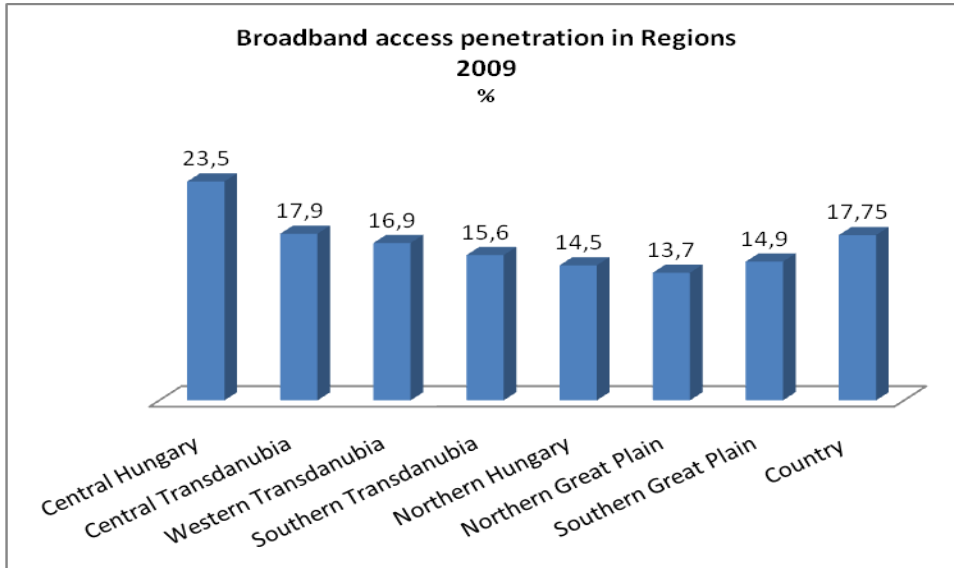
Indicators	Unit
How many families have an Internet connection at home	42%
Which are the main declared reasons to not have Internet at home: example	% of reasons
- Unable to use it	36%
- Cost	44%
- Accesses to Internet From another place (work,..)	36%
- It.s not so interesting	27%
How many enterprises use Internet for own activity	86%
How many employees (private sector) use Internet one time a week at least	30%
How enterprises accesses to Internet:	% of ways
- Modem	2%
- ISDN	6%
- Broadband	87%
- Wireless	5%
How many enterprises (10 employees at least) has a LAN (Local Area Network)	9%
Where people access to Internet:	
- home	82%
- work/school	65%
- public access points	6%
- other	28%

2.1.3 Broadband

Broadband access penetration in Regions

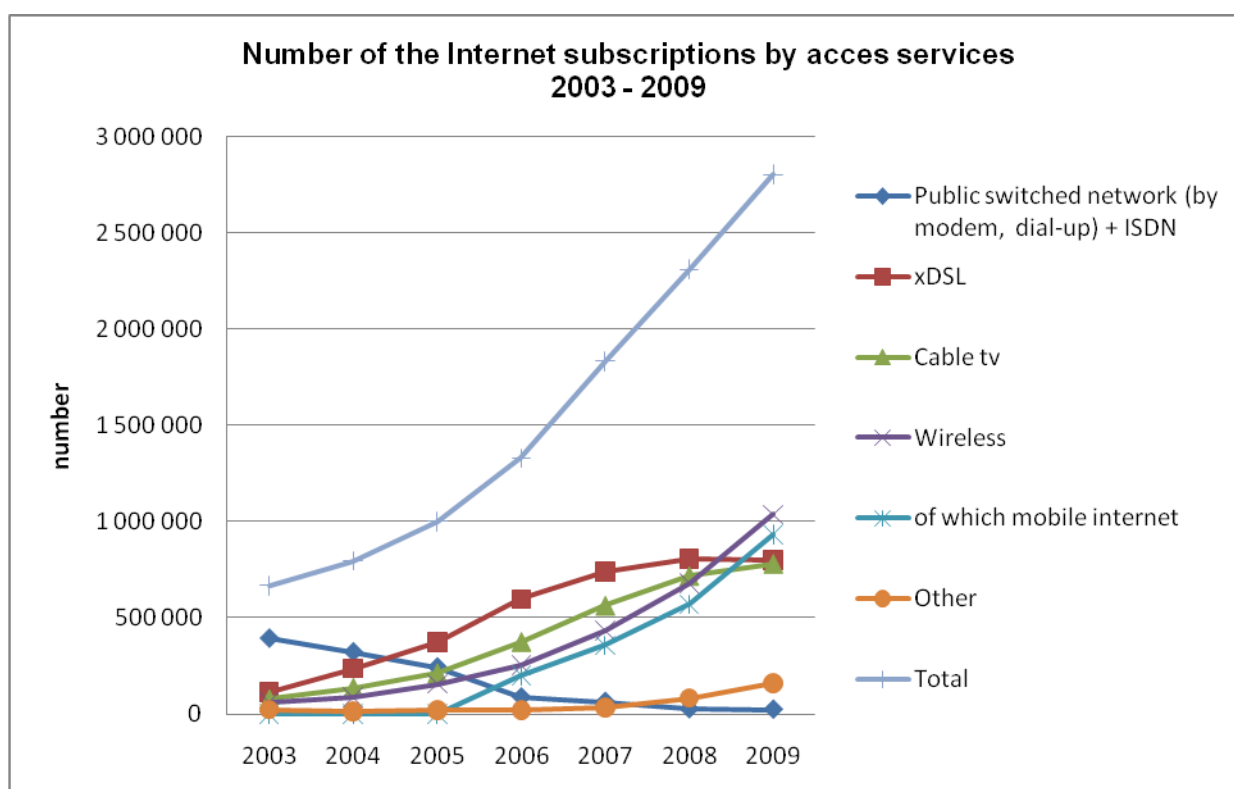
Region	2009
Central Hungary	23,5
Central Transdanubia	17,9
Western Transdanubia	16,9
Southern Transdanubia	15,6
Northern Hungary	14,5
Northern Great Plain	13,7
Southern Great Plain	14,9
Country	17,75

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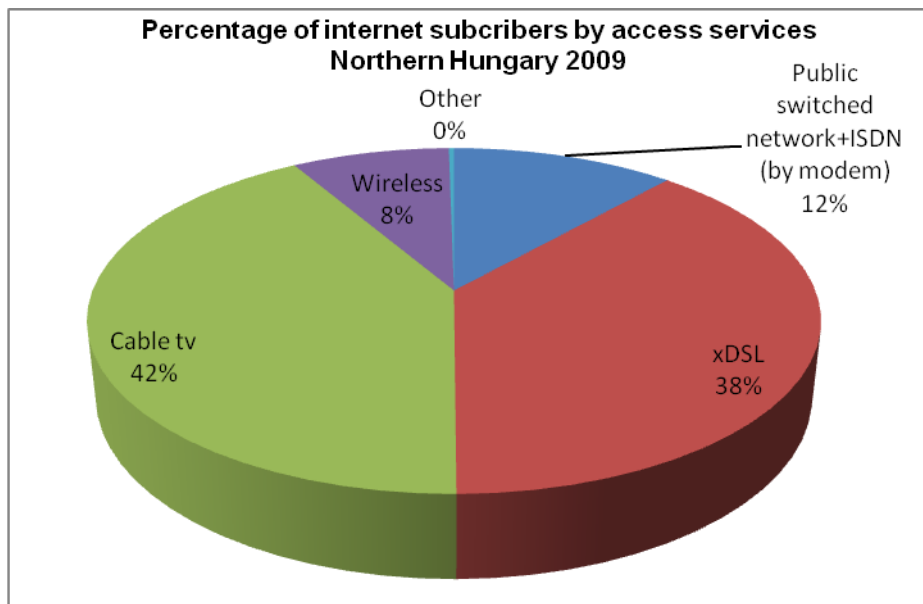
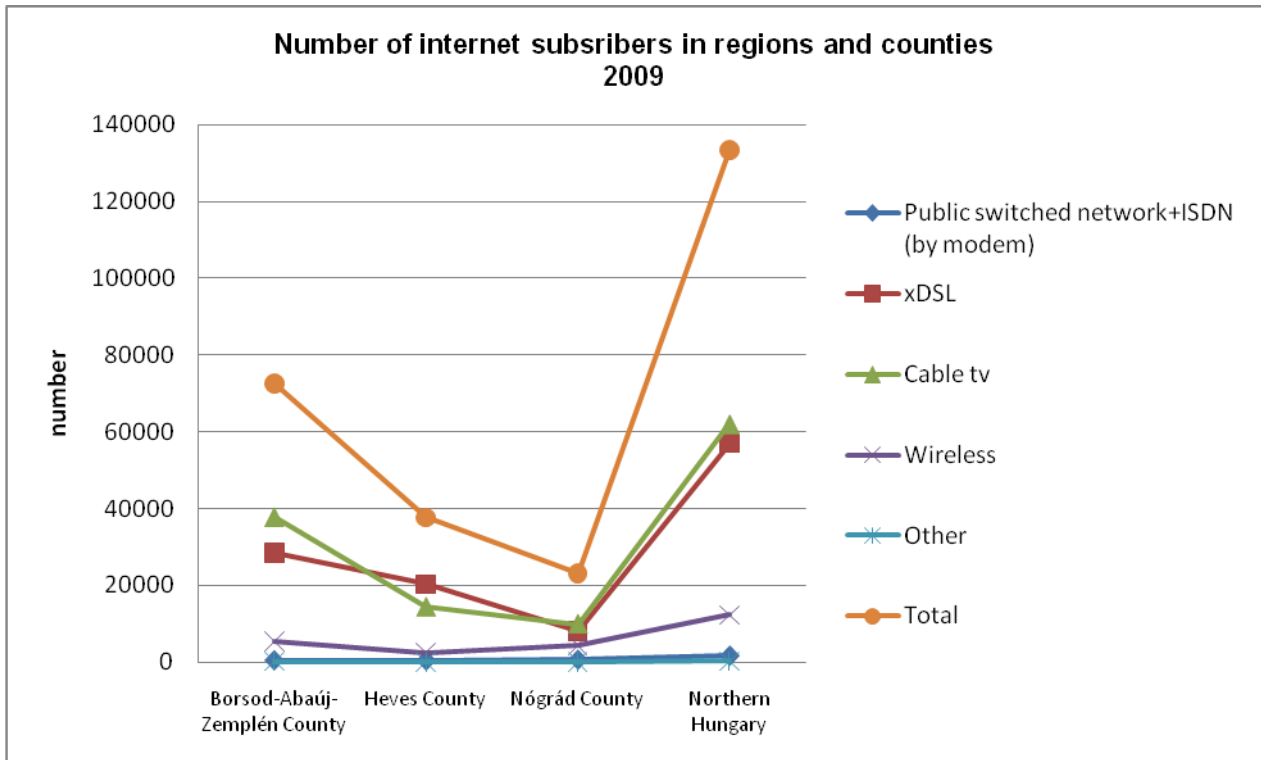


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At the end of the period	Public switched network (by modem, dial-up, ISDN)	xDSL	Cable tv	Wireless	of which mobile internet	Other	Total
2003	391 398	114 813	77 189	60 538	..	22 654	666 592
2004	320 494	235 969	135 803	88 122	..	14 489	794 877
2005	241 611	372 523	212 145	155 988	..	18 470	1 000 737
2006	85 878	597 331	374 647	251 774	199 784	19 995	1 329 625
2007	62 985	739 028	563 593	434 361	356 721	32 056	1 832 023
2008	24 742	806 569	718 060	678 123	570 835	83 420	2 310 914
2009	22 403	800 013	782 430	1 036 898	933 000	161 799	2 803 543



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Indicators	Unit
Regional coverage	%
How many families have a broadband connection at home	15%
How many enterprises have a broadband connection	68%

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for own activity	
How many Public Authorities have a broadband connection:	76%
- Small PA (local /mountain Municipalities)	58%
- Other PA (Region, provinces, big municipalities)	95%

2.2 The ICT market

The information, communications and technology (ICT) sector in Hungary has matured in recent years and the country has emerged as one of the most developed outsourcing markets in the region. There has been a slight year on year progression of total information technologies (IT) expenditures from 1999-2003 and this trend is expected to continue through 2010. Call centers and enterprise resource planning are two areas of particular concentration. Local analysts see software and IT services taking over from IT installation projects, which saw rapid growth during the 1999-2002 IT boom.

Hungary has a service-based economy, with industry and agriculture contributing less than 35% of GDP. The demand for complex IT systems is fairly high as a result of service sector needs and FDI in the development of sectors that were not previous players in the Hungarian market, such as auto manufacturing. The changes of international labor divisions can be clearly tracked in the ICT sector from the 80's, new countries among producers and suppliers, and increasingly complex international chains of value production are established. The two most important channels of the changes are both the creation of new capacities and the transfer or reallocation of existing capacities.

The Hungarian ICT sector has been set up mainly by reallocation processes, particularly by the production reallocation of the large multinational companies. Due to the foreign investments and in many cases the connected domestic SMEs the ICT-process industry and services became a very important segment of the Hungarian economy.

The main features and trends of the Hungarian ICT sector

- The fastest growing sector both by GDP and employment growth
- 16% of GDP comes from this sector
- It generates the set up of new services like e-governance, e-commerce, e-banking, ect.

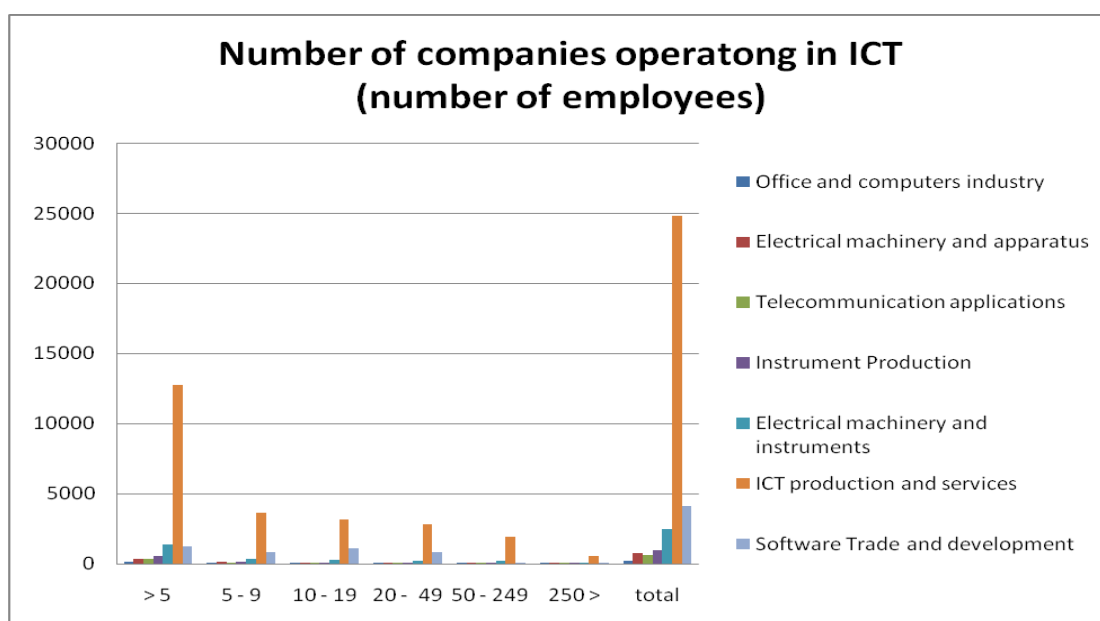
2.2.1 ICT enterprises

The main features of the Hungarian ICT sector

Indicator	2009
Number of employees in manufacturing and services	55 700
Number of employees at demand side	66 000
ICT & the number of employees	121 700
Domestic ICT sales (billion HUF)	1 768
IT sales (billion HUF)	590
Telco revenues (billion HUF)	886
IT-mediated sales(billion HUF)	292
IT export business (billion HUF)	849
Export ratio	32%
Total domestic and ICT export sales (billion HUF)	2 617
% of GDP	10,3
Number of companies operating in ICT	28 980

Number of companies operating in ICT

Sector	number of employees						total
	- 5	5 - 9	10 - 19	20 - 49	50 - 249	250 +	
Office and computers industry	134	21	14	7	9	8	193
Electrical machinery and apparatus	330	109	102	72	90	49	752
Telecommunication applications	343	86	49	50	31	34	593
Instrument Production	563	152	104	69	47	12	947
Electrical machinery and instruments	1370	368	269	198	177	103	2485
ICT production and services	12741	3643	3181	2808	1928	549	24850
Software Trade and development	1256	838	1124	843	56	12	4129



The main manufacturing and service companies of the ICT sector is located in the Middle - Hungarian Region. The North-Hungarian Region grants 8% of the production and employees of this sector.

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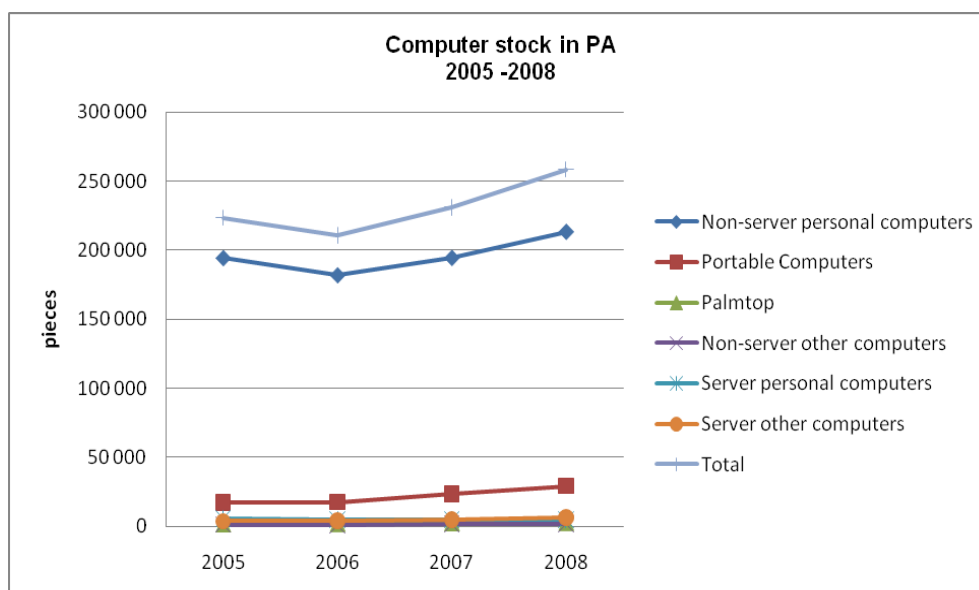
Indicators	Unit
How many enterprises work on ICT sector	2320
How many enterprises in (according to OECD macro-areas) ¹ :	
- ICT manufacturing (hardware, cables, communication devices, TV, etc..)	72%
- Services related to ICT (trading of hardware, communications instruments, etc..)	16%
- General / intangible services (sw, telecommunication, informatics and related activities)	12%
How many people work on ICT sector	9600
What is the share of the ICT sector in the regional economy (GDP)	6%

2.2.2 ICT into the Public Administration

	2005	2006	2007	2008
Non-server personal computers	194 229	181 661	194 377	213 394
Portable Computers	17 283	17 570	23 286	29 149
Palmtop	1 444	1 824	2 305	2 611
Non-server other computers	1 277	575	1 498	1 678
Server personal computers	5 604	5 013	5 019	5 026
Server other computers	3 677	4 191	4 660	6 558
Total	223514	210834	231145	258416

¹ OECD ([Organisation for Economic Co-operation and Development](http://www.oecd.org)) OCSE: 1) manufacturing 2) services related to products 3) Intangible services

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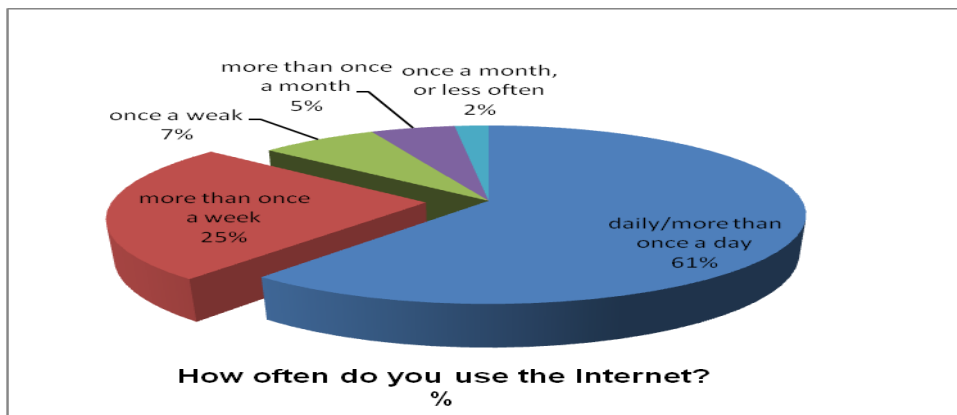
Indicators	Unit
How many PCs every 100 employees	
- Small PA (local /mountain Municipalities)	30
- Other PA (Region, provinces, big municipalities)	70
How many PA has an Intranet (LAN):	
- Small PA (local /mountain Municipalities)	5%
- Other PA (Region, provinces, big municipalities)	25%
→ Of which how many are wireless LAN:	
- Small PA (local /mountain Municipalities)	0%
- Other PA (Region, provinces, big municipalities)	0%
How many local PA (municipalities) manage through PC:	
- Personnel	45%
- Accounting	90%
- Payments	85%
- Contracts	20%
- Calls	15%
- Registry office	10%
- Administrative acts and resolutions	35%
- Taxes	85%
How many bigger PA (Region, Provinces) manage through PC:	
- Personnel	50%
- Accounting	95%
- Payments	90%
- Contracts	45%

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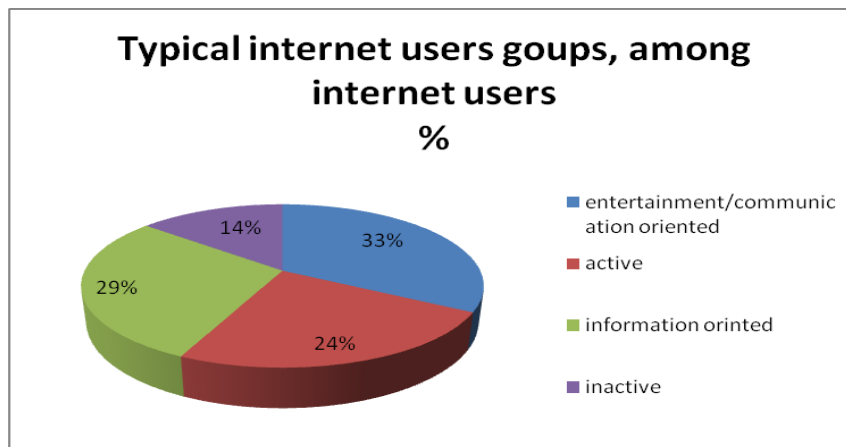
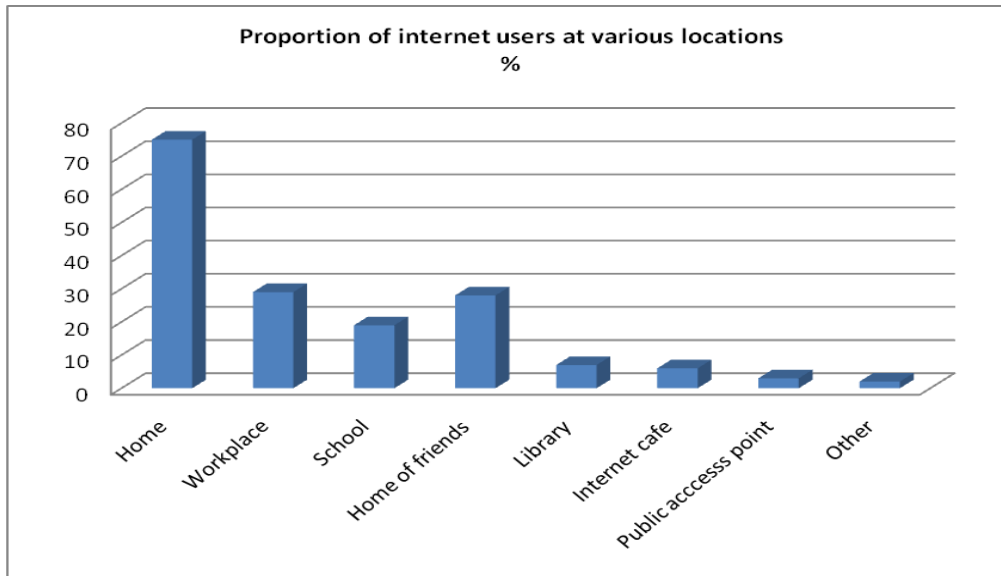
- Calls	35%
- Registry office	25%
- Administrative acts and resolutions	15%
- Taxes	95%
How many PA have a Public Relations Office on web	
- Small PA (local /mountain Municipalities)	10%
- Other PA (Region, provinces, big municipalities)	65%
How many PA have a front office for enterprises on web	
- Small PA (local /mountain Municipalities)	5%
- Other PA (Region, provinces, big municipalities)	45%
How many PA use e.procurement	
- Small PA (local /mountain Municipalities)	2%
- Other PA (Region, provinces, big municipalities)	20%
How many PA allow on line payments	
- Small PA (local /mountain Municipalities)	5%
- Other PA (Region, provinces, big municipalities)	15%

2.3 IS: services and customs

2.3.1 Internet and the citizens



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Group	Active	Information-oriented	Entertainment/communication-oriented	Inactive
Characteristics	young, speak foreign languages, experienced internet users, university-college graduates	married women, with a high educational level	speak foreign languages, young, teenagers	unsure users

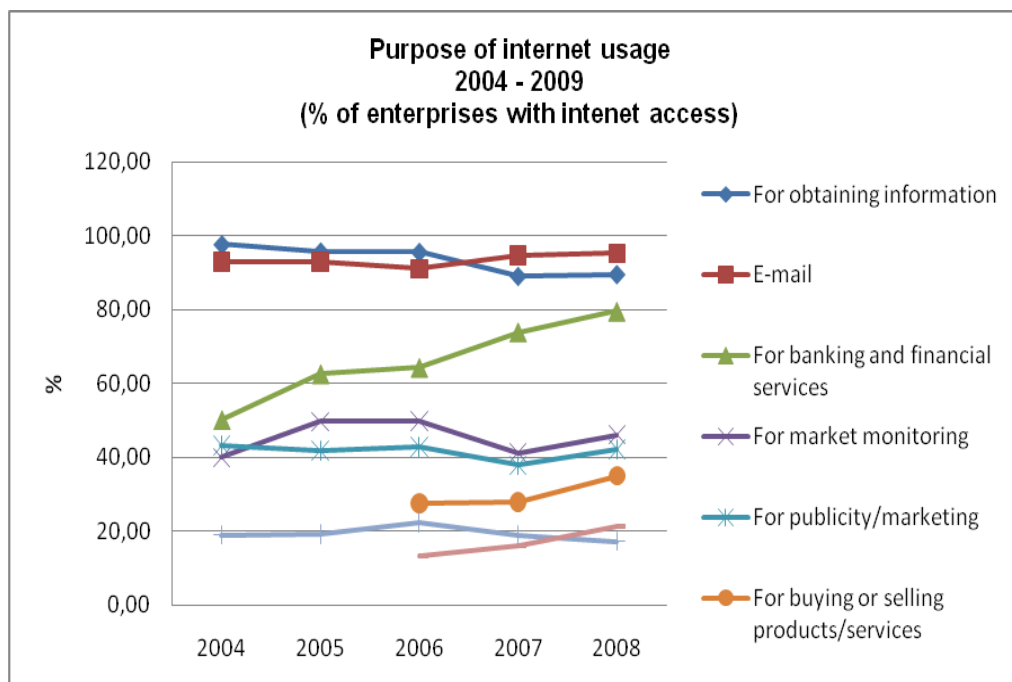
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Indicators	Unit
How many people use Internet for:	% among people using Internet
- Email	90%
- Searching info on products and goods	82%
- Searching info on travel and holidays	56%
- Searching health info	35%
- Other search activities	81%
- Learning	5%
- Downloading	48%
- Home banking	8%
- Blogging	2%
- Chat / communities	43%
- Phone	56%
Focusing on people which purchasing by Internet, how many buy	
- Books, papers	32%
- Travel, holidays	29%
- Clothes	34%
- Films, music	28%
- Phone recharges	32%
- Software	15%
- Tickets	27%
- Hardware	47%
- Electronic devices	67%
- Foodstuff	28%
- Financial services	62%

2.3.2 Internet and the enterprises

	2004	2005	2006	2007	2008
For obtaining information	97,70	95,70	95,60	89,00	89,50
E-mail	93,00	92,90	91,10	94,70	95,30
For banking and financial services	50,30	62,70	64,40	74,00	79,60
For market monitoring	40,00	49,70	49,80	41,30	46,20
For publicity/marketing	43,20	41,90	42,80	37,90	42,20
For buying or selling products/services			27,60	27,90	35,00
For training and education	19,00	19,20	22,40	19,00	17,30
For after sales services			13,30	16,00	21,30

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Indicators	Unit
How many enterprises use Internet for:	% among enterprises using Internet
- Commerce (buying/purchasing)	90%*
- Banking or financial services	95%
- PA services	40%
- Achieving market information (e.g. prices)	100%
- Achieving digital information and services	95%
- E.learning	2%
How many enterprises have a web site	38%
Which services/information they offer by the web site:	
- Catalogues and prices	100%
- On line purchasing / booking	95%
- On line payments	20%
- Working request	45%
- Product customization (by customer)	3%
How many enterprises (use ICT for data management.	
Example:	
- Receiving digital invoices	4%
- Sending digital invoices	4%
- Sending/receiving information on products	65%
- Supplying management	40%
- Customer management	35%
- Data exchange with PA	30%
Other regional additional/distinctive indicator	

2.3.3 Focus on PA services

Indicators	Unit
How many people use PA web services for:	32%
- Asking information	30%
- Sending documents/forms	20%
- Downloading documents/forms	35%
How many enterprises use PA web services for:	43%
- Bureaucratic procedures	40%
- E.procurement	35%
- Asking information	65%
- Sending documents/forms	100%
- Downloading documents/forms	100%

2.4 Digital divide

The effect on gender computer usage did not change at all over the past year: in both groups, the proportion of users grew by 5 percentage points, in accordance with the average. Thus, it continues to be characteristic for a greater proportion of men (52%) to use the computer than women (46%) (Hungary average: 55% and 49%).

Computer usage has traditionally been best accounted for by the age of the person questioned, and over the past year, this has not changed. That is, the digital divide according to age can be well illustrated by the fact that the average age of the computer user is 34, while the average age of the non-user is 57. In other words, the 'generational disparity' in computer usage is greater than twenty years. Similar to last year, one of the most important determinations of the examination by age group is that those belonging to the youngest age group have virtually been completely digitally socialized (most likely, for the most part, thanks to informatics instruction in school). In line with trends of recent years, the proportion of users among those above the age of thirty continues to grow dynamically. However, among those in their forties, as well as among those above the age of sixty, the dynamism of this growth has been much more modest.

In 2009, it continues to be among students (88 - 97%) and employed workers (76 - 66%) that we find the greatest proportion of computer users. On the other hand, only one-tenth of the retired population (pensioners) regularly use the computer.

Generally speaking, we regard the statement that income inequalities are determinants in the case of information-communication tools, and thus in the case of computer usage, as being true. Examining subjective financial situation we can arrive at the conclusion that a much greater proportion of those in a more favorable financial situation use the computer, while among those struggling with financial problems, we at the most find one out of three that are users. According to subjective financial situation, the digital divide neither decreased nor increased over the past year.

Compared to the standing last year, it can be said that the proportion of users increased in every educational group, and that greater than average dynamic growth was experienced in the case of those who had at the most a primary education. All of this signifies that, on the whole, the digital divide according to educational level has somewhat weakened. The discrepancy according to type of township appears to continue to prevail. That is, we find a greater proportion of users in larger townships/cities than we do in smaller townships/villages.

Ethnicity plays just as significant of a role in the case of internet usage as it did in the case of computer usage. According to the 2009 data, few use the internet among the Roma – only one out of every five – while among the non-Roma, nearly every other person does (46%). Yet the fact that, over the past year, disparities on the basis of ethnicity have not grown can give us some reason for optimism.

2.4.1 Gap features

Use of Internet to age/gender

Age	Male	Female
0-10 years (young people)	82%	78%
10-20 years (young people)	92%	90%
20-35 years (young people)	72%	68%
35-45 years (middle age people)	60%	57%
45-55 years (middle age people)	42%	38%
More than 55 years (aged people)	25%	21%
Total	44%	38%

Use of PC according to age/gender

Age	Male	Female
0-10 years (young people)	88%	82%
10-20 years (young people)	94%	92%
20-35 years (young people)	83%	80%
35-45 years (middle age people)	74%	69%
45-55 years (middle age people)	54%	50%
More than 55 years (aged people)	34%	30%
Total	52%	46%

Use of PC/Internet according to job/professional level

	PC	Internet
Director, entrepreneur	86%	86%
Employee	46%	44%
Workman	20%	18%
Retired people	10%	6%

Use of PC/Internet in a family according to grade level of the householder

	PC	Internet
High level (university degree)	81%	79%
Medium level (high school)	60%	57%
Low level (primary school)	30%	25%

2.4.2 From traditional services to web services

How many male/female use the web for:

Indicator	Male	Female
Email	82%	80%
Searching information on web	84%	82%
Searching/buying travel/holiday on web	36%	34%
Reading papers/news	78%	74%

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Using home banking	18%	12%
Looking for a work	22%	18%

Who buy on line according to grade level

Indicator	Unit
High level (university degree)	32%
Medium level (high school)	15%
Low level (primary school)	1%

Who buy on line according to job/professional level

Indicator	Unit
Director, entrepreneur	18%
Employee	28%
Workman	1%

Who use the web for PA services according to grade level

Indicator	Unit
High level (university degree)	16%
Medium level (high school)	6%
Low level (primary school)	1%

Who use the web for PA services according to job/professional level

Indicator	Unit
Director, entrepreneur	12%
Employee	14%
Workman	1%

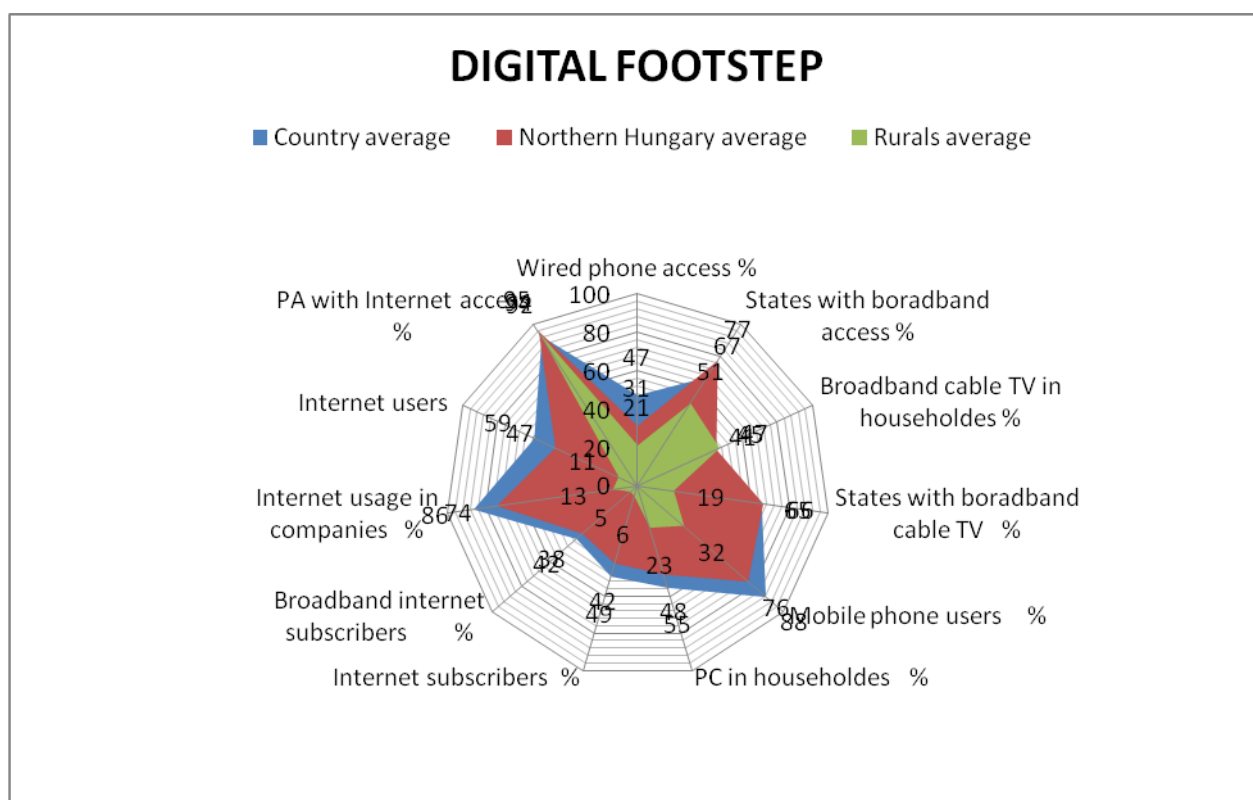
3. The Information Society in **NORTHERN HUNGARY**: governance and policies at local and regional level

A thumbnail image of North Hungarian society can be given by the draw of the digital footprint. In this set - previously analyzed - the data show the main development directions as well.

	Country average	Northern Hungary average	Rurals average
Wired phone access %	47	31	21

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States with broadband access %	67	77	51
Percentage of broadband xDSL %	46	39	34
Broadband cable TV in householdes %	41	45	47
States with broadband cable TV %	65	66	19
Mobile phone users %	88	76	32
PC in householdes %	55	48	23
Internet subscribers %	49	42	6
Broadband internet subscribers %	42	38	5
Internet usage in companies %	86	74	13
Internet users %	59	47	11
PA with Internet access %	92	95	94
Home page of PA %	67	59	41



3.1 The governance of the Information Society in NORTHERN HUNGARY

The regional developments are based on the main centralized national programs. These are as follows:

eGovernment background

Portal

Hungary's eGovernment portal, Magyarország.hu (Hungary.hu) was launched in September 2003 in replacement of the former eKormanyzat.hu (eGovernment.hu). It is at the same time an **institutional portal and a services platform**. It generates and summarises contents from 46 government web-sites. As of 31 May 2006, descriptions of more than 1 000 public administration cases were found on the portal and more than 2 000 types of documents were downloadable. The number of information gaining and searching services provided through the portal has grown from 3 to 264 in May 2006. The average number of visitors in 2006 was 1 600 per day. On 1 April 2005, the portal went fully transactional with the launch of a transactional gateway, called the '**Client Gate**' ([Ügyfélkapu](#)). This gateway allows users to securely identify themselves online and gain access to transactional eGovernment services through the portal. Any user who completes a temporary registration procedure online can access a number of services made available through the Client Gate, but an authenticated registration is needed to fully access transactional services such as those provided by the Hungarian [Tax and Financial Control Administration](#) (APEH). The number of registered users of the Client Gate rose to 760 000 in April 2009.

Since early 2007, there is also a possibility of secure bidirectional document based communication between the public authorities and citizens on the Government Portal through the Client Gate. Citizens can download a General Form Filler application from the Government Portal and with its help fill up the electronic forms of any public authority in offline mode. After completing the fill up they go online sign in at the Client Gate and through its Secure Electronic Document Transmission Service they can send the form to the addressee authority in a secure and authentic way. As part of their Client Gate, citizens also have a notification storage where they can receive documents from public authorities and store the documents received for unlimited time.

Network

Electronic Government Backbone (EKG)

The **Electronic Government Backbone (EKG)** is a **secure and extensive** country-wide broadband network forming the basic infrastructure of electronic government in Hungary. Launched in 2004, this high speed network connects the 18 county seats with Budapest providing the central administration, as well as regional institutions with a secured and monitored communication infrastructure, supporting data communication, Internet access, electronic mail and government intranet services. In addition, EKG also provides connection to the EU's TESTA network.

Identification/eAuthentication

Since April 2005, Hungary has a **comprehensive central identification solution** (Client Gate) for the identification of citizens for electronic transactions carried out between public authorities and citizens. However, there is not yet a comprehensive solution for the identification of citizens in electronic transactions carried out between public authorities. The Client Gate is capable of identifying citizens for any public authority that connects to it. In order to increase the security level of the authentication of the Client Gate there is a chipcard project under preparation (**eHealth card**). Following the issuance of the card, there will be a possibility of hard PKI based authentication also at the Client Gate besides the recently used username password based authentication.

In October 2002, a project to identify "Detailed requirement specification for the usage of electronic signatures and smart cards in order to ensure IT security of public administration" was launched. Requirements and specifications for the development of the Hungarian electronic ID card (HUNEID) and its

prototype implementation were published in late 2004. In early 2008, the HUNEID specification was upgraded in accordance with the European Citizen Card specification.

eProcurement

The Hungarian government has announced its intention to amend the current Act on Public Procurement and pave way for the introduction of an electronic public procurement (EPP) system by 2010.

The ultimate objective is make public procurement simpler, faster and more transparent reports Epractice, adding that with the new solution, Hungary is looking at setting new, higher limits for the value of tenders requiring public procurement procedures.

It is also looking at cutting down the tender processing time, thereby shortening the deadlines for the publication of winner.

According to government plans, eProcurement would be introduced in two phases—between July 2009 and July 2010.

The new system would cover the electronic publication of calls for tenders, as also other aspects of the public procurement procedures, including the announcement of winner and appeal procedures.

At present, the Hungarian government favors a liberal approach in which market players can compete with one another to support the new governmental EPP processes.

Current situation in PA

Some 75 to 80 per cent of public administration employees work with computers. Every civil servant now uses or would like to use a word processor for their work. It should be stressed that IT facilities are hardly present in training and in management decision support in central public administration. The general efficiency of the usage of these facilities is highly doubtful.

Only one third of local governments have their own web pages, while almost every unit of central state administration has one.

Through the establishment of the network of “document offices”, the Ministry of the Interior has taken a major step towards taking services as close to citizens as possible. E-mail use is spreading; there are nationwide online systems and reliable electronic public administration registries.

One quarter of the local governments provide IT training for their employees. One quarter of the employees of central state administration has attended similar training. The IT culture of civil servants has improved considerably.

The inadequate IT infrastructure of the health care sector and the lack of knowledge management to promote a policy which is based on facts hinder the successful implementation of the national health program by themselves.

The majority of the population have been unaffected by the revolution of the information age; the idea of the information society is not a widely known, accepted and exciting vision of the future for them yet. This is also related to the fact that the electronic contents and services through which the benefits of the information society could become tangible don't exist or haven't spread yet.

The electronically accessible public services, which are now typical in the EU, apart from a few exceptions do not yet exist in Hungary. The number and use of public content services offered to citizens increase only slowly.

Most internet contents currently accessible are only available in Hungarian, being thus accessible but incomprehensible for other nations on the worldwide web.

While some progress has been made, there is no clear distinction yet between the public content services with the participation of the state, and private content services realized on a market basis. The viable “public-private partnership model” in the area of public content services is still lacking (though the relevant legislation is under preparation).

Public content services are scattered, redundant and ad hoc in their nature, lacking the standardization necessary for the cooperation of systems. On the four-level scale of the EU they correspond to the first level, occasionally to the second; in some cases, preparations are in progress (at least it has been considered) to launch third-level (interactive) services.

In the area of public content services, the state communicates in a traditional, top-down manner, and does not make full use of the interactivity inherent in online content services, as well as the opportunities of communication community-wise.

Public administration is for the most part provided with access to internet and to computer facilities. Internet access is provided in three quarters of the local governments, while a nearly full access is available for the central government.

Local and Regional problems in PA

As compared to the future outlook detailed above, there are a number of palpable deficiencies in the operation of public administration. The following are the most significant:

- Public administration and official proceedings are usually very slow. In most cases, they are not efficient enough due to the relevant legal regulations and orders of proceedings tailored for uncertain and slow communication, furthermore, the quality of public administration services often does not meet the expectations of the economic players and the society, with the population and businesses considering such proceedings expensive and overly complicated;
- Hungarian public administration operates with the same number of staff as administrations in other EU countries - except for the local level, where staff numbers are insufficient - but, in terms of cost-effectiveness, the Hungarian public administration proves to be less effective than other EU administrations;
- Info-communication technologies are not used to the desired extent in public administration, the range of available adequate contents and services is limited, services are static, not very interactive or user-friendly. The limited range of bilateral interactive and transaction level services within electronic administration services and public services is a very pressing problem;
- Related background processes and systems are underdeveloped, the process regulation of case management is overly heterogeneous, interoperability and reliable electronic identification of citizens are missing,
- People in disadvantaged regions have trouble accessing info-communication services;
- The organizational acceptance within public administration of the profession of public administration IT expert is rather varied; the majority of municipalities do not employ such professional, which fundamentally limits the efficiency of the operation of public administration.

3.2 Local and Regional policies and objectives

3.2.1 Overview and main themes/areas of activity

Vision of the future

The construction of an e-Hungary relying on these two pillars¹⁵ lies in the centre of the strategy. There is a natural connection between the pillars but it is not always necessarily possible to infer from one to the other. Online services represent the external aspect, the “front office” of the functions performed by the organizations for users. Yet electronic services can only be implemented in their most sophisticated form (for instance with the use of integrated administration), if the internal operation or “back office” is sufficiently informatized. It also ensues from this connection that the problems and conditions of implementation and, accordingly, the elements of the solution, are in many respects common.

Systematic knowledge development and knowledge application relying on the two pillars of information technology, that are the modernization of processes and services (an example for the latter is the creation of content industry), as well as the conscious development of society and, as part of this, the modernization of regions and subregions (that is, creation of e-municipalities and e-regions), lay the foundations for the development of a Hungarian knowledge-based society.

Changes and progress will occur in harmony with the specific features of the social, economic and technological environment. The development of the information society and the knowledge-based new economy is an unstoppable global process. We wish to intervene in this process with the strategy in order to

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make development more effective, more rapid and, above all, more conscious, while remaining balanced, just and sustainable.

The PA is one of the most important key areas of the Hungarian Information Society Strategy, because the extent and quality of the informatization of public administration have a fundamental influence on the growth rate of the information society, and consequently, on the performance of society.

This key area includes programs related to providing IT support for the activities of state and local government administration. The main part-areas are:

- central government (state administration, e-government)
- non-governmental state agencies (Courts of Justice, the Parliament)
- local governments.

Electronic government also has an impact on the part areas of the key areas. In respect of electronic government a special part strategy and program plan has been drafted (eGovernment 2005) related to the program for the modernization of state administration.

The above part areas, which, of course, also cover a considerable segment of the special programs in addition to the central programs, are served from a technical point of view by the Public Data program (featured in the third key area of Infrastructure as a field of intervention), which promotes the creation and use of information and IT applications that could be used in several areas, primarily in connection with the creation and management of data base, as well as their organization into structured systems. A task with a horizontal impact on the whole key area of Public administration is the maintenance of transparency and interactivity, enforcing the criteria of democracy within the individual systems. The tools necessary for implementation are provided partly in the eDemocracy program in the key area of Legal-social environment.

Some ideas of the modernization are:

- service-oriented, customer-centric
- outcome-oriented, efficient, cheap
- transparent, accountable
- increasing trust, broadening participatory democracy
- innovative, flexible
- open, collaborative.

The strategy is aimed at four areas primarily in order to provide comprehensive guidance in terms of these areas:

- The transformation of public services in the interest of citizens, enterprises and the public officials working in direct contact with such citizens and enterprises;
- The introduction of integrated services for both the organizations of public administration and the back-office systems of public services promoting the interest of transparent and efficient operation of public administration;
- Increasing the professional competence (technological know-how, receptivity towards technology) of the public sector at the levels of management and implementation in the interest of the efficient provision of public services;
- The development of the e-administration application skills possessed by enterprises and citizens and in particular those who are disadvantaged in terms of the information society.

Local Government - Municipal e-Services

The majority of the municipalities use their resources to perform their mandatory tasks: they usually limit the introduction of e-administration to setting up their own websites and to establishing state-financed eMagyarország points (eHungary points). Seen as the propelling force behind developments, larger municipalities are trying to secure funds for their developments via tendering, while smaller municipalities are unable to spend on developments due to their dire financial situation.

There are many towns where e-municipality development has not been implemented at all; no public access points have been created, and no digitalization developments have been realized to improve websites or public administration services of such settlements. Online accessibility of public services is low, the vast majority of municipalities were unable to respond adequately to the increasing challenges of electronic public administration and an ever-changing environment.

Various modern IT solutions - integrated financial systems, teamwork support, online case management, intelligent telephone customer service programs, work process control, etc. - are only minimally (or not at all) present at the municipal level and larger municipalities are no exceptions to this. Even if some municipalities

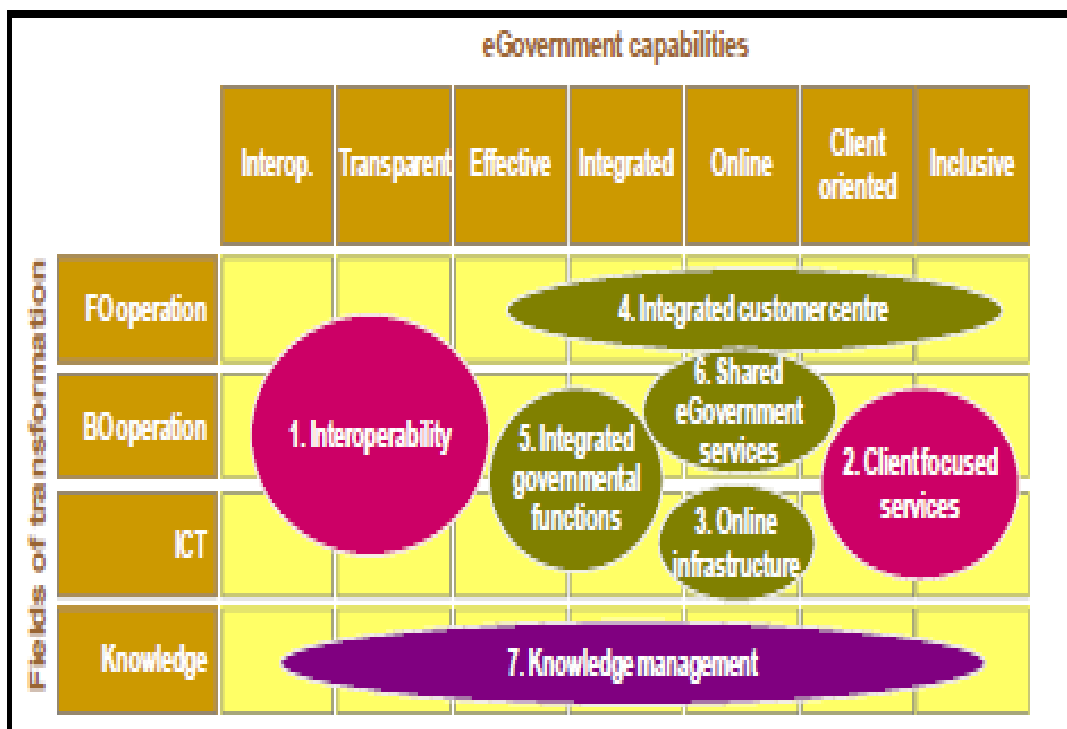
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do have IT support, it usually functions in an isolated form and serves only one or two areas. Furthermore, data traffic between these systems is usually congested and, in most cases, the data are not consistent.

The development of sectoral services in order to make them online as well as the development of a proactive approach regarding to the EU's 20 basic public services, that allows interoperability and uniform processes tailored for clients, taking into account data and technology standards.

The e-administration matrix that determines comprehensive programmes was compiled on the basis of the strategic concept. The e-administration matrix identifies seven comprehensive programmes on the basis of the strategic competencies and the areas affected by transformation:

- Interoperability Comprehensive Programme
- Client-oriented Services Comprehensive programme
- Online Infrastructure Comprehensive Programme
- Integrated Customer Service Comprehensive Programme
- Integrated Government Functions Comprehensive Programme
- Shared e-Government Services Comprehensive Programme
- Knowledge Management Comprehensive Programme



The Comprehensive Programmes contain independent objectives, the achievement of which is supported by the Actions specified in the given

Comprehensive Programme. The Comprehensive Programmes cover various eadministration capabilities and areas of transformation, thus the implementation of all seven Comprehensive Programmes are required for the development of necessary competencies needed for the efficient operation of e-administration.

3.2.1 Theme 1 - Interoperability Comprehensive Programme

3.2.1.1 Objectives

The objective of the **Interoperability Comprehensive Programme** is to establish public administration services that are organized around the needs of citizens and enterprises, to implement the model of the service provider state, as well as to improve efficiency through the simplification of administration processes and by taking advantage of the possibilities afforded by interoperability.

3.2.1.2 Expected results

- **Improved services** to clients, minimization of resource expenditure needs, simplification of administration by the client
- Development of proactive, **caring services**;
- Development of **operational conditions of background institutions suitable for and allowing cooperation**,
- **Increasing the internal efficiency** of public administration, decreasing resource needs, simplification of administration processes.

3.2.2 Theme 2 - Client-oriented services comprehensive programme

3.2.2.1 Objectives

The goal of the **client-oriented services comprehensive programme** is the development of the computerization of sectoral services and the creation of a proactive approach in the field of EU20 services as well as the integration of the results of horizontal programmes into sectoral developments and the consideration of standard, personalized processes as well as data and technology standards forming the basis of cooperation.

3.2.2.2 Expected results

- To bring full-scale online the most popular services is established, which is the **basic requirement of multi-channel administration and active citizen participation**.

3.2.3 Theme 3 - Online Infrastructure Comprehensive Programme

3.2.3.1 Objectives

The objective of the **Online Infrastructure Comprehensive Programme** is the following: all public administration bodies have access to EKG services and electronic administration; the infrastructure of e-payment and the citizen identification system is created in the interest of the development of the infrastructure of full-scale (fourth tier) electronic administration; the KR provides its services to municipalities and other public administration institutions by developing a high-level security control system.

3.2.3.2 Expected results

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- The establishment of the system will bring with it the infrastructure necessary for **cost-effective and client-friendly conditions of e-administration** provided to citizens and businesses:
 - Secure, efficient expansion of the Electronic Government Backbone
 - Development of electronic payment and accounting
 - Development and application of a citizen identification system.

3.2.4 Theme 4 - Integrated Customer Service Comprehensive Programme

3.2.4.1 Objectives

The objectives of the **Integrated Customer Service Comprehensive Programme**:

- ✓ improved service to clients in the interest of ensuring equal opportunities through nationwide personal customer services (in addition to regional offices: decentralized front offices present in every settlement, equipped with systems supporting the use of e-Counselor web services), contact centers and web services.
- ✓ ensuring support to resolve problems or tasks arising in the life of clients,
- ✓ increasing citizen inclusion and supporting the spread of electronic administration.

3.2.4.2 Expected results

- The Integrated Government Customer Service provides several channels for accessing its services :
 - Client-Points based on **direct client relations**, which make services available in the vicinity of clients' places of residence;
 - **Telephone-based** Contact Centre solutions, which provide telephone administration, initiation of cases and in certain cases, administration within a standard structure;
 - **Web platform**, through the government portal and the sectoral portals operating in the integrated structure.

3.2.5 Theme 5 - Integrated Government Functions Comprehensive Programme

3.2.5.1 Objectives

The goal of the **Integrated Government Functions Comprehensive Programme** is to pay attention to the principles of transparency and efficiency, to establish the integrated foundations of internal government operation in the field of financial and personnel management.

3.2.5.2 Expected results

- The most important task of the Budgetary Management System (KGR) is to incorporate the most **important funds flow and management related tasks in one organization**, namely the Hungarian State Treasury.
- The expected results of the establishment of MEH KSZK are the **creation of the organisational and professional frameworks and contents of strategic human resource management**, the realisation of performance measurement and performance enhancement, the facilitation of changes in attitude and the management of the complex transformation process of public administration.

3.2.6 Theme 6 - e-Administration Services Comprehensive Programme

3.2.6.1 Objectives

The goal of the Shared **e-Administration Services Comprehensive Programme** is to develop standard and efficient services at both central and municipal institutions supporting internal electronic operation.

3.2.6.2 Expected results

The goal of the Shared **e-Administration Services Comprehensive Programme** is to develop standard and efficient services at both central and municipal institutions supporting internal electronic operation.

3.2.7 Theme 7 - Knowledge Management Comprehensive Programme

3.2.7.1 Objectives

The objective of the **Knowledge Management Comprehensive Programme** is the establishment of the basic capacities and culture required for the development of electronic operation and client-oriented services within the central government and on the levels of regional, micro-regional and local municipality.

3.2.7.2 Expected results

- The necessity of programme coordination and the interrelation of comprehensive programmes **Development and constant expansion of the e-administration knowledge base** to support the development of the modernization of public administration and e-administration, to ensure the knowledge level necessary for the cooperation of the concerned institutions.
- The knowledge base ensures that the parties concerned can already **take existing services into account when developing institutional strategies**, and apply achieved results.