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## IS Mentors and Peculiarities in the Development of the Hungarian Information Society

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### Abstract

The information society of Hungary has developed at a moderate pace in recent years. About half of Hungarian society has been reached by the more significant developments in infrastructure, so this group can be considered as being conscious 'netizens' who meet the European average in regard to almost all of the indicators.

According to the results of our research the digital divide in Hungarian society is deepening and there are two main reasons for this: firstly the very unfavorable settlement structure of the country and secondly a lack of interest in PCs and the Internet and no motivation to change this. Most of those excluded have no direct contacts with the feature tools (computers, the Internet) or with persons who use these tools in their everyday lives. Social investment, training and motivation programs to break down cultural and knowledge barriers are necessary.

### Introduction – the state of the information society in Hungary

In comparison to the access to ICT tools and to the basic data of use in the EU member states it can be observed that Hungary is still lagging behind the EU average. According to the analysis made by the World Economic Forum (2006), which examines the implementation of the targets set in Lisbon (to become a competitive knowledge based economy), it was exactly in the area of the information society where Hungary showed the weakest performance of the examined dimensions. The number of households with Internet access and internet users is still low in Hungary. Considering the proportion of broadband access, the picture is ambiguous: this data for Hungary is well over the EU average (as can be observed, the number of households that use a modem or ISDN is half the EU average), and this number has even increased since the data collection in 2006. The high rate of broadband access is to no avail when the number of internet users is so low.

All in all, it can be stated that the majority of the Internet user population has changed over to the solutions that are up-to-date in the domestic environment, and so the disadvantages experienced by those excluded from it have increased even more.

*Internet owner households, type of access and proportion of the Internet users in Hungary and the EU average:*

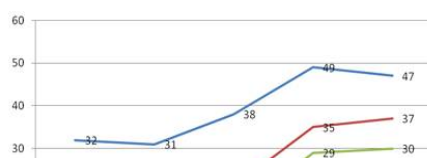
	Internet owner households	Proportion of households with broadband access	Proportion of households using a modem or ISDN to connect to Internet	Proportion of regular Internet users aged 16-74
EU 27 average	65%	56%	8%	60%
Hungary	55%	51%	4%	57%

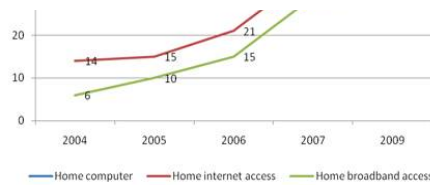
### Source: Eurostat 2009

The information society of Hungary has developed at a moderate pace in recent years. About half of society has been won over by the important infrastructural developments (e.g. Schoolnet, eHungary Access Points, e-government and broadband Internet investments), so this group can be considered as being conscious 'netizens' meeting the European average in regard to almost all of the indicators. Unfortunately, the independent Ministry of Informatics was dissolved four years ago, and most of its responsibilities delegated to the Ministry of Economy and Transport which is responsible for several other fields, thus the information society strategy accepted by the government has not been continued. Moreover, all this is happening in a period when the country is facing the difficult and long-term task of socializing favorable infrastructural bases.

According to the results of our research<sup>[1]</sup> the digital divide in Hungarian society is deepening and there are two main reasons for this: the very unfavorable settlement structure of the country and the lack of interest or even negative attitudes towards computers and the Internet. Almost 50 percent of the adult population is digitally illiterate, and most of these excluded people have no direct contacts with the feature tools (computers, Internet) or with persons who use these tools in their everyday lives.

The WIP surveys made on the use of computers and the Internet show that almost half of the Hungarian population have strong aversions to the use of computers, and thus to the use of the Internet or any other interactive ICT tools. 51 percent of the Hungarian adult population did not use a computer in 2009, and 53 percent are not internet users according to the estimates of the World Internet Project. And these figures are stagnating.





**Access to computers, the Internet and broadband at home (according to percentages of households, source: World Internet Project 2004-2009)**

Unfortunately, the poor results of the basic access indicators reveal the extremely low-level digital literacy rate of society. By 2006 only 32 percent of the Hungarian population had attended courses offering some kind of computer knowledge. In the Scandinavian countries this rate was between 55-70 percent, and even the EU average reached 40 percent.

The following diagram makes it clear that the majority of the Hungarian population learns the basic skills pertaining to PCs and internet usage on their own, in an autodidactic way, and that adult education hardly offers any help in this regard.

Where did you learn the basics of PC and internet usage?:

	In proportion to all the answers (%)
In practice, while using them	27.6
Through self-education	19.2
Taught by colleagues, friends or relatives	18.5
Within the framework of the school system, education	18.5
At courses within the framework of adult education, on own initiative	8.6
At a course made obligatory/suggested by an employer	7.1
Total	95.5

(Source: Central Statistical Office (KSH), 2006)

Almost half of the adult population is not a member of the network society, and most of the population do not have the slightest contact with the feature tools of the information society such as PCs or the Internet. We have very little information on the expectations and requirements this considerable number of people have in relation to the information society.

Six out of ten non-users of the Internet have never heard about the advantages of using the net personally from family, relatives or friends. This is well reflected in the fact that today it is definitely the motivation barriers – not being interested or not needing the net – that are the main factors rather than financial restrictions.

This, of course, may have serious socio-economic consequences. The digital divide in Hungary's population is already perceptible alongside the slow development of the information society. Unfortunately it is highly likely that the country will remain culturally torn into two for good: about one third of society is able to keep up with the changing trends in the information society, and able to adapt to the permanent technological changes – e.g. use of mobile tools or broadband Internet access – and able to use a wide range of online services while about two thirds of the adult population demonstrate no interest in or have a negative attitude towards the feature tools of the information society. The latest set of data from the World Internet Project highlights this: while penetration and usage is stagnating, the intensity of use is growing significantly, so the "user-half" of the population are really taking advantage of the new technologies.

Thus on one hand the data shows that the digital gap has deepened in Hungarian society, for most people – almost half of the adult population – use PCs and for the others, the Internet has not become accepted or is not required at all as an everyday activity, meanwhile the infrastructural development and investment implemented by the government have not generated an automatic change of culture. The country has definitely balked at the challenge posed by the information society.

Hungary lacks the soft infrastructure and services which could promote cultural change and play an important role in bringing round the non-users. So far the government has focused on the hard (physical) infrastructure which is, of course, necessary but the process was far too one-sided. A good example of this is the network of eHungary points which is a part of the Public Network Program. A physical infrastructure has been established which is used almost exclusively by the already-users, and this situation will not change until human services are also provided. There are far too few opportunities for the non-users to gain personal experiences of the advantages offered by the worldwide network, and there are far too few experts and services offering direct help. The situation is even worse in the small communities around the country.

**Behind the numbers: changing cultural and material reasons**

The basic data on digital literacy and the divide of the domestic information society are quite well known by researchers and decision makers, however, the deeper, cultural and attitude-like reasons influencing the spread of ICT tools have not yet been discovered, and the related population segmentation has not yet been carried out.

The deeper analyses made within the framework of the World Internet Project, already introduced the fact that in Hungary cognitive obstacles are making an increasing contribution to people's rejection of the Internet. With the help of the WIP questionnaire these two aspects can be discerned through the following variables:

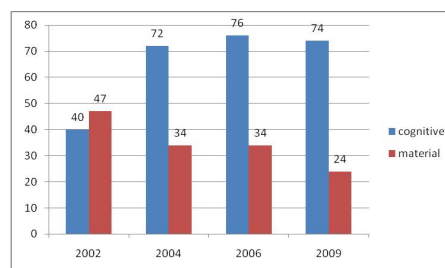
**Material aspect**

- Owned computer not good enough
- Not own computer
- Too expensive
- Access too slow
- Difficult to get access

**Cognitive aspect**

- Does not need it
- Not interested
- Does not know how to use it
- Fear of technology
- It is not for children
- Pornography
- Personal data protection
- Viruses
- Too many ads

Analyzing these data we can see that the cognitive aspects have increased in significance during the last decade.

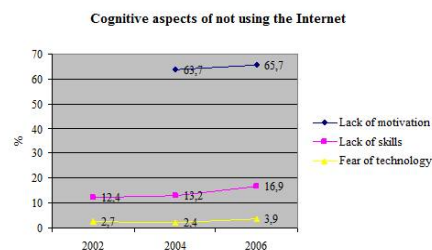


#### **Why not use the Internet? (In the percentage of non-users Source: WIP, 2002-2009)**

Those stressing material reasons primarily refer to financial ones. It is possible that obtaining an up-to-date computer also allowing the use of the Internet represents too great a financial burden for the family, or access is too expensive, complicated or slow. Considering the fact that the country still has hundreds of small settlements with no broadband Internet at a payable price or no such service at all, the latter considerations must be given serious consideration.

The reduction in the number of the material aspects can be explained by several factors. The costs of Internet usage have considerably fallen during the last four years, and flat rate broadband Internet access has become general. The increasing significance of the cognitive barriers is primarily the result of a lack of interest. According to the latest data, almost half of the non-users avoid the Internet because they think they do not need it. In regard to the frequency of the answers the second cause is lack of interest and the third one is the lack of a computer.

It is worth breaking down the cognitive aspects into categories in respect to the absence of motivation (the Internet is not interesting, nor useful), insufficient knowledge (does not know how to use it), fears (negative attitudes and experiences) and the possible technological restrictions. As already mentioned, the biggest obstacles are deficiencies in motivation and knowledge.



**Source: WIP, 2002-2006**

But what can be found in the background of this passive resistance and rejection? Several factors could be mentioned here but due to limited space we will draw attention to an interesting parallel which lies in the fact that neither politics nor society is

disposed to operating in a network-like way. It is very probable that there is an inter-connection between political distrust and the – hopefully temporary – stagnation in the evolution of the information society in Hungary since both political and social culture are dominated by rigid opinions, opposing groups and distrust; people are depressed; the population cannot be mobilized; they do not travel to work, study or spend their spare time elsewhere; and public administration is providing a low level of performance.

The ICT sector of the Hungarian economy and a narrow, younger and more educated segment of the population is developing progressively and adapting to the opportunities provided by technological advances, while the state, our public administration and most of society is less able or willing to keep up. For the majority, new information and communication technologies mean destruction, retreat and the further weakening of social norms and communities. Meanwhile, the minority, recognizing the new opportunities and the creative power, are accepting the opinion that changing our life styles and habits and adapting ourselves, the old values are not only sustainable but can even be strengthened and new ones can be established.

For those making deep analyses of the 'netizens' of information society it is not surprising that these people do not simply own the feature tools of the information era but also make use of them in order to enrich their social, economic and cultural resources<sup>[2]</sup>. The data from the World Internet Project make it clear that the users of computers and the Internet have wider social contacts than the non-users whose contact network is a lot narrower. Among those who started using the Internet between 2001 and 2003 the proportion of the persons who have a friend increased by six percent. We are therefore probably right to assume that the Internet also helped people to make friends, so its use has a positive impact on making social contacts and the evolution of the more network-like operation of society. (Albert-Dávid-Molnár, 2006).

#### **The unfavorable structure of settlements and the role of networks**

It has now become clear that the success of the information society greatly influences the capability of small communities and small settlements to retain their populations. This problem is particularly acute in Hungary where, because of the peculiar structure of settlements, 36 percent of the population lives in villages. The number of settlements with fewer than 1,000 inhabitants is over 1,700, and those with fewer than 500 people amount to some 1,040, so every third Hungarian settlement has less than 500 inhabitants. Such a disproportionate structure of settlements is hard to find anywhere else in Europe which is also indicated by the fact that the number of the inhabitants who live in small settlements is three times higher in Hungary than the average in Europe. The number of small settlements is particularly high in the counties of Baranya, Zala, Borsod-Abaúj-Zemplén, Vas, Somogy and Veszprém. Hungary is a country with one of the lowest numbers of inhabitants per municipality. (About 700 persons per municipality while this number can reach as high as 130,000 in Great Britain which constitutes an extreme example in this respect.)

The low populations of the small villages in many cases makes it unfeasible to maintain basic services and institutions, although it is obvious that the school, the post office or the community house are at the focus of innovation. It is no accident that the closing down of the local (fixed) post offices and the introduction of the mobile postal service (in the middle of the decade) led to strong opposition from the locals affected by it. The real reason for their protesting lies in the fact that in regard to social contacts, i.e. communication – or the opportunity to disseminate innovations – it is not at all the same whether the mobile post office reaches many people in many places one by one or the small post office provided the opportunity for many people to meet in a fixed place. These two solutions represent another dimension of quality.

This type of settlement structure places enormous strain on Hungarian socio-economic policy. Oddly enough, the small settlements fighting resource gaps primarily try to save money on the very institutions that play an essential role in discouraging local intellectuals, young people and families from moving away. Generally it is the library, the community house, the local post office and the school that are sacrificed first, however, these institutions are absolutely necessary for the maintenance or even development of the local community resources.

Sociologists highlight three characteristics of the underdevelopment of the declining rural regions: economic recession (which leads to organizational and institutional closures), under-developed life circumstances (income, consumption, infrastructural supply and deficiencies) and the disadvantageous demographic trend: the rapid aging and natural decrease in the number of the population and thus the rapid reduction in the number of inhabitants in these settlements. The geographical and infrastructural isolation of the small settlements is increasingly resulting in their socio-economic exclusion and isolation.

The situation is contradictory because according to current notions of modernization successful territories are those that are able to solve their current socio-political problems with progressive and up-to-date interventions that establish competitive advantages. The multifarious problems of the small settlements have long been recognized, however, the solutions found have been sporadic, temporary and partial. This is because at the ministries concerned there have always been several 'responsible persons' for the various tasks and institutions, with a resulting lack of adequate coordination and strategic pressure and neither the need nor the notion of integrated management for the occurring problems has evolved. Nevertheless, it is rather remarkable that in each case we come across a deficiency in the information and knowledge processes, and the structural reasons are always the same:

- problems of size efficiency, business/market/budget unsustainability,
- resource gaps in establishing and/or maintaining properties,
- permanent lack of (qualified) human resources that can be activated directly,
- lack of infrastructure (telephone, cable TV, the Internet) and the difficulties of accessing the national basic systems.

So what are the possible solutions, and what are the research findings that could help us to map out adequate methods of intervention? Overcoming the cognitive obstacles, motivating the population, awakening the demand for changes and promoting the more network-like operation of society cannot be implemented without social intermediaries (teachers, librarians, IS-mentors, social workers, etc.)

Previous research on the inter-connections between social capital and Internet usage (Albert-Dávid-Molnár 2006) has drawn a clear picture: the social environment of Internet users is richer than that of non-users. The probability that the group with a

friend, a relative living abroad or in the countryside or having attended a party for friends during the month prior to the data collection for an Internet user is 1.5-2.5 times higher than the probability for the group with members that do not have such contacts. It is perhaps even more important that after excluding the effects of all the other factors we find that the group with friends is twice as likely to have started using the Internet in the examined period (2001-2003) than the group lacking friends.

So it is obvious that the non-users of the Internet have less social capital, however, in most cases this not only indicates the fact that they have less social contacts in terms of numbers and a narrower social network but also indicates that they have fewer people from whom they can ask for advice or help in connection with the ICT tools or the use and usage of the Internet. They lack the communication channels through which they would be able to see the appropriate examples and the social and technical constraints and opportunities..

In this context those community places primarily in small settlements where the necessary services are provide, , and which also provide social places for people to meet, talk, exchange information, study or relax are very highly valued .

According to our earlier research (Molnár 2004, Albert-Dávid-Molnár 2006) Internet usage is not primarily influenced by direct family contacts but by friends and acquaintances. We have also observed that the main factor is not the quantity but the quality of these contacts. In the spread of computer and Internet usage the decisive elements are the weak contacts (friends, acquaintances or various experts the individual can reach) in the establishment and maintenance of which community places that provide access to the ICT tools – e.g. libraries, local post offices, community houses or tele-houses – play a primary role.

So our data makes it clear that the dissemination of innovations is indeed considerably influenced by the soft texture of social contact networks since the borderline between the narrow social contacts of the non-users of the Internet and the social skills of the users and starters is very acute. The importance of the various community places and of friends in the Internet usage of the new users is especially worthy of attention.

Because of this it is very unfortunate and paradoxical that in the small settlements with poor economic conditions it is exactly these community places that are first sacrificed, and it is exactly the repression of weak contacts that allows us to say that Hungarian society's lack of places for contact puts enormous obstacles in the path of disseminating ICT tools.

However surprising it is, the protests against mobile post offices substituting for local post offices originate in the outstanding importance that community places have in facilitating weak contacts, fears concerning the loss of these facilities, and people's intention to protect them wherever possible (Molnár-Székely-Karvalics 2005). The local post offices are not only institutions that provide various services but also places that strengthen and maintain community feeling. The inhabitants not only go to the post office to post a letter but also because here they are provided with a "community service for free" maintained by local people: they can meet other people and friends and can get information on the local events etc. All this contributes to the improvement of community feeling and the extension of people's social contact network. From a sociological aspect an institution "with many people visiting one place" is basically different from the one "with one person visiting many places".

#### **The role of social intermediaries**

Results from several research projects demonstrate that the number of Hungarians living in total digital isolation is very high. In relation to this segment of the population the greatest challenge faced by social policy is that they are neither motivated, nor open or interested, and no external support can be provided for them. The main source of isolation is the non-users' narrowed system of contacts due to which the basic social connections and interactions that could promote the dissemination of innovations are missing.

Narrowed social contacts cause considerable disadvantages especially in obtaining information on new opportunities and tools. From the following diagrams it is clear that in the acquisition of personal computers or Internet access it is not family members or relatives who are most frequently asked for advice but rather acquaintances or experts – who in fact constitute weak social contacts.

*Source of the advice gained when buying a PC (according to the percentage of households that purchased their PC, in more than one possible answer):*

Friends, acquaintances	40%
Experts	35%
Family members	16%
Colleagues	15%
Other relatives	7%
Obtained advice from nobody	16%

**Source: Ministry of Informatics and Telecommunication 2005**

*Source of the advice obtained when buying the Internet access (according to the percentage of households that purchased their Internet access, in more than one possible answer):*

Experts	35%
Friends, acquaintances	31%
Family members	24%

Colleagues	14%
Other relatives	4%
Obtained advice from nobody	25%

**Source: Ministry of Informatics and Telecommunication 2005**

All these are important indicators since in examining the digital divide in Hungarian society it can be observed that the majority of the non-users have relations with neither the tools nor the experts who are perfectly comfortable in the information society. 57 percent of the non-users live in households with no Internet, PC or Internet user, and another 20 percent have no Internet access or Internet user household members but do have a PC. These two groups are totally isolated from the feature tools of the information society.

*Non-users of the Internet in percentage of the persons living in the households*

The household has			Their proportion according to the percentage of the non-users of the Internet
PC	Internet	Internet user	
yes	yes	yes	9%
yes	no	yes	12%
no	no	yes	2%
yes	no	no	20%
no	no	no	57%

**Source: Eneten 2005**

The isolation of more than half of the non-users from the information society is reinforced by not even having thought of trying the Internet.

*Have you ever thought of trying the Internet? (according to the percentage of non-users):*

Never thought of it	54%
Yes, but has not tried it	24%
Yes, and has also tried it	20%
Yes, but after trying it did not use it	2.00%

**Source: Eneten 2005**

In addition to the very strong subjective limits – lack of motivation and interest – other micro level but objective obstacles also influence this situation. More than half (66 percent) of the non-users of the Internet get no encouragement or help from other persons.

*Has anyone ever encouraged you to use the Internet? (according to the percentage of non-users):*

Yes, a family member	15%
Yes, acquaintances	13%
Yes, colleagues	5%
Other persons	1%
Nobody	66%

**Source: Eneten 2005**

The lack of internal motivation and external help has the greatest effect on the elderly and poorer groups. From the information society perspective it is absolutely impossible to reach them at the moment. These people make up half of adult Hungarian non-users, and their number is around three million or 30 percent of the total Hungarian adult population.

#### **The missing link: the IS-mentor**

The need to establish a new profession also appeared as a result of these research findings. The IS-mentor<sup>[3]</sup> is a qualified and practiced supporter based in community access points who provides personal help to people in improving their life situations and life opportunities primarily through the use of modern ICT tools and network services. The mentors' primary task is to help people otherwise unable to independently use the services provided by the information society, and who cannot exploit the opportunities provided by information and communication technology. The mentor could be the connecting link that brings the new services and opportunities of



the digital world closer to the community's requirements and cultural traditions and this could even benefit those who have not yet realized its advantages.

The Hungarian IS-mentor program is a unique initiative. The solution is peculiar mainly because the qualified IS-mentor in addition to using the informatics tools - is also informed about the social situation and the problems of the target group. At the community access points<sup>[4]</sup> the mentor provides support in making use of the opportunities provided by the ICT tools, and in managing life situations. To fulfill this task, he/she gives complex support, promotes the socio-economic processes of the individuals and the communities, and thus helps to increase equality and opportunities for disadvantaged persons and regions.

The fundamentals of the IS-mentor service or profession already exist in the National Information Society Strategy accepted in 2001: the section on social policy stressed that "the institutions need experts who are, by reason of their qualification and attitudes, able to mediate as interfaces between the users and the non-users".

The eGovernment's 2005 Strategy presented at the beginning of 2004 calls the expert whose participation is basically necessary in the socialization of the electronic services an 'IS mentor'.

When the program booklets of the National Information Strategy were elaborated it was already obvious that most of Hungarian society would not be able to integrate into the digital culture without help. The main target groups of the e-Inclusion program were the elderly, disabled people and the Roma; the people most disadvantaged in regard to the digital divide. The highlighted target of the program was to build human infrastructure through the IS-mentor network (in addition to the physical infrastructure which was typically made up of the eHungary Points): to establish a network of community access points where it would not only be possible to fulfill the requirements for the special use of ICT tools but where an IS-mentor with a good knowledge of info-communication technology ('an informatics expert and a social worker in one') would also be available.

It was clear that placing technological tools and making them accessible at public places is only useful if they have a favorable socio-economic impact. One of the most important effects is the reinforcement of a sense of community in remote, small settlements. If access to a copy machine, a computer or broadband Internet at an eHungary point, library, post office or tele-cottage has no impact on strengthening, building or restoring a community it is a waste of money because the tools will only be used by the already-users (students, young and qualified people). The most serious problem is faced by the small settlements where there is hardly any human resource left that could be built on, so the retention power of these communities is rapidly decreasing. Dozens of sociological works have been written on the negative impacts of the inadequate working of these basic structures of society and on how damaging their failure to fulfill their tasks can be as for example through the failure in the transmission of norms, positive role models, and basic social values.

Despite being aware of these facts no tangible step was made by the political decision makers or public administration to introduce the IS-mentor profession until the training of Information Society Consultants – instead of IS-mentor – was started with the support of the Ministry of Economy and Transport at the end of 2006. The aim of this training is to give special consultant education to the qualified experts with diplomas working (or even just interested) in the field of the information society so that they can make use of this knowledge in their everyday work.

There are essential differences between the concepts of the IS-mentor and that of the IS-consultant. The IS-consultants are trained to persuade people that the Internet is not something infernal, and that it offers services that are important in everyday life. This task can really be fulfilled by a consultant in a library but this is not community development, and does not promote social integration. This is rather a reflexive service: should someone enter the actual premises, which are like a helpdesk, the consultant will try to find answers to their questions using ICT tools. Thus the IS-consultant can reach the people who are motivated and interested in the digital world but who lack knowledge, tools or access. However, the IS-mentor is proactive: he/she tries to reach the people who are not aware of the advantages offered by the ICT tools and online services, collects their requirements and expectations, identifies the problem groups of the community and tries to engage with them using a different tool pack, and a different approach.

Consequently, an IS-mentor works at a community or community service level even if he/she provides help to individuals as well. As opposed to this, the IS-consultant only offers personalized help and consultation.

The IS-consultant is likely to support the people open to the use of ICT tools but who are unaware – because they have never been clearly informed – of the opportunities available e.g. help in the management of their official dealings, communication, using bank services, etc. It is not known how big this group (with a positive attitude but limited access and knowledge) is in Hungary. There is no precise data but relying on the segmentation trials of other research work we can estimate it at about 15 percent of the adult Hungarian population. This group is a lot smaller than that which can be effectively engaged only through an IS-mentor service.

The IS-mentor – building on the consultant's role – is primarily set to reach those adamantly staying away from and rejecting the digital world or who are excluded from it. And as these states are not primarily related to the letter 'e' but rather to social, socio-political, community development and educational problems, they need an expert with appropriate competencies.

#### **The case study of Aparhant**

##### ***Aparhant, basic data***

Aparhant is a village near the town of Bonyhád in Tolna County with a population of about 1,200 people. The population is mixed: Hungarians, Swabians, Szekelys and about two percent Roma. One important characteristic of the village is that almost all of the adults have a job: many of them work in the local agricultural cooperative and many of them have a job in the nearest town, Bonyhád in the shoe factory, the enamel plant or at the dressmaker's shop. Two years ago a dressmaker workshop started operating in Aparhant with 40 employees which means work for 21 families. The village has 51 individual entrepreneurs, 17 of them in industry and the others in agriculture.





### **Tolna County, Hungary**

Despite this the region is not really developed. The buying power index in Tolna County is 91.5 percent<sup>[5]</sup> of the national average (this index is 135.4 percent in the capital), and in Aparhant it is even lower at 85.5 percent.

The resources necessary for the successful operation of the village are raised by operating the institutions economically. In another settlement located in the same county and with similar features the maintenance of the school, the kindergarten, the community house and the library costs about HUF 110-120 million (app. € 500 000) a year in which the state's normative support amounts to about HUF 60-70 million. The maintenance of the very same institutions in Aparhant costs HUF 80 million, so the burden placed upon the municipality by having the institutional budget 'complemented' is a lot smaller.

The local authority mainly saves money through wage costs: instead of the 6-8 persons staff generally working in such settlements they only pay four full-time employees who must do their best in the several fields they are allocated. The cited employment data allow the considerable sums of money spent on subsidies elsewhere to be freed up. However, economical operation itself would not be enough: the amounts freed up in this way are spent on innovative developments in order to strengthen social cohesion and to encourage people not to move away.

In 2004 the football team was supported by HUF 1.3 million (€ 5,000). Catering for all the children at kindergarten or primary school is free as are all the school books while a HUF 15 thousand (€ 60) school starting support is paid for each child. At Christmas each child and low income pensioner is given presents. Those wishing to settle in the village can buy plots of land for symbolic amounts of money. However, the area really worth focusing on is the Internet network of the village.

### **Information technology – a new approach**

The settlement considers IC technologies as opportunities for development; Aparhant is a real e-village. Cable phone (which could be found only in the school and the mayor's office at the beginning of the 90s) is installed in 80 percent of the houses, and the coverage of the three mobile phone services currently operating in Hungary is also complete. Aparhant has its own cable television service which is maintained at a production cost by the local authority, and the subscription for 40 channels costs only HUF 2,500 (app. € 10) a month.

The teletext of the network is used to transmit local information and technical help such as what needs to be done if someone's computer is infected by viruses. Considering the conditions in Hungary the greatest achievement is the introduction of broadband Internet which is now accessible in almost half of the houses in the village which means a penetration reaching or even exceeding that in the capital of Hungary, Budapest. The subscription fee for the Internet is HUF 1,500 (€ 6) per month which is very low. The greatest virtue of the above developments is that they were established from the village's own resources. The Internet is provided by the municipality through a Wi-Fi network which needed two transmission towers for a total outlay of HUF 6-7 million (€ 24-28 000).

All the work that could possibly be carried out was done with community cooperation: the steel structure of the towers was constructed in the locksmith workshop of the neighboring village, and excavation and cable works were carried out by the employees of the local authority. It was not necessary to get permission to establish the WiFi network, as in accordance with the regulations it merely had to be registered. At present the bandwidth gained from the server is 3 Mbit/sec. Building a terminus costs about HUF 50,000 (€ 200) for each house, half of which is paid by the municipality as a subsidy. The costs of this were reduced by opting to use a locally developed aerial to establish the necessary contact.

In the case of Aparhant the total cost of the WiFi and informatics investment established from its own resources amounted to about HUF 10 million (€ 40,000). The bandwidth created in this way (11-54 Mbit in principle) is perfectly adequate for meeting demand, although the settlement is already planning further developments since the world has moved, especially during the last two to three years, towards applications of bandwidth as broad as possible. Currently the network has about 120 personal users, and there are 14 computers in the school, nine in the community house and seven in the municipality offices. The nine computers located in the village library can be used for free.

It is remarkable that the school of such a settlement has 26 computers. This indicates one of the success criteria of the project: the education of informatics has been of outstanding importance in the village since the early 90s, and one fifth of the population has passed the ECDL (European Computer Driving License) exam. The children are taught informatics from the fifth grade at school (but they are not allowed to play games on the school computers). Two thirds of the children pass the ECDL exam by the time they leave primary school. A qualification in informatics is a must for public employees and public officers.

The demand generated in this way has been an important factor in the success of the local network since there are several generations that have grown up using computers and the Internet in a natural way and in their everyday lives. The training courses organized by the primary school for the adults on the use of the Internet are also popular – it was impossible to transmit this knowledge in the early 90s.

The surveys made in the village provide strong evidence to substantiate the fact that secondary, weak contacts play a very important role in technological dissemination: in the settlement the knowledge about how much important information is available on the Internet in various fields (e.g. on calls for proposals or agrarian support) spread from



mouth to mouth which promoted acceptance and dissemination. People use the Internet primarily to search for information, to make phone calls and play network games. Success is well indicated by the € 100,000 support won for a modern animal transfer truck station in 2006 in an application which they found through the Internet.

This call for application and the employment structure presented above both reflect the fact that the population working in the agricultural or industrial sectors is mainly encouraged to use the Internet through education. As well, the requirement for spare time activities and cheaper communication are additional reasons, and not simply for work place needs. At the same time, the knowledge gained at school means a competitive advantage on the labor market for the inhabitants of Aparhant (it is quite possible that this is one reason for the outstanding employment rate).

#### **Lessons learned**

In 2005 ENETEN[6] made a focus group survey in the settlement the results of which corroborate the facts and opinions presented above:

The most popular applications are corresponding, browsing in spare time (sports, cars) and school topics, playing online games and making phone calls. Some of these – in addition to other people's experiences – had outstanding importance in beginning to use the Internet. ("I was very much interested in corresponding", "We visited a couple where the woman was chatting all the time, and enjoyed it so much that she couldn't talk about anything else".)

As to the question of how the Internet has changed people's lives the answers given usually referred to the allocation of their time (sleeping and watching TV were reduced the most after starting to use the Internet contact). An interesting point is that users do not think about how to persuade non-users in the traditional way (infrastructure or some killer-application) but rather start in the areas of hobbies and spare time activities ("one of my friends is fond of fishing, I was able to show him pages on it"), and there have also been examples of getting a friend to use the Internet. However, the Internet is not just for the young as people of all ages use the network.

As to the question of why the Internet is used by so many in Aparhant only one response was given: "It depends on the mayor. If we didn't have this microwave, I wouldn't have it."

This answer throws light on what is perhaps the most important generator behind the developments i.e. a single person, the mayor of the village, who introduced the study of informatics as a teacher of the subject and was the first person in the village to do so since 1990. Mr. György Szűcs who performs his role as mayor for no remuneration is also the informatics expert[7] of the village. His example shows that it is possible to build a network in a small and isolated village with consistent work and perfect planning but with no significant support, almost exclusively from private resources even in a post-transition country that hardly abounds with opportunities. As a final conclusion we can state that the network in Aparhant includes all the factors that can arise in successful community projects and make a small settlement that is quite typical of other Hungarian villages of similar size successful.

1. Dedicated leadership with long-term and definite ideas and targeted operations approaching the problems innovatively and searching for up-to-date answers.
2. Creating the appropriate needs and level of consciousness – primarily through education and spare time activities and the opportunity to join an operating system.
3. Precise use and planning of resources making the network sustainable even under bad economic conditions.

It is perhaps even more important that the secondary, weak contacts – as experienced in the interviews and the focus groups – are strong in the settlement which has had a positive impact on needs. All this, however, could not be maintained without technological support which means that the operation from own resources also includes personal technical support by those not (yet) able to make use of the ICT opportunities on their own. This model supports the view that moving forward from the present Hungarian situation could be best solved by using the community approach (tele-houses and service centers) and institutionalizing the supporter profession.

#### **Conclusion**

It has now become clear that no informatics infrastructural investment can be successful unless it can exert an impact on the community or can initiate community development or mechanisms that improve opportunities. If these are lacking society's ability to adapt will naturally be retarded.

It seems that Hungarian society is not able – since it has not yet been given any help or encouragement by, for example, the political class – to produce sufficient social capital for renewal. It is probable that the pace of transformation required of Hungary by the information society challenge subsequent to the economic, political and social transition is too great. However, in mapping the obstructive factors and dangers and defining the appropriate ways of intervention the desire to terminate these concepts of civil society and sociology provides useful food for thought.

Social intermediaries can play a crucial role in bridging the deficit between technology and people who are lagging behind. Especially because these people do not want to adopt technology – but merely want better services. Unfortunately there are different concepts of intermediaries in Hungary and no clear signal, which is also essential for people to accept new ways of behaving. The initiatives are there but to live up to their potential is another question. Every solution is only viable in local circumstances, and at least one 'champion' is needed. The example of Aparhant shows us that community action and a comprehensive vision can lead to success.

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[1] BME-ITTK is one of the Hungarian hosts of the World Internet Project (WIP). The authors used the database of the WIP project. The WIP research does not form a particular aspect, as its aim is rather to map the general social impact of the Internet. For this purpose, we elaborated the plan for a so-called longitudinal research to be repeated every year for ten years. This makes it possible to show the short and long term impact on people's suppositions, habits, relationships, and lives in households where there were already users at the beginning of the research and those becoming users in the meanwhile. Every year 4,000 people are used in the sample who are representative of the Hungarian population.

[2] That is why we agree with the view that Hungarian mobile telephony, with its 90 percent coverage index, hides major opportunities. Most of the people possessing a mobile phone probably use it almost exclusively for receiving calls and hardly any other services or applications.

[3] The term - Information Society Mentor - was originated by Mátyás Gáspár. See details: <http://en.itmentor.hu/>

[4] Primarily in telecottages, libraries. See the history of telecentres in Hungary: [http://www.itu.int/ITU-D/univ\\_access/casestudies/hun\\_mct.html](http://www.itu.int/ITU-D/univ_access/casestudies/hun_mct.html) or Mátyás, Gáspár: *Telecottage – The chance development in small communities*

[5] GfK Hungária: Buying index survey, 2006-2007

[6] [http://www.eneten.hu/szolgalatas\\_eng.html](http://www.eneten.hu/szolgalatas_eng.html)

[7] A blog comment by an Aparhant inhabitant, Nov. 28th 2006.:

**„Aparhant, the Media Star**

Category: [Grey weekdays](#)

Labels: [Aparhant](#), [WiFi](#)

“Some days ago I wrote that the figyelonet.hu published an article on Aparhant, my home village. The village and it mayor has been given outstanding attention by the media since then. Last week we could see a short interview in the night program of one of the TV channels. Yesterday I also had to visit Mr. Teacher because I had re-installed the Windows XP (I had to change over from English to Hungarian) but did not know the network settings. When walking with the child in the afternoon, I headed towards the mayor's office supposing I might find him. I was lucky, he was standing in the yard, the municipality workers were working with some metal device, and some strangers were there, too. I was just starting to talk about my problem when a camera was brought over from somewhere, and they started to shoot a film.”

