ECONTENT IN HUNGARY

CONTENT VILLAGE

OCTOBER 2004

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INTRODUCTION

Figure 1 - Map of Hungary



Source: European Commission

Hungary joined EU on 1 May 2004. This medium-sized country (93 036 km²) occupies a central position in Europe. It has no sea access but common borders with the following seven countries: Austria, Slovakia, the Ukraine, Romania, Serbia and Montenegro, Croatia and Slovenia.

With its 10.1 million inhabitants, Hungary, like many other European countries, has an ageing population. Most Hungarians live in towns and cities (63.7%) and almost 18% of the population live in the capital, Budapest.

Proof of the country's modernisation is visible in the breakdown of the population into sectors of activity: 6% in agriculture, 34% in industry and 60% in the services sector. In addition, unemployment stood at a mere 5.8% during the November to January period of 2003-2004.

Since 1997, economic growth has been impressive, with the Hungarian economy recording growth rates around 4% a year. GDP growth at 5.2% in 2000 was the highest since transition, mainly pushed by export growth rates of over 20%. Despite the worldwide economic slowdown, Hungary's economy grew at 3.8% in 2001 and at 3.5% in 2002.

However Hungary has been experiencing an economic slowdown which is principally affecting the industrial sector. From January to July 2003, Hungary's exports amounted to €29.7 billion, and its imports to €34 billion. These figures show an 18.6% drop in total exports and a 15% drop in total imports compared to 2002.

Hungary also has recurring trade deficits in view of the high percentage of imported content present in its exports. Hungary exports mainly machinery and electrical goods, followed by transport equipment.

Hungary aims to enhance its presence in East Central Europe and South East Europe and in key markets, such as Russia and the United States. Among the objectives of Hungary's external economic policy is the further increase of commodities and services exports, diversification of such exports, promotion of Hungarian direct investment abroad, including capital investment and protection of domestic markets if necessary.

INFORMATION AND COMMUNICATION TECHNOLOGIES INFRASTRUCTURE

1 Telecommunications infrastructure

Figure 2 - ICT penetration

Fixed telephony	36%
Mobile telephony	82%
Internet (households)	8%
Internet (enterprises)	82%

Source: NHH 2004

1.1 Legislation and regulation

1.1.1 The Legal framework

The establishment of the legal framework concerning the telecommunications infrastructure can be attributed to the **Ministry of Information Technology (IT) and Communications.**

The Telecommunication Act XL, which came into effect in December 2001, signalled the beginning of the liberalisation of the Hungarian telecommunications market. Prior to integration into the European Union (May 2004), the Ministry of IT and Communications created the Act C of 2003 on Electronic Communications, with the objective of intensifying competition in Hungary's telecommunications market and attaining EU standards. Main objectives:

- Intensify competition between technologies and service providers
- Create transparency on the telecom and Internet markets
- Offer real choices to customers
- Protect consumers against service providers
- Establish harmony with EU principles and expectations
- Accelerate Internet spreading
- Establish the National Communications Authority

http://www.ihm.hu/English/regulations/eht_eng.pdf

http://www.ihm.hu

1.1.2 Regulators

a) Nemzeti Hírközlési Hatóság (National Communications Authority)

The National Communications Authority (NHH) is an independent agency responsible for Telecommunications market regulation; it is also in charge of frequency allocation to telecommunication operators.

The methodology applied by the National Communications Authority is divided into four steps:

- Definition of relevant markets

- Analysis of competition on the relevant market and its efficiency
- Designation of operators with significant market power
- Imposition of obligations

http://www.nhh.hu

b) Gazdasági Versenyhivatal (Office of Economic Competition)

The Gazdasági Versenyhivatal (GVH) is a public institution of national competence which is responsible for the supervision of competition as defined in the Competition Act on a national level, and in the OECD framework on an international level.

The GVH gives advice and proposals relating to the governmental competition policy and the decisions of the government affecting competition and represents public interest.

http://www.gvh.hu

1.1.3 Historic operator: still in a dominant position

a) Capital structure

Matáv Hungarian Telecommunications was established as the legal successor of the former state-owned enterprise in 1991. Up to the end of 1993 the company remained 100% state-owned. The Telecommunications Act effective from July 1 1993 enabled the preparation for the privatisation of Matáv.

In December 1993, the MagyarCom consortium - consisting of Deutsche Telekom and Ameritech International - became the owner of the national telephone concession granted to Matáv and the owner of 30.29% of the capital. At the end of 1995, MagyarCom became the majority owner with 67.36% of the capital. In December 1997, Matáv shares were introduced on the Budapest and New York Stock Exchange.

In 1999, the Hungarian State sold its last 5.75% and kept its Golden Share, which allows the Government to veto any decision made by Matáv's board.

Figure 3 - Matav ownership structure

Shareholder	Percentage of share capital
Hungarian State	1 golden share
MagyarCom (owned by Deutsche Telecom)	59.21%
Publicly held	40.79%
Treasury shares	0.47%

Source: Matáv

b) Activities

From December 2001, date of the liberalisation of the telecommunication market, Matáv has acquired leading positions in the mobile, Internet and data communications markets.

- In fixed line telephony: Matáv holds over 80% of the market with 2 911 500 subscribers. Emitel is one of Matav's subsidiaries. It is a regional carrier of residential and business telecommunications markets.
- In mobile telephony: Westel, the mobile subsidiary was renamed T-Mobile Hungary in May 2004. In June 2004, T-Mobile Hungary held 47.68% of the mobile phone market with approximately 3 913 600 subscribers.
- In Internet access and e-business solutions: Axelero Rt, Matav's subsidiary, is one of the leading companies.

- Cable-television: Matavkabel TV Kft is a subsidiary of Matav.

Since 2002, Matav has greatly increased its access capacity to broadband (ADSL and Cable television). In December 2003, Matáv announced the 100 000th ADSL connection. In 2003, Matáv tripled the number of localities covered by ADSL: the service was available in 175 towns, covering 80% of the population.

http://www.matav.hu

1.2 The market

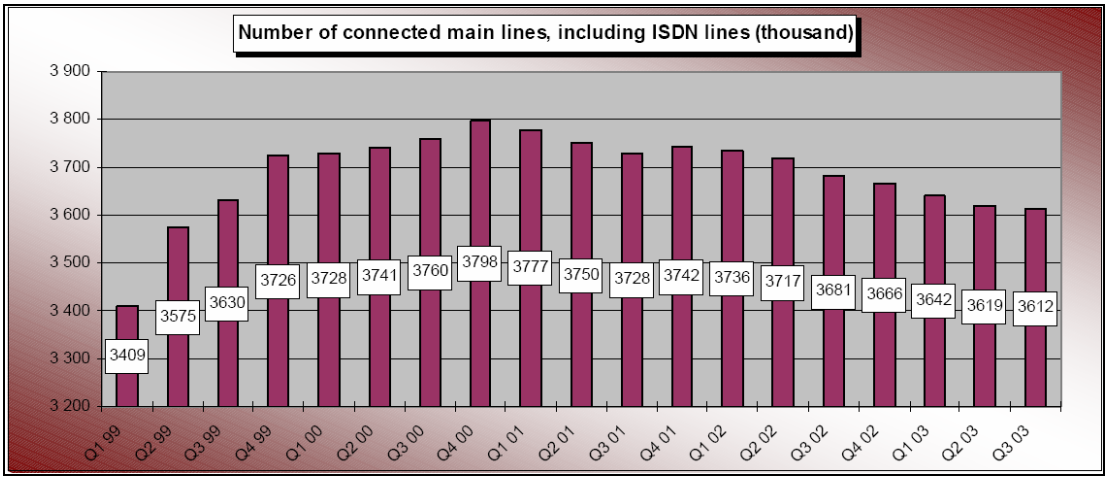
1.2.1 Fixed telephony market: a sluggish market

a) Evolution

Hungary's fixed telephony market was opened to the competition in December 2001. However, the market share of fixed operators has since barely evolved. Matáv and its subsidiary Emitel still hold 81% of the market. The number of operators decreased from 11 to 5 between 2001 and 2004.

There were 35.57 fixed lines per 100 inhabitants in Hungary in June 2004, 1% lower than the previous year. The number of fixed lines is decreasing mainly because of high costs and strong competition from mobile telephony.

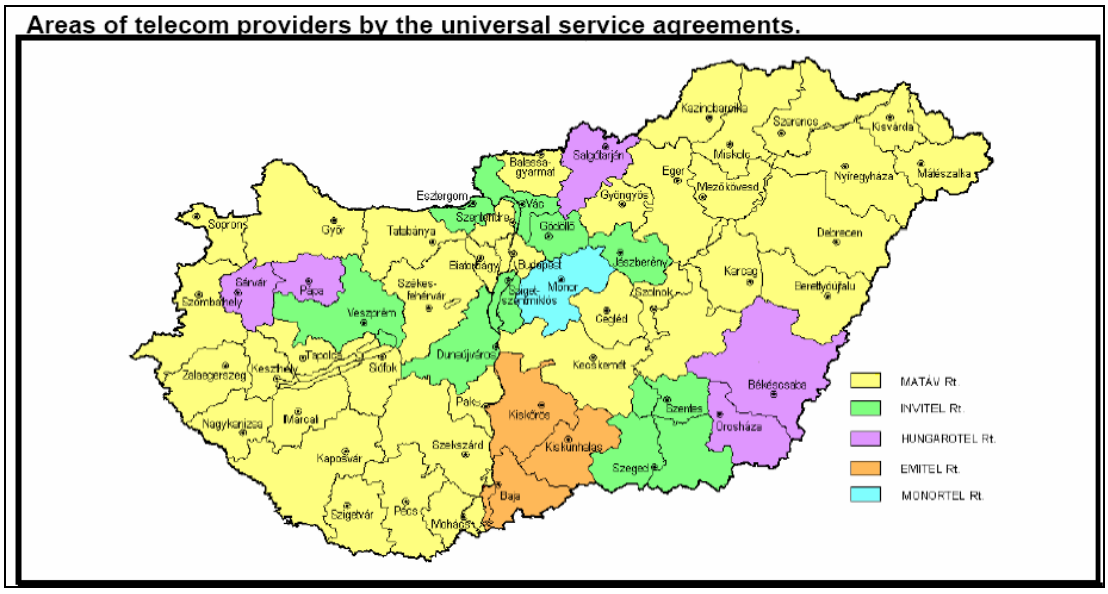
Figure 4 - Number of fixed lines



Source: NHH

In 1995, 54 areas were distributed among operators, giving them 8-year concessions. Matáv was attributed 36 areas and the 18 others were attributed to local operators. These concessions allowed operators to have a monopoly on local calls in attributed areas.

Figure 5 - Area breakdown between local operators



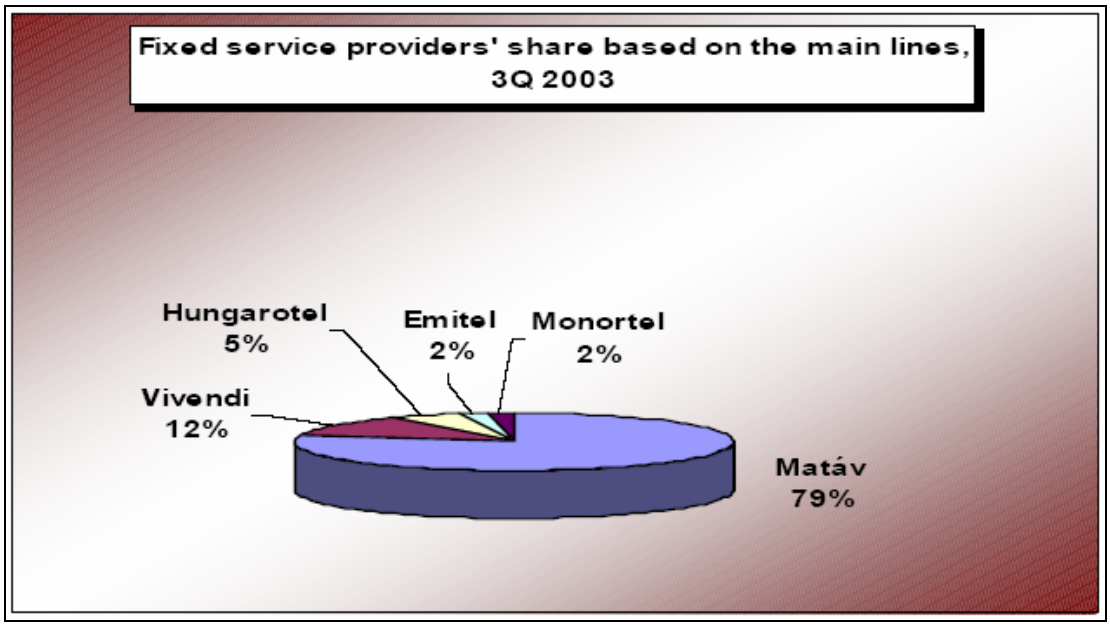
Source: NHH

Carrier Pre-Selection (CPS) has been available for long distance calls, international calls and calls to mobiles since 2002. Since mid-2004, following the expiration of the eight year concessions, Hungarians can use CPS for their local communications. According to experts, the arrival of CPS operators should stimulate the market, which has been stable for several years.

b) Main operators

Aside from Matáv, the market is divided among local operators managing specific areas and CPS operators for international, national and local calls (since mid-2004).

Figure 6 - Market share of fixed operators



Source: NHH

Local operators

- Invitel: Vivendi Telecom Hungary was bought in May 2003 by American groups, GMT Communications Partners and AIG Emerging Europe Infrastructure Funds, and renamed Invitel. Invitel also provides CPS services.

http://www.invitel.hu

- Hungarotel: subsidiary of the American Hungarian Telephone and Cable Corp.

http://www.hungarotel.hu

- Monortel: subsidiary of American United Global Com Inc.

http://www.monortel.hu

CPS operators

- PanTel: subsidiary of Dutch operator KPN

http://www.pantel.hu

- GTS Datanet: sold in 2003 by American operator Global TeleSystems to Russian group Menatep.

http://www.gts.hu

- Tele2: subsidiary of Swedish Tele2, started in April 2004, almost 100 000 subscribers to date.

http://www.tele2.hu

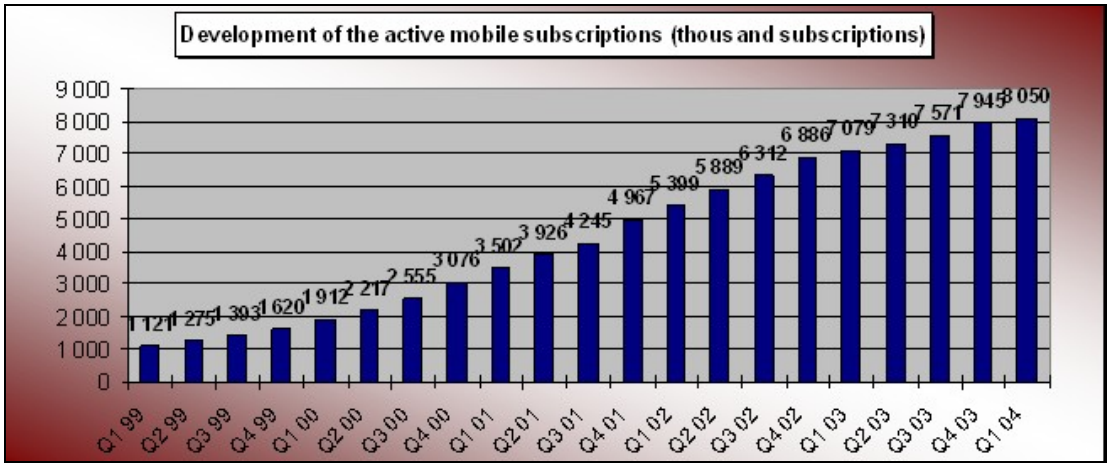
1.2.2 Mobile telephony market

In June 2004, there were 8 207 977 mobile phone subscribers in Hungary, which corresponds to 81.2 mobile phone subscriptions (pre-paid and post-paid) per 100 inhabitants.

a) Evolution

Mobile telephony subscriptions have registered a growth of 720% between 1999 and 2004. Such success is due principally to the low percentage of fixed telephony equipment. However, as the mobile telephony penetration rate is approaching saturation point, market growth has slowed down significantly since the beginning of 2003.

Figure 7 - Mobile subscription evolution



Source: NHH

The highly competitive nature of the Hungarian market is shown by new services and attractive prices and also by intensive marketing policies. The current defining characteristic of the Hungarian mobile market is the major role played by data transmission services (SMS, MMS).

Regarding UMTS, a first call for tender is currently underway. According to the Act C of 2003 on Telecommunications, licences should be attributed by the end of 2004 and UMTS services should be launched in 2006.

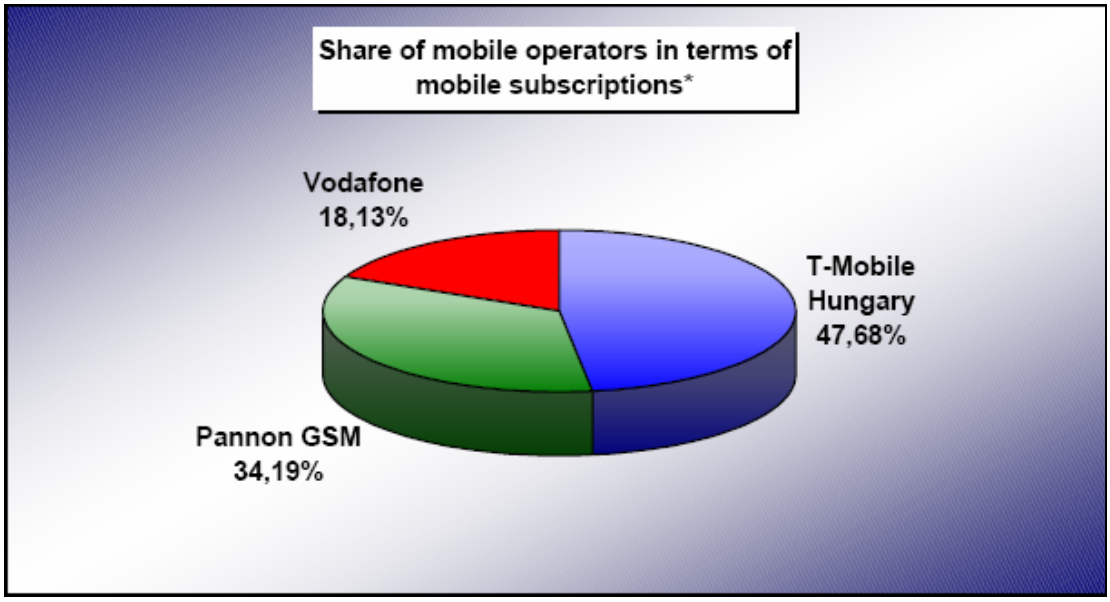
http://www.ihm.gov.hu/jogszabalyok/min_rend_3_gen_mobilr_tervezet.doc

b) Main operators

The fast development of mobile telephony has been helped by the expertise of Hungarian operators; all three are subsidiaries of foreign operators from leading markets (UK, Norway, and Germany).

The market is divided amongst T-Mobile (a subsidiary of Matáv), Pannon GSM and Vodafone. All three operators have been labelled as Significant Market Power operators, which obliges them to submit their pricing to the regulator for approval.

Figure 8 - Market shares of mobile operators



Source: NHH 2004

- T-Mobile: subsidiary of the German operator Deutsche Telecom, 3 913 000 subscribers.

http://www.t-mobile.hu

- Pannon GSM: subsidiary of the Norwegian operator Telenor, 2 807 000 subscribers.

http://www.pannongsm.hu

- Vodafone: subsidiary of the British operator Vodafone, 1 488 000 subscribers.

http://www.vodafone.hu

1.2.3 Internet access

Whilst most households still use dial-up connections, high-speed access is becoming more common both with households and in companies and institutions. Axelero was the first to launch ADSL in Central Europe at the end of 2000, but since all Internet access suppliers provide the service and it is accessible in more than fifty towns in Hungary.

With regard to Internet on mobiles, WAP and GPRS access are now available. They have enabled FAI to develop various added-value services for mobiles, including MMS, voice-mail services, banking consultation and the transfer of video files. The two main mobile telephony operators have already launched their first WLAN allowing high-speed cordless connections. The launch of UMTS is planned for 2006.

a) Home access

The low IT equipment rate in Hungarian households and, in particular, the high costs of Internet access explain why only 8% of households had Internet access at the end of 2003.

This figure, however, represents an increase in Internet access in Hungarian homes: Internet connections increased by 51% in 2003. At the end of 2003, the number of connections had risen to 674 000. The number of broadband subscribers in the country has increased from 63 000 to 260 000. Meanwhile, dial up connections have increased slowly.

Such progression is the result of pressure put on operators by the Government. The former reduced their prices by 25% in mid-2003.

Figure 9 - Type of access

Total	**674 000**
ADSL, Cable	260 000
Dial up, ISDN	391 000
Other	23 000

Source: KSH 2004

b) Work access

Most large companies are connected to the Internet and 74% of companies use broadband to access the Internet. In 2002, strong demand for Internet access was observed in small companies with less significant demand registered in medium-sized companies.

Figure 10 - Internet penetration rate in companies

Total	**82%**
Small (<50 employees)	73%
Medium	88%
Large (>300 employees)	92%

Source: NHH 2004

Hungarian companies use the Internet for basic communication purposes, such as email and web site hosting. In July 2004, 38 000 companies had their own web site, which represents 30% of all companies in Hungary. Other usages like electronic banking and B2B transactions are also starting to develop.

c) Public access

Approximately 30% of Hungarian net users connect from public places: schools, libraries or cyber cafes.

As a part of the Act C on Telecommunication, the Hungarian government spent €110 000 million in 2003 to improve Internet access in public places. One of the main goals of the government is to provide every school in the country with Internet access.

In 2003, there was one computer for ten students in general schools and one for five in secondary schools. In additional, around 500 kindergartens were equipped with PCs and Internet access.

Figure 11 - ICT in schools

Average	General school	Secondary school
Number of full-time ICT teachers	1.6	3.3
Available system administrator (%)	26	80
.... % of teachers not able to use computers	50	32
.... % of teachers using computers for educational purposes	40	58
.... % of teachers using the Internet for educational purposes	23	44
.... % of teachers using e-mail services for educational purposes	19	38
.... % of students using computers for educational purposes	55	77
.... % of students using the Internet for educational purposes	31	64
.... % of students using e-mails for educational purposes	23	54

Source: Education in Hungary 2003, Ministry of Education

The 19 regional public libraries maintained by the government provide Internet access. Most libraries in large and medium-size cities are connected to the Internet.

There are many cyber cafes in Hungary; most of them are located in the Budapest area. Wifi hotspots are opening progressively, mainly in hotels in Budapest.

d) Main operators

In 2003, nine new Internet service providers were launched on the Hungarian market, bringing the number of providers to 71. The Internet access sector generated €124 million in revenues in 2003, an increase of 48% compared to 2002. The main operators are:

- Axelero: subsidiary of Matáv, 142 000 ADSL subscribers, 233 000 dial up subscribers

http://www.axelero.hu

- Freestart: free ISP, more than 250 000 subscribers

http://www.freestart.hu

- GTS-Datanet: 24 000 dial up and 9 000 ADSL subscribers

http://datanet.hu

- Interdotnet: 35 000 subscribers

http://www.hu.inter.net

- Enternet:

http://www.enternet.hu

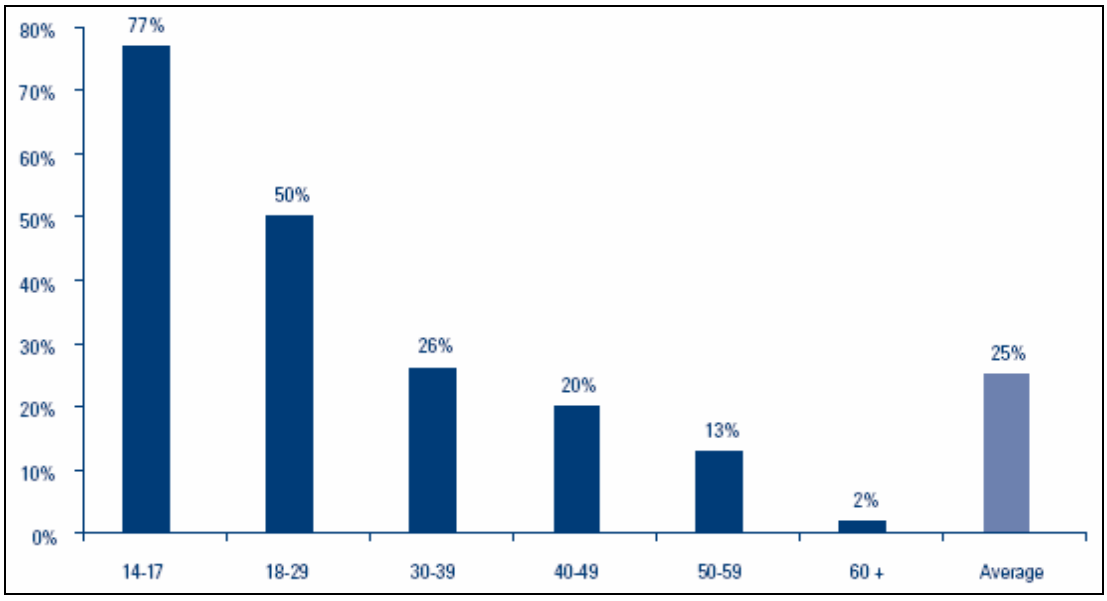
- Invitel

http://www.invitel.hu

2 Hungarian Internet users

More than 75% of secondary school students aged 14-17 use the Internet, and 50% of Internet users are aged under 30. Internet usage among people above 40 is lower than the national average (15%).

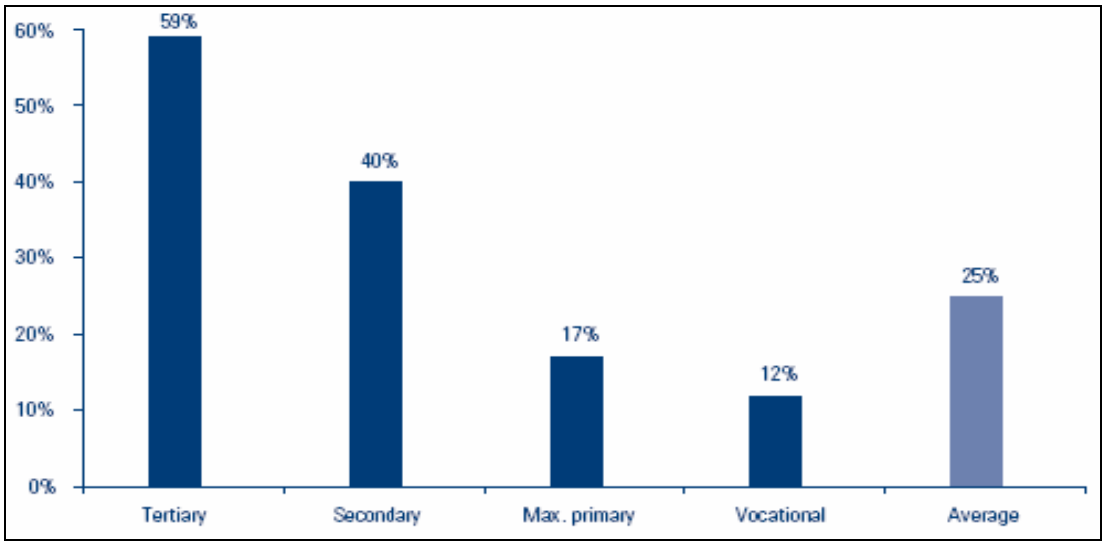
Figure 12 - Percentage of Internet users by age group



Source: Ministry of Information Technology and Communications 2004

In Hungary, Internet usage has a close correlation with level of education. There is a significant jump in Internet usage in secondary and tertiary education.

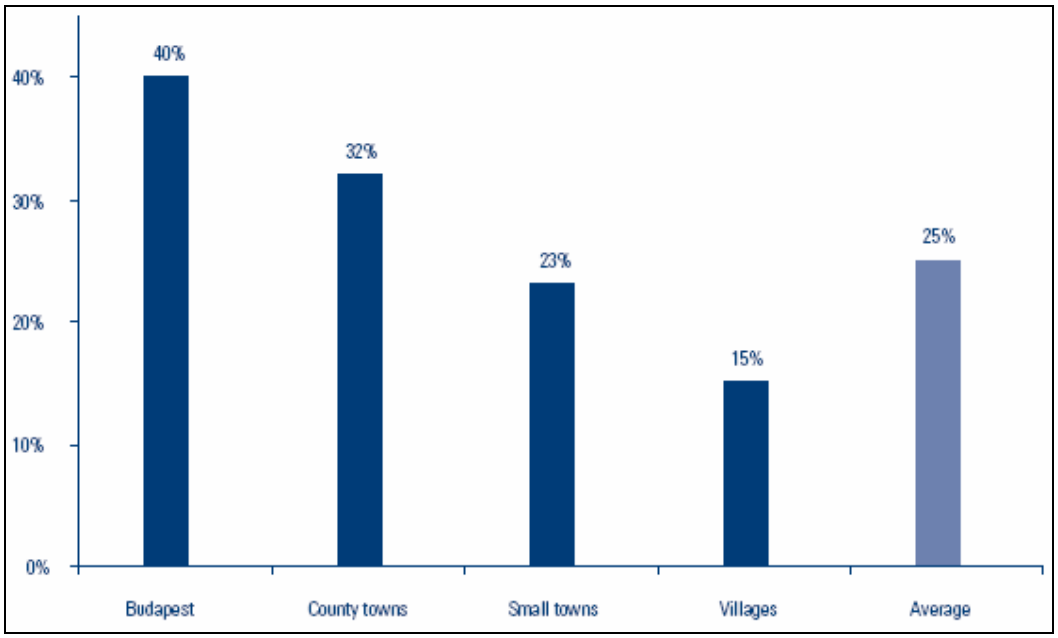
Figure 13 - Percentage of Internet users by education level



Source: Ministry of Information Technology and Communications 2004

Internet usage prevails in Budapest, the capital, and in the big cities.

Figure 14 - Percentage of Internet users by location



Source: Ministry of Information Technology and Communication 2004

Figure 15 - Most visited web sites

Origo	General portal	http://www.origo.hu
Index	General portal	http://www.index.hu
Startlap	Directory	http://www.startlap.hu
Hazipatika	General Portal	http://www.hazipatika.hu
Portfolio	Financial webzine	http://www.portfolio.hu
Terminal	ICT webzine	http://www.terminal.hu

Source: Digital Media Europe 2004

THE DIGITAL CONTENT OFFER IN HUNGARY

1 The media offer

Due to the low penetration rate of Internet in Hungarian households, the media offer on the Internet is limited.

The Hungarian language content market is relatively small, which limits investors' willingness to develop additional services. Besides, according to the Hungarian Ministry of Education, only 15% of Hungarian adults speak a foreign language, which limits the penetration of foreign media portals, unlike other Central European countries like Slovenia.

The efforts made by the Government to spread broadband access and foreign language practice should increase the attractiveness of the media market in the coming years.

1.1 On-line news sources

1.1.1 Newspapers

Most Hungarians still prefer to read the news off-line. However, all major newspapers have a web site. Main newspapers

- Nepszabadsag: http://www.nepszabadsag.hu
- Metro:http://www.metro.hu
- Budapest Business Journal: http://www.bbj.hu
- Budapest Sun: http://www.budapestsun.hu
- Budapest Week: http://www.budapestweek.com

1.1.2 Radio/TV

The National Radio and Television Commission is the institution in charge of further development of on-line TV and radio streaming.

http://www.ortt.hu

The on-line radio and TV market is not developed yet, due to limitations in broadband access.

Mavip, the first portal to provide on-line radio streaming was recently shut down due to financial issues. Streaming is still available on the main radio web sites.

Magyar Radio: http://www.radio.hu

National TV stations also offer streaming or on-demand video shows, but these services are not much used.

- Magyar Television: http://www.mtv.hu
- Magyar ATV: http://www.magyaratv.hu
- Duna TV: http://www.dunatv.hu/video.html
- Fix TV: http://www.fix.tv/live.fix
- Korridor: http://www.korridor.tv

1.1.3 Archives and libraries

Hungary has more than 5 000 public libraries and more than 100 public museums throughout the country.

The State National Digital Archives provides access to all digitisation initiatives. Development of the National Digital Archives is done through the following state-funded programmes:

- Digital archiving of national cultural assets
- Content development
- Digitisation of decaying relics
- Creation of a digital curriculum database
- Creation of the National Audiovisual Archives

http://www.nda.hu

Main archives and libraries

- WebKat: On-line catalogue of Hungarian Internet sources.

  http://www.webkat.hu

- Digital Literary Academy: On-line database of Hungarian contemporary literature.

  http://www.neumann-haz.hu/cgi-bin/DIATxcgi?infile=diat_vm_main_menu.html

- National Audiovisual Archive: On-line archive of Hungarian's audio and video heritage.

  http://www.filmintezet.hu

- National Portal for Cultural Heritage: This portal provides extensive information on Hungarian culture. It is updated by the Hungarian Ministry for Cultural Heritage.

  http://www.kultura.hu/nkom

- Cultural Events Programme: Directory of cultural events in Hungary

  http://www.est.hu

- Hungarian Museums Portal

  http://www.museum.hu

- Hungarian Theatres Portal

  http://theater.hu

2 E-commerce

2.1 On-line shopping

The e-commerce sector was previously of marginal importance in Hungary but, during 2003, on-line economic activity increased with the establishment of 290 on-line stores selling €22 million worth of goods to Hungarian net users.

The legislative measures adopted in 2001 assisted the development of e-commerce.

The e-Commerce Act: This Act contains measures dealing with information to be provided to consumers, data protection issues, contracts via the Internet, and spam.

The Digital Signature Act: This Act aims at promoting e-commerce by regulating electronic signatures in line with the provisions of the EU Directive on electronic signatures.

In addition, the rise in electronic commerce can also be explained by the increase in Internet penetration rate and the multiplication of services around e-business (possibility of carrying out transactions by SMS, Internet access by WAP, etc.).

2.1.1 B2C

There are still few Hungarians who purchase on the Internet. However, certain sectors of B2C are experiencing strong growth, particularly Internet services offered by banks and insurance companies.

The development of e-commerce is still slow because electronic signatures are little used and due to the limited use of credit card transactions. Only 8% of transactions are done by credit card, with most net users preferring cash-on-delivery transactions. However, credit card usage is growing. In 2003, MasterCard topped the 1 000 000 customers milestone. According to specialists, e-commerce should experience high growth in the coming years.

Currently, the main goods bought on the Internet in Hungary are books, CDs, DVDs and electronic products.

Main on-line stores

- G'Roby: Groby delivers standard groceries in the Budapest area. Payment can be made by credit card, bank transfer or cash-on-delivery.

http://www.groby.hu

- Libri: Libri is the leading bookstore, visited by 120 000 people a month.

http://www.libri.hu

- Uhu: Internet bookshop, also sells CDs and DVDs.

http://www.uhu.hu

- Malev: Flights reservations, car rentals and various travel-related services.

http://www.malev.com

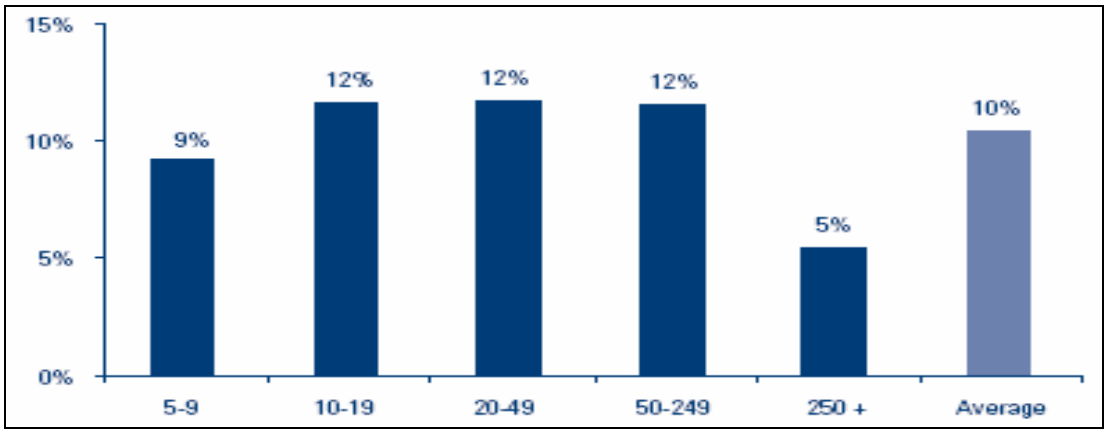
- SkyEurope: Central European discount Airline Company.

http://www.skyeurope.com

2.1.2 B2B

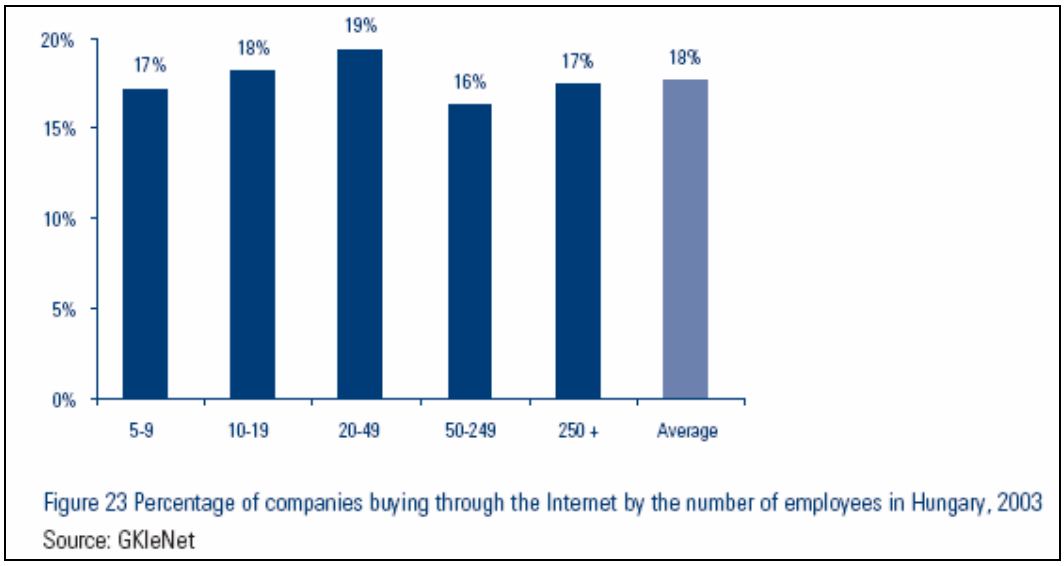
Despite the growing access to the Internet, only 10% of firms with such access sell products via the web.

Figure 16 - Companies selling through the Internet



Source: Ministry of Information Technology and Communications 2004

Figure 17 - Companies buying through the Internet



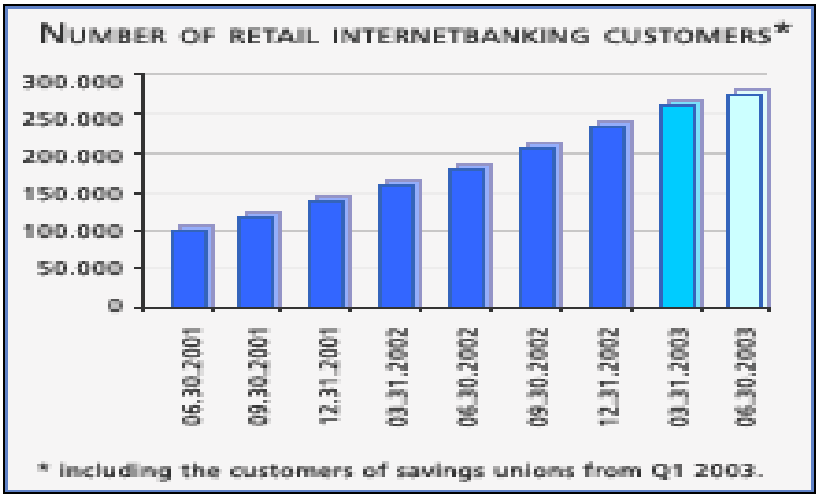
Source: Ministry of Information Technology and Communication.2004

Concerning B2B transactions, the majority of exchanges are carried out via Electronic Data Interchange systems. EDI was introduced in Hungary in 1996 and now has more than 1 500 applicant companies, most from retail, automotive and the fast-moving consumer goods sectors.

2.2 On-line banking

In 2003, Hungarian banks had more than 270 000 Internet banking customers. Meanwhile, the number of Internet banking corporate customers has reached over 50 000.

Figure 18 - Retail Internet banking customers



Source: GKI

Internet banking has still to develop in Hungary. Development is slow because of the low penetration rate of Internet access in households and by Hungarian's global lack of trust in electronic transactions.

To increase e-banking usage, several banks offer complete packages including a regular account, a credit card, access to internet banking services and low cost internet access, for example Bankoweb's Net Konto.

Main on-line banks

- OTP Direkt: Part of OTP, the former state-owned bank (until 1995), holds approximately 80% of the on-line banking market.

http://www.otp.hu

- BankoWeb: Subsidiary of Italian bank San Paolo.

http://www.bankoweb.hu

- Erste Bank: Subsidiary of Austrian Bank Erste merged with Postabank on 31 August 2004.

https://netbank.erstebank.hu

- K&H Bank: K&H was previously part of the National Bank of Hungary until 1987.

http://www.khb.hu

- CIB: Subsidiary of Italian Gruppo Banca Intesa, won the 2002 and 2003 "Internet bank of the year" award, attributed by well-known portal Index.

http://www.cib.hu

3 Public interest services

3.1 Programmes to develop Internet content

3.1.1 National programmes

eHungary 2004-2006

With the integration to the EU in May 2004, and Hungarian ICT penetration still lagging behind the EU average, the Hungarian government decided to launch the eHungary 2004-2006 Programme in order to catch up.

eHungary's global aim is to accelerate the 'electronization' of the economy and in other spheres of society, also to develop the ICT knowledge of the population, and to provide an efficient and homogeneous infrastructure throughout the country by 2006.

eHungary defines guidelines for several aspects of Hungarian society:

- eDemocracy: development of a public information platform to keep Hungarians involved in the democratic process, creation of a reliable electronic signature.
- eChance: reduction of social divisions (ethnic origin, age, gender, status, physical, regional) through ICT usage.
- eGeneration: development of young and older generations' ICT awareness. Creation of educational networks, on-line courses and lifelong training.
- eState: creation of a digital platform to allow citizens and business organisations to access electronic administration.
- eHealthcare: creation of a health network to enhance the medical process.
- eJustice: creation of a justice network to simplify legislative procedures.
- eCulture: preservation of cultural heritage through digitalization of documents, creation of electronic museums, archives and libraries.
- eEconomy: development of secure transactions, remote employment. The IT and knowledge markets should become priorities.

The Hungarian government has defined many objectives to be fulfilled by 2005:

- A public web reaching every locality and public administration institution in Hungary
- Public data and services must be made accessible via the web
- The range of public or communal access facilities must be continuously extended (post offices, schools, libraries, digital cultural centres, telecommunication centres, Internet cafés, etc.)
- Through a network of public or communal access points, electronic services must be made accessible to everyone
- One quarter of households should have access to the web
- There should be quality Internet access in all schools
- The number of small and medium-sized enterprises using the web should double
- The ratio of those in remote employment should reach 3%
- In the interest of maintaining long-term competitiveness, a broadband research network, which serves the purposes of research, higher education and public collections and is independent of the public network, must be developed on an ongoing basis.

http://www.ihm.hu/English/_20030211_5.html

3.1.2 European Programmes

eEurope 2005

eEurope 2005 is an international programme launched at the Seville European Council in June 2002. It aims to develop modern public services (e-government, e-learning services, e-health services) and a dynamic environment for e-business through widespread availability of broadband access at competitive prices and a secure information infrastructure.

6th Research and Development Programme (2002-2006)

A European programme aimed at developing and financing technological research. One of the parts of this programme concerns information technologies and its objective is to encourage the development of technologies in the fields of hardware, software and applications so as to strengthen the competitiveness of European industry and to give European citizens generalised access to the IT society.

European Digital Content for the Global Networks (2001-2005)

A multi-annual community programme to stimulate the development and use of European digital content on global networks and to promote linguistic diversity in the IT society.

3.2 e-Government

The government has formed an inter-departmental Coordination Committee, thus providing a forum in preparation for the country's IT society and e-government policies.

This Committee relays the agreed policies to the different government departments. The Ministry of Information Technology and Communications coordinates efforts related to ICT implementation projects at the regional and local levels.

In central government, the Electronic Government Centre at the Prime Minister's office is in charge specifically of the coordination and implementation of e-government policies.

Hungary's new e-government portal, **Magyarorszag.hu,** was launched in September 2003 to replace the former eKormanyzat.hu. It is at the same time an institutional portal and a services platform. It will provide access to 56 interactive services, including notification, extension of driving licence validity and birth certificate amendments, by the end of 2004.

The most commonly used on-line service is income tax declaration (web site of the Ministry of Finance). In 2003, 21% of income tax returns were made through the internet. On this web site, all forms are downloadable for the supply of data and declaration of taxes, but then they have to be submitted off-line.

Although most Hungarian public services can be accessed on-line, they are mainly simply information providers. The sophistication level is still low.

In November 2003, the government adopted the Hungarian Information Society Strategy. One of the key parts of this Strategy is the new eGovernment 2005 Strategy whose aim is to make public administration and the working of the state more efficient and to provide better services for citizens.

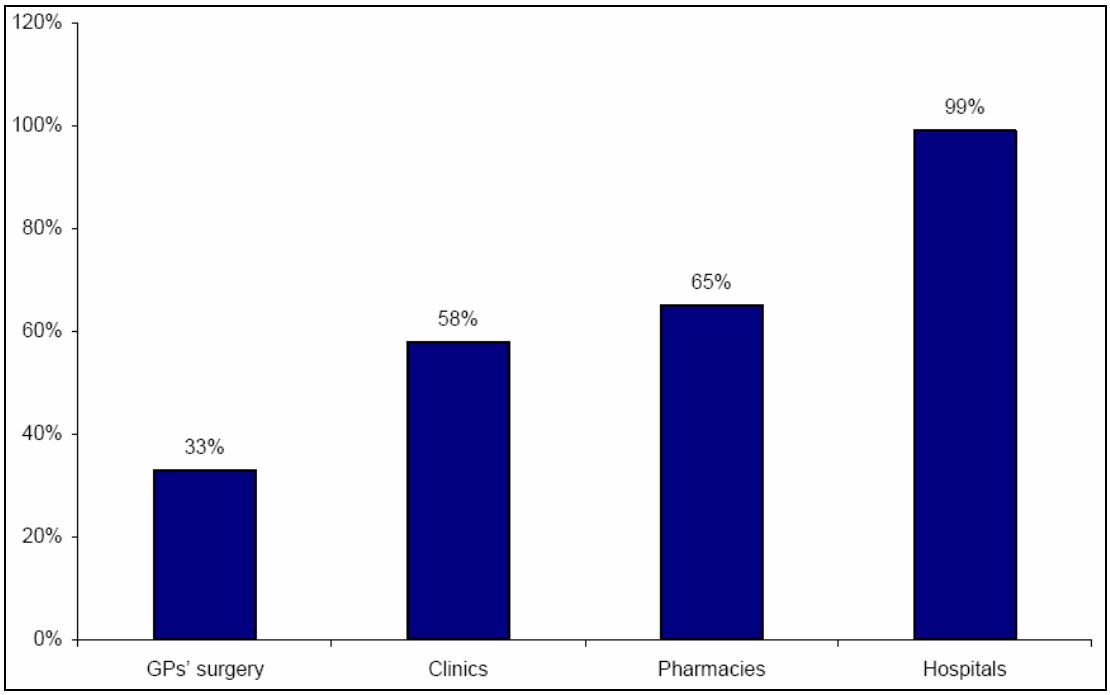
Governmental institutions are currently implementing electronic certification in on-line services, in order to stimulate on-line administration usage, as specified in the eHungary Plan2004-2006.

http://www. magyarorszag.hu

3.3 e-Health

A few years ago, computers in medical practices were often outdated, with only a small proportion networked. Another problem was the various data standards used, which limited efficient data exchanges between different healthcare actors.

Figure 19 - Health Institutions connected to the Internet



Source: GKI 2003

In order to accelerate ICT integration, the Government launched a nationwide networking process in 2003. This should allow all Public Health Institutions to be connected through a single network. This upgrading is funded by the EU PHARE Programme, whose main goal is to develop public administrations in European countries.

http://www.eszcsm.hu/eszcsm/eszcsm_angol.main.page

Several initiatives have been launched to take advantage of the improving ICT infrastructure in healthcare institutions.

- Health Sector Portal:

  The Health Sector Portal will provide free access to multilingual information for health professionals and citizens. The portal is still under development, but can already be accessed on-line.

  http://agazat.eszcsm.hu/eszcsm/agazati_angol.main.page

- Retransplant:

  Retransplant is a network of organ transplant coordinators, donor centres and diagnosis specialists. The aim is to increase the effectiveness of organ transplant services Europe-wide.

  http://retransplant.vitamib.com

- The Virtual clinic:

Applied Logic Laboratory currently works on a telemedicine system which is able to create unified virtual information space covering the actual activity spaces of different health care institutions and locations.

http://www.all.hu

- ProRec:

This public service has been set up to promote the use of Electronic Healthcare Records and Hospital Information Systems.

http://www.prorec.hu

- Multifunctional Smart Card for Doctors:

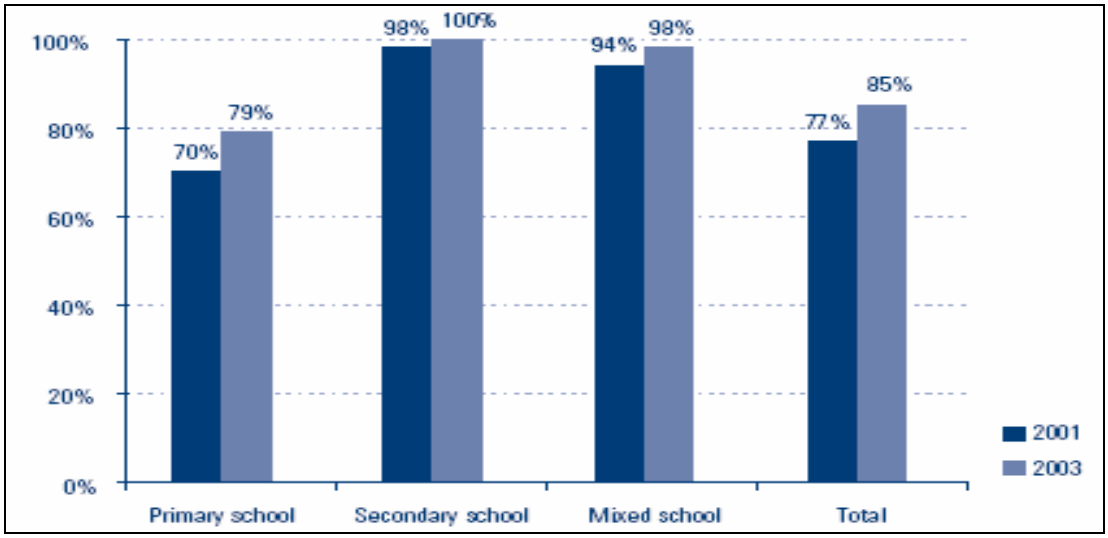
This card functions as a medical ID and a databank card. The built-in chip will also allow future developments: authentication, certification of medical education, digital signatures, etc.

http://www.nkth.gov.hu/letolt/k+f/kf_angol/ehealth/mok

3.4 e-Learning

In order to increase Internet knowledge in younger generations, the Government launched the Sulinet Programme in 1996. The aim of Sulinet was to improve ICT infrastructure in educational institutions. During the 1996-2002 periods, ICT equipment level has increased considerably. In 2003, 85% of educational institutions were connected to the Internet.

Figure 20 - Internet access in education



Source: GKI

In 2003, the Government launched the second phase of Sulinet: "Sulinet Express". Sulinet Express has two main objectives: providing all schools with broadband access by 2005 and helping teachers, students and families with children to buy computers or other ICT-related products.

People who buy a computer under the Sulinet Programme can deduct up to €240 from their taxes. This measure has been successful so far, as 200 000 participants joined the programme in nearly one year. 60 000 PCs have been purchased for an estimated value of €120 million.

In addition, the Sulinet portal provides extensive content for teachers, students and parents.

http://www.sulinet.hu

Language is also considered as a barrier: Hungarian is only spoken by 15 000 000 people, which makes it a small market for e-content in the European Common Market.

To stimulate foreign language learning, the Hungarian started the “New Year of Language” Programme in 2004. This Programme allows secondary schools to create a new year, called “0”, which will be dedicated to language learning with extensive ICT support.

Some matters regarding education still haven’t been resolved, including methods of ICT teaching, copyright issues, Hungarian language content and content management systems.

In order to solve these issues, the Hungarian Ministry of Education recently put forward the idea of creating National Clearinghouses for Educational Content managed by the EU, which will deal with copyright and translation matters.

http://www.om.hu

CONCLUSION

In the years before Hungary integrated the European Union, the Government made a large effort to develop ICT infrastructure, by establishing ambitious programmes, liberalising the telecom market completely and exerting constant pressure on market players. On joining the European Union, Hungary had almost caught up with other countries with regard to its infrastructure development.

However, certain obstacles remain:

Penetration of new technologies, and of the Internet in particular, in Hungarian households is limited by the high cost of equipment and access.

Most companies are well equipped and have access to Internet, but do not yet use it to reduce costs and develop new markets.

A large amount of work still remains to be done with regard to developing Digital Content, again limited by the low penetration rate of Internet in households.

With the aim of creating a “culture of new technologies” with Hungarians, the Government has set up the eHungary Programme 2004-2006 which covers all aspects of Hungarian society including education, administration, commerce and health. This programme should enable new technologies to be fully assimilated into daily home life and into Hungarian companies by 2006. At a European level, it will allow Hungary to improve its economic and cultural influence within its geographical region.

SOURCES

1 Government and regulations

Official Portal of the Hungarian Government

http://www.magyarorszag.hu

Act C of 2003 on Electronic Communications

http://www.ihm.hu/English/regulations/eht_eng.pdf

Ministry of Informatics and Communications

http://www.ihm.hu

Ministry of Health, Social and Family Affairs

http://www.eszcsm.hu

Ministry of Education

http://www.om.hu

National Communications Authority

http://www.nhh.hu

Office of Economic Competition

http://www.gvh.hu

Hungarian Central Statistical Office

http://portal.ksh.hu

eHungary

http://www.ihm.hu/English/_20030211_5.html

eEurope 2005

http://europa.eu.int/information_society/eeurope/2005/index_en.htm

6th Research and Development Programme (2002-2006)

http://europa.eu.int/comm/research/fp6/index_en.html

European Digital Content for the Global Networks (2001-2005)

http://www.cordis.lu/econtent

2 Operators

Matáv

http://www.matav.hu

Invitel

http://www.invitel.hu

Hungarotel

http://www.hungarotel.hu

Monortel

http://www.monortel.hu

PanTel

http://www.pantel.hu

GTS Datanet

http://www.gts.hu

Tele2

http://www.tele2.hu

T-Mobile

http://www.t-mobile.hu

Pannon GSM

http://www.pannongsm.hu

Vodafone

http://www.vodafone.hu

Axelero

http://www.axelero.hu

Freestart

http://www.freestart.hu

GTS-Datanet

http://datanet.hu

Interdotnet

http://www.hu.inter.net

Enternet

http://www.enternet.hu

Invitel

http://www.invitel.hu

3 Media

Nepszabadsag

http://www.nepszabadsag.hu

Metro

http://www.metro.hu

Budapest Business Journal

http://www.bbj.hu

Budapest Sun

http://www.budapestsun.hu

Budapest Week

http://www.budapestweek.com

National Radio and Television Commission

http://www.ortt.hu

Magyar Radio

http://www.radio.hu

Magyar Television

http://www.mtv.hu

Magyar ATV

http://www.magyaratv.hu

Duna TV

http://www.dunatv.hu/video.html

Fix TV

http://www.fix.tv/live.fix

Korridor

http://www.korridor.tv

4 Archives and libraries

National Digital Data Archives

http://www.nda.hu

WebKat

http://www.webkat.hu

Digital Literary Academy

http://www.neumann-haz.hu/cgi-bin/DIATxcgi?infile=diat_vm_main_menu.html

National Audiovisual Archive

http://www.filmintezet.hu

National Portal for Cultural Heritage

http://www.kultura.hu/nkom

Cultural Events Program

http://www.est.hu

Hungarian Museums Portal

http://www.museum.hu

Hungarian Theatres Portal

http://theater.hu

5 E-stores

G'Roby

http://www.groby.hu

Libri

http://www.libri.hu

Uhu

http://www.uhu.hu

Malev

http://www.malev.com

SkyEurope

http://www.skyeurope.com

6 E-banks

OTP Direkt

http://www.otp.hu

BankoWeb

http://www.bankoweb.hu

Erste Bank

https://netbank.erstebank.hu

K&H Bank

http://www.khb.hu

CIB

http://www.cib.hu

7 E-Health

Health Sector Portal

http://agazat.eszcsm.hu/eszcsm/agazati_angol.main.page

Retransplant

http://retransplant.vitamib.com

The Virtual clinic

http://www.all.hu

ProRec

http://www.prorec.hu

Multifunctional Smart Card for Doctors

http://www.nkth.gov.hu/letolt/k+f/kf_angol/ehealth/mok

8 E-Learning

Sulinet

http://www.sulinet.hu