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A REVOLUTION POSTPONED

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Abstract: This study investigates the characteristics of the process of the Internet's diffusion in Hungary. The theoretical frame of our research is based on Everett M. Rogers' diffusion theory enabling us to examine the penetration flow of new technology. In the first part of our paper we outlined the conclusion based on our findings that the Internet users in Hungary – based on their socio-economic and attitudinal characteristics – can still be considered to belong to the so-called early adopters. This means that the Internet's diffusion in Hungary, in 2002, has not reached yet the phase of the "qualitative leap", the sudden rise in the S-curve. In the second part of our study we deseribe the characteristics of the Internet as perceived by Hungarian users. We conclude that the Internet's compatibility is limited in respect of the existing knowledge and demands of the potential users, and its relative advantage is still ambiguous for the majority of the potential users.

Keywords: Internet, diffusion, S-curve, adopter categories

FOUR ANSWERS TO AN AWKWARD QUESTION

'What is so special about the Internet?', one could ask, and to be frank, this puzzling question is asked all too often at scientific forums as well as in everyday conversation nowadays.

Sociologists' interest in technological innovations is not self-evident, and it is not a very wide-spread phenomenon either (Dessewffy 2002a). However, the Internet is an exception with regard to this rule; during the last ten years it has gradually emerged to the foreground of the inquiries of social science (DiMaggio et al. 2001). Several reasons can be given for this intensified scientific interest.

One such reason may be the scientific discourse concerning the impact that the IT industry has had on society, production, power and identity, and the ways in which these were changed by information technologies in general. The best-known representative of this train of thought, Manuel Castells, assigns a central role to the digital revolution in his hypothesis, published in the middle of the 1990s, and composed with the aim of establishing the overall narrative of the age of neo-, late or post-modernity. It is not surprising, then, that the studies which have followed

Castells' lead have also stumbled upon the problem of the information society and the Internet. From this point of view, even the alterations in the direction of Castells' inquiries have proved to be normative: after his trilogy embracing all the social spheres of the information age, lately he has turned his attention exclusively to the Internet (Castells 2001).

Secondly, the numerous different fields of research (such as public healthcare, military affairs, public administration, new social movements, political communication, etc.) have also had a significant influence, as it became more and more obvious to the researchers of these areas that digital communication technologies had brought about fundamental changes in their particular fields.

Thirdly (although this consideration has appeared only implicitly in the discourses concerning the Internet), the main reason for the increased interest is the significance of the Internet in the sociology of knowledge. We have made it clear on several occasions that we find the phenomenological sociology of knowledge, associated with the names of Schütz, and Berger and Luckmann (1967), a very comprehensive and inspiring conceptual framework (Dessewffy 1999). We are unable to elaborate that theory in this study. But even so, once we have accepted phenomenology's fundamental proposition about the social construction of reality, it will be easy to admit that any alteration in the communication medium of this construction will result in an entirely new situation.

This is what Neil Postman refers to, in somewhat simpler terms, when he emphasizes the ecological characteristics of communication technologies, as opposed to additive technologies. Additive technologies do not alter the community of their users, whereas ecological technologies do (like a drop of blood alters a glass of water), and moreover, they transform it completely (Postman 1993). After the community of users adopted the new communication technology represented by television, we could no longer speak about 'television' as a separate phenomenon, nor could we find the original community any more: television has changed the way we think about the world, and consequently, it has changed our actions as well. The Internet, of course, has induced much more radical changes than television (Cole 2001; Poster 2002).

Finally, the fourth channel of influence is fed by the debates conducted with the often oversimplifying marketing theories and with some theories of economics. These theories, taking for granted the values inherent in innovations and the rationality behind them, often fail to consider the particularities of the social environment in which the given diffusion process takes place – so it is no wonder they mostly fail to account for the surprising success stories and failures. The challenge presents itself naturally to sociologists to analyze the characteristics of those social contexts in which the use of the Internet, for example, diffuses at a faster or slower pace, and to try to reveal the underlying motives of these processes. Our present study will take this latter path – but let us state at the same time that in examining the diffusion of the Internet in Hungary, we will still hold the previous arguments valid.

With regard to the foregoing, one of the aims of our study will be to present the process of the Internet's diffusion in Hungary and to give an overview of its characteristics. The study follows the diffusion of the Internet from year to year,

describing the prevailing situation and analyzing the factors influencing the process. The theoretical framework for our analysis will be provided by the general model of diffusion created by Everett M. Rogers.[1]

One of the great advantages of Rogers' theory is that it interprets social diffusion as a communication process, where the diffusion of a given innovation depends on the contextually embedded decisions of the social actors. Schematically, the different phases of this innovational decision-making process are as follows: Knowledge, Persuasion, Decision, Implementation, and Reinforcement. Thus, "the innovation-decision process is the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject , to implementation of the new idea, and to confirmation of this decision " (Rogers 1995: 163).

Various types of information and other factors are of key importance in the different stages of the innovational decision-making process.

In our previous work (Dessewffy et al. 2003) we have examined the socio-economic and attitudinal characteristics that can be used to describe Internet users in Hungary, using data from 2001. The results of diffusional studies have shown that individuals can be divided into groups according to the speed with which they adopt innovations. Experience has shown that the members of these so-called adoptation categories can also be distinguished by some of their social characteristics, and they belong to groups which can be well described by these variables as well.

There are three groups of variables: those describing socio-economic status, those describing attitudes and those describing communicational behavior. Early adopters, for example, tend to have a higher level of education, are generally of a higher social status, and they show more positive attitudes towards new technologies (and towards the world in general) than late adopters (Rogers 1995). Our last year's observations have showed that Internet users in Hungary so far belong almost exclusively to the group of so-called early adopters.

Now, a year later, we will conduct a new inquiry to find out whether the diffusion of the Internet has continued only within this group. First we will introduce the diffusion of some information and communication tools that are important for using the Internet. Then we will examine the groups of users and non-users with the aid of the variables used in our previous publication.

In the second, larger part of the study we will examine an element that gains real significance in the persuasion phase: the characteristics of the given innovation (in our case, the Internet) and their role in the diffusion of that innovation within Hungary.

1 For a detailed introduction of the model, see: Dessewffy and Galácz, 2003.

THE DIFFUSION PROCESS OF INFORMATION AND COMMUNICATION TECHNOLOGIES

Computers and Telephones

When researching the diffusion of information and communication technologies (ICTs), and especially the use of the Internet, it is worthwhile to first observe the charts showing the number of personal computers per household in Hungary in the year 2002. The most recent data tell us that this number grew, although not very much; while in 2001 there was a decrease compared to the number registered in 2000,[2] the figures for 2002 again showed an increasing tendency. According to the most recent data, more than a quarter of all Hungarian households (26%) have at least one personal computer.

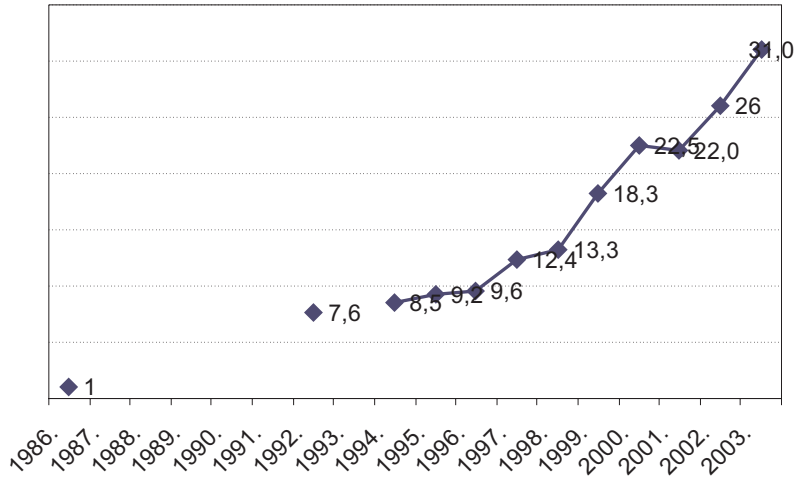

Figure 1. Number of personal computers per household in Hungary, percentages

Source: KSH 1992-1997, TÁRKI Household Panel 1998-2000, TÁRKI Household Monitor, TÁRKI- WIP: 2001-2002

The number of cell phone users grew much more rapidly. Considering the number of subscribers in Hungary, we are probably approaching the point of saturation: by December 2002, there were more than 6.8 million registered users (the population of Hungary is currently around 10 million). Alongside the dynamic growth of the number of cell phones, the number of land-line telephone subscriptions continued its slow decrease.

2 The decrease was very slight, however, and could possibly be owed to the differences in the samples.

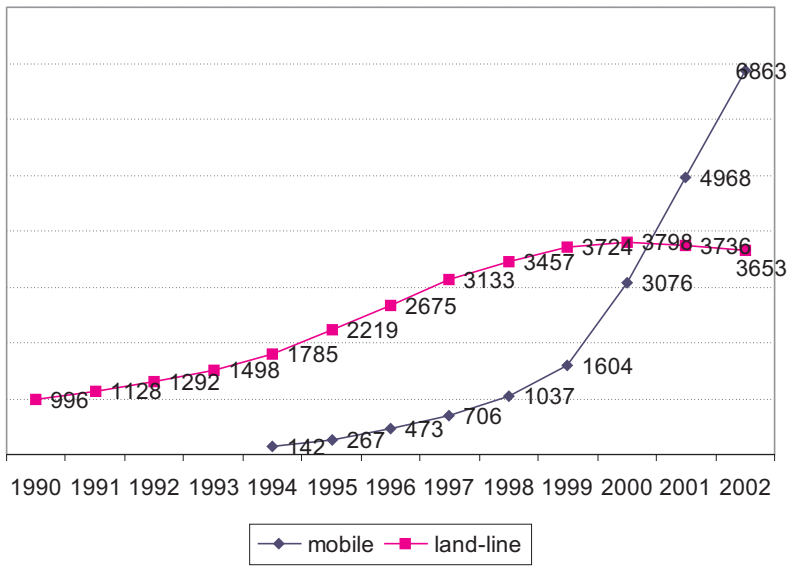

Figure 2. Changes in the number of cellular and land-line telephone subscriptions in Hungary since 1990 (thousands)

Source: HIF, www.hif.hu

The Internet

The number of Hungarian Internet users did not grow very rapidly compared to 2001. While in 2001, 17% of those interviewed used the Internet more or less intensively, 21% of the Hungarian population could be reckoned as regular Internet users in the year 2002.

Now, following the pattern set in our last year's research, we will present the demographical, social status, and attitudinal characteristics that we can use to describe Internet users.

Essentially, the proportion of Internet users grew in every educational level group. The most rapid increase could be seen in the group of those with a secondary school or secondary technical school certificate; in that division, the proportion of Internet users changed from 24% to 30%. One reason might be that among others, those who are currently pursuing their university or college studies also belong in this group. There is a smaller but equally significant increase within the group of university and college graduates (5%). Among those who only finished their elementary school studies, or graduated from a vocational secondary school, the proportion of those who use the Internet grew by 2 percent.[3]

3 The chart shows the proportion of Internet users within different groups defined according to their completed level of education. That explains why we find a higher proportion of Internet users among those with only a completed elementary school education than among vocational secondary school graduates.

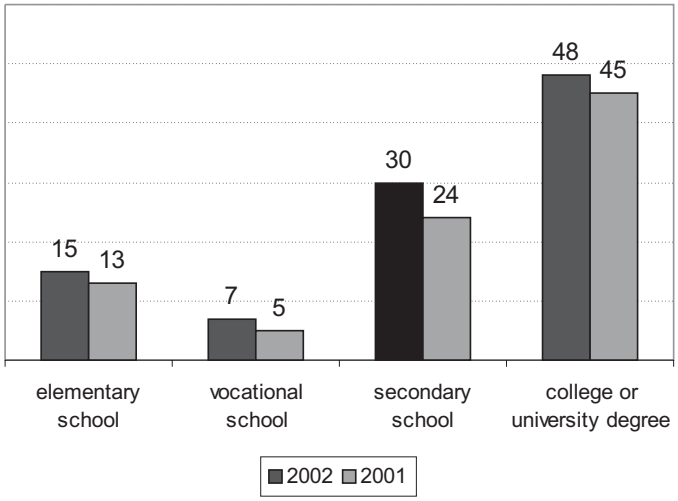

Figure 3. Proportion of Internet users in the different educational level groups (percentage)

Source: TÁRKI-WIP: 2001-2002

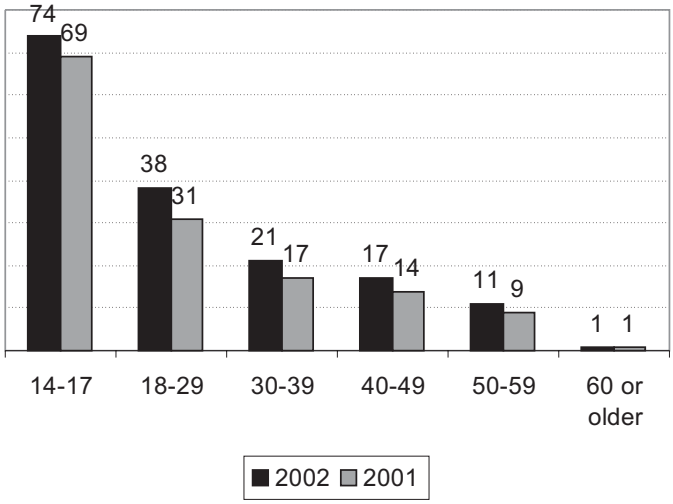

Figure 4. Proportion of Internet users in the different age groups (percentage)

Source: TÁRKI-WIP 2001-2002

The age-group analysis points to a similar tendency: with the exception of the oldest group, all age groups displayed a growth in the proportion of Internet users. The increase was greatest among those between 18 and 29, rising from 31% to 38%, while in the other age groups there was a rise between 2% to 5%. Therefore it can still be said

that the proportion of Internet users decreases gradually, and in some cases radically, with age.

This year, we again wished to examine the degree to which the differences in social status were reflected in the extent of Internet usage – a question which presents itself on the basis of Rogers' theory. Therefore we set up a variable for social status.[4] Our results have proved, as we had expected on the basis of the theory, that a higher social position or status entails an increased use of new information and communication technologies, including the Internet. While only 12% of those with a low social status used the Internet more or less intensively, this number went up to 48% among those of the highest social status.

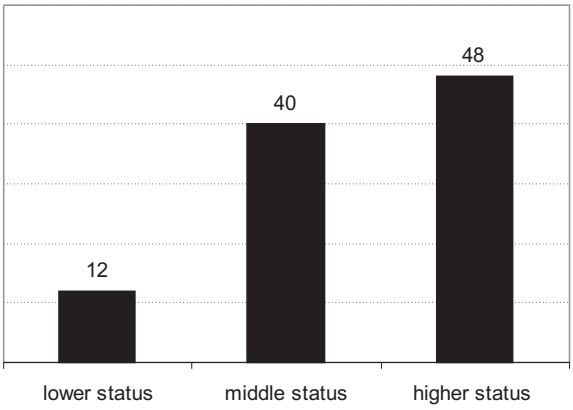

Figure 5. Proportion of Internet users in the different status groups (only among non-students, percentage)

As well as in our last year's research, this year we also wished to examine the differences between the attitudes of Internet users and non-users.

To start with, we explored the characteristic opinion of the two groups regarding the diffusion of technological innovations. In 2002 as well as previously, the general opinion of those interviewed was that the spread of new information and communication devices – such as the Internet or cell phones – tends to improve the world we live in. 60% of the non-users and 76% of the users of the Internet believe that these technologies contribute to making the world a better place. Almost one tenth, 9% of the non-users think that the world is becoming a worse place to live in because of

4 We created a variable for social status which combined three factors: the individual's level of education, the real estate market status of his or her home (expensive neighborhood – cheap neighborhood), and the internal characteristics of the flat or house itself (dark – sunny, inexpensive furniture – expensive furniture, untidy – neat, crowded – spacious). The variable can have three values: low, middle or high status, and only individuals who were no longer students were included in the analysis. We still have to face one problem, namely that the questions required to determine social status were asked this year only in the WIP database survey, therefore the data received cannot be compared with last year's results.

these phenomena, and roughly one fifth of those interviewed presume that the diffusion of ICTs does not have any effect on the world in either way.

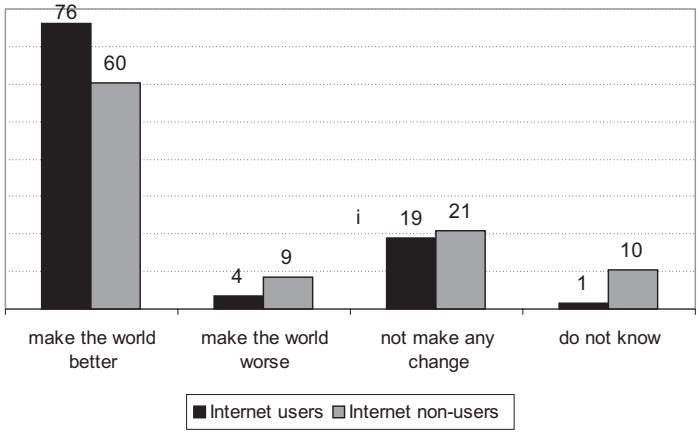

Figure 6. Do you think new technologies will make the world a better place?

Source: TÁRKI-WIP: 2002

Thus it is evident that although the whole population has a rather positive attitude towards the diffusion process of new technologies, the proportion of those who endorse the views of technological optimism is nevertheless higher among Internet users.

Beyond their opinion concerning technologies, the general attitudes characteristic of those who use the Internet and those who do not were also surveyed this year as well. In order to reveal such general attitudes, we performed a factor analysis of the twenty attitude-related questions that our interviewers asked of the subjects during the survey,[5] and we examined the attitude disposition of more or less regular Internet users, as well as non-users, with the help of the optimism–pessimism factor so produced.[6] This comparison has clearly shown – in accordance with last year's results

5 The analysis was completed only for the components on the WIP panel, because these questions were not included in the supplementary omnibus questionnaire. Accordingly, this information should be handled with reservations, since those left out are very likely to have significantly different attitudes as well.

6 We performed a factor analysis of the answers to the twenty attitude-related questions in the 2002 WIP database. Having extracted the essence of the answers (using the ULS method), 5 factors emerged from this year's data, the one with the strongest explanatory power (18%) being a variable that could be called "General feeling of depravity and depression". This factor strongly represented agreement with the following statements: "Your life could be happier than it is now", "Most of the things you do are boring and monotonous", "The more you become aware of the events of the world, the more hopeless you feel about your situation", "You feel that nobody really knows you", "Your life has had more breakdowns than the life of most people you know". It should be noted that last year, the group of questions concerning the pessimism factor also included the questions "The leaders of our country do not really care about your life" and "The majority of those in power are trying to take advantage of people like you", but did not include the questions "Most of the things you do are boring and monotonous" and "You feel that nobody really knows you". The factor was eventually divided into four categories, with the labels "desperate", "pessimistic", "hopeful" and "optimistic".

– that there tend to be much fewer pessimistic people among Internet users. Nevertheless, this year's analysis has pointed out that pessimistic attitudes do not necessarily decrease as the frequency of Internet usage increases; thus the greatest difference concerning attitudes is to be found between Internet users and non-users.[7]

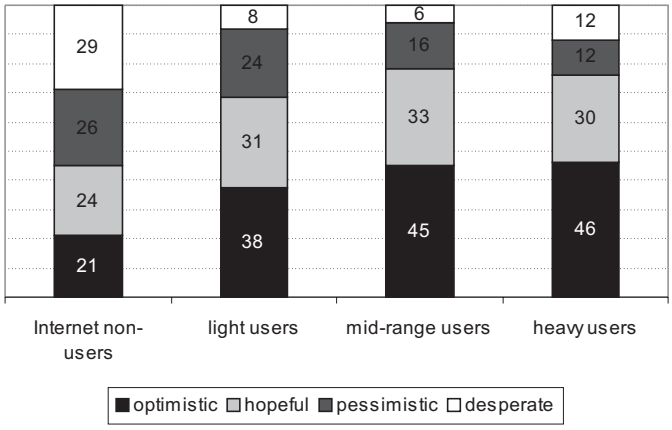

Figure 7. Correlation between use of the Internet and psychic disposition

Source: TÁRKI-WIP: 2002

As a result of our analyses, we can state that Internet users in Hungary still belong to the group of early adopters. This is because people with a higher level of education and a higher social status, as well as people with more positive attitudes, are over-represented among Internet users. As our data have also shown, although the proportion of Internet users increased within every social sphere, the growth rate is still the most dynamic among those who can be described by the characteristics of early adopters. If we project the process to the classical diffusion curve, we will see that we are still lagging along the mildly ascending initial section of the S curve. The "qualitative leap", the sudden rise has not yet taken place: for the year 2002, the digital revolution was – to say the least – postponed.

THE INTERNET AS IT IS

Different innovations unquestionably have different qualities and characteristics, which can influence the speed of their diffusion and the final degree of their penetration. Rogers' diffusion theory emphasizes the need to survey the various characteristics of new innovations, considering such characteristics to be the most

7 The analysis is not descriptive, because our methodology was to divide the factor into four equal parts, and we compared the different groups on that basis. This way, the rough average is about 25% for each group, which of course should not be taken to mean that there is a similar ratio of optimistic and depressed people within the whole population.

influential factor with regard to the rate of their diffusion. The theory specifies five different fields in which the characteristics of innovations should be examined, according to the experiences drawn from previous surveys. The five dimensions to be examined are relative advantage, compatibility, complexity, trialability and observability. It is important to note that these features should always be evaluated from the point of view of the potential users. No matter what developers, engineers or even social scientists think about a product being better or worse than its predecessor, or it being easy or difficult to use, and so on – because its degree of diffusion will be most fundamentally determined by the opinion of its users.

In the following sections, we will examine the characteristics of the Internet according to the five categories described by Rogers. We have tried to reveal the most likely opinion of the users wherever it was possible, i.e. where we had relevant empirical data at our disposal.

RELATIVE ADVANTAGE

The concept of relative advantage expresses the degree of improvement that a given innovation shows compared to the technology which, satisfying similar needs and playing a similar role, is already present in the given community. The advantage is 'relative', since the different advantages and disadvantages are not formulated in the same manner by, and are not equally important to, all of the social groups. Let us take DVDs as an example. In many regards, DVDs can be seen as the 'successor' of the videotape. For some, it is apparently an important feature that they provide better image quality, which furthermore is unrelated to the frequency of their usage; another advantage may be that DVDs are smaller and easier to store; and so on. For others, however, these relative advantages may be outweighed by the relative 'disadvantage' that DVDs are (for the time being) a lot more expensive than videotapes. Consequently, the decision of the different user groups will be deeply influenced by their opinion of the innovation's various features and by the significance they attribute to its different characteristics.

It is evident that the rate of diffusion of a given innovation will be faster and its extent will be greater if potential users attribute more relative advantages to it.

Relative Advantages and the Internet

It is not easy to analyze the concept of relative advantages in connection with the Internet. While in the case of cellular phones it is not very difficult to point out the preceding technology, it is much more complicated to say which device could be called the 'predecessor' of the Internet. The Internet is a device which combines the characteristics of several different forms of communication and incorporates the features of several media. When used for sending private e-mails or for chatting, it performs functions similar to those of correspondence by mail or telephony. However, in addition to keeping in touch with our friends and colleagues, we can also use the

Internet to communicate with institutions, authorities, and even strangers. Using the Internet can be a form of entertainment, a platform for shopping or for gaining information, as well as for making new acquaintances or for contacting different institutions. Bringing together all these functions, the Internet is a tool with certain features that remind us of several previous technologies, but as a whole it is a truly unique innovation without a real predecessor.

Nevertheless, the analysis of certain questions from the WIP survey gives us a possibility to examine some individual fields of interest.

ECONOMIC ADVANTAGES

As we have pointed out, in the case of the Internet it is difficult to find the technological "predecessor". For this reason we cannot possibly say whether its use is any more advantageous economically than the use of comparable devices. But we may still ask whether or not potential users find the Internet expensive. According to the answers, those who do not use it tend to mention financial reasons as the cause of their abstention. 21% of the non-users declared that they did not use the Internet because they found it too expensive. The most frequent reason for not using the Web, however, given by 44% of this group, was that the respondents did not have a personal computer. To a large extent, this also goes back to the lack of material means: 47% of those who do not own a PC said that they did not have the money to buy one.

Comparative data from the European Union show that this social perception could well be correct: both land-line telephone rates and Internet connection fees are outstandingly high in Hungary. Since the formerly guaranteed monopoly status of MATÁV (the largest Hungarian telecommunications company) has been converted into a massive competitive advantage due to certain specific legal constructions, we still cannot talk about real competition in the Hungarian consumer market.

While not questioning the economic realities, as sociologists we must also point out that the value judgment of something being "too expensive" is always a social construction derived from a process of deliberation in a given context (Dessewffy 2002b). Thus what we consider cheap or expensive will always depend on our conceptions regarding the product and our knowledge filtered through our values. This explains the fact that mentioning economic reasons for not using the Internet (i.e. saying that "we do not have a PC" or finding it "too expensive") was more frequent in the topmost income quintile – among the richest 20% – than in any other quintiles except for the lowermost one (Rét 2003). The situation is even more complicated because those who find the Internet "too expensive" are usually those non-users who are not much aware of the opportunities it provides. Incidentally, this is where we must bring up the question of the lack of Hungarian language on-line content. Regarding this question, we only wish to note that although there is undoubtedly a shortage in some important forms of content providing – especially in the field of government and public administration services –, even regular users are not familiar with most of the Hungarian language content already available, not to mention the majority of non-users.

The above data indicate that the diffusion of the Internet in Hungary is strongly influenced by the fact that the Hungarian population has not yet grasped the substantial relative advantages that could be realized through using the Internet. One explanation is that, because of the complexity of the opportunities offered by the Web, it is rather difficult to determine the basis for comparisons. Another reason is that the services offered have many components and the "personal profit" is difficult to calculate.

Secondly, the costs of using the Internet are still very high in Hungary compared with the rest of Europe.

Thirdly, this perception appears markedly even in those groups where it would otherwise not be necessary to maintain such concerns.

COMPATIBILITY

The concept of compatibility shows the extent to which a given innovation can be harmonized with the values, knowledge and needs of potential users. For example, in a society where the prevailing norms do not allow for a strict control over workers, it would be difficult to promote software, or an administrative system designed for such purposes, because the community's values would conflict with the innovation's philosophy.

In the diffusion of an innovation it is equally important to determine the extent to which potential users possess the knowledge and the skills to use the given device. The fact that a cell phone has to be operated in a way very similar to the operation of already widespread land-line telephones has obviously contributed to the rapid diffusion of cellular phones.

These examples also show that the more compatible a given innovation is with the values, knowledge and needs of potential users, the faster and wider its diffusion will be.

Compatibility and the Internet

The Knowledge Required for Using the Internet

The fourth most frequent reason given for not using the Internet is that non-users are not acquainted with it and do not know how to use it: this was mentioned by 17% of the non-users. Apparently, a lack of the skills necessary for using the World Wide Web is an obstacle for many potential users.

In the case of the Internet, which is a very complex device, the circle of necessary skills is hard to determine. Although the World Wide Web can be accessed from different platforms (for example through a cell phone), the most popular means of access nowadays is a personal computer or a laptop or notebook PC. This means that using the Internet requires some basic computing skills – the ability to use a computer.

Unfortunately, only 28% of the Hungarian population has ever participated in any kind of computer training, while the other 72% have received no such education. In this respect, there are significant differences between the group of Internet users and

the group of non-users. While 76% of the Internet users have participated in some sort of computer training, only 18% of the non-users claim to have done the same.

We can witness further differences if we examine the computing skills of the two groups. Among those who do not use the Internet, 28% described their skills as "poor", 35% declared that their computer skills were "not bad", 34% considered them "good" and only 4% regarded their skills as "excellent"; whereas 11% of the Internet users claimed to have excellent computing skills and only 10% said that their skills were poor.

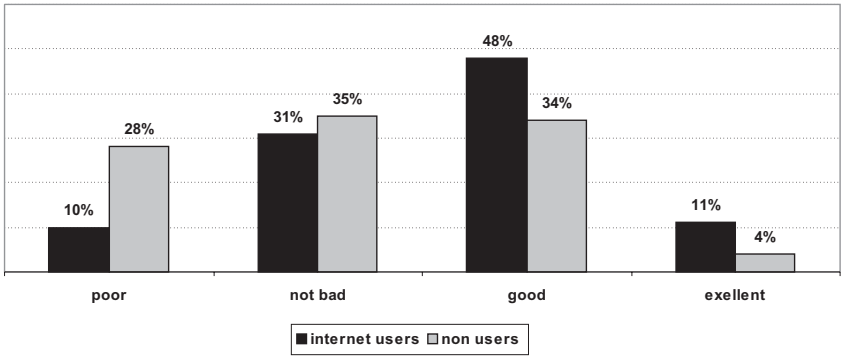

Figure 8. How would you describe PC skills?
(percentages in the group of computer users)

It is evident therefore that there is a higher proportion among Internet users of those who have had some computer training, and users generally consider their knowledge of the field to be better.

We can conclude from the above that possessing the necessary skills most probably contributes to a person's decision to use the Internet. Furthermore, the diffusion of the use of the Internet in Hungary is also influenced by the fact that many people simply do not possess the skills or education required for becoming a user. This is especially true of the adults who have already left the public education system and of the elderly. Today, most primary and secondary schools have computer tutoring among their curricular requirements. This probably contributes to the much higher proportion of Internet users among the young and among students than the proportion among other age groups and social groups.

It can be concluded therefore that the knowledge and skills required for using the Internet are to a large extent not compatible with the skills of the Hungarian population, and this may very well be one of the reasons why the World Wide Web's diffusion has been rather slow in this country and why its deeper penetration has only been witnessed in a limited circle of society.

Compatibility, the Internet, and the System of Values

The extent to which the Internet is compatible with the set of values of potential users is again difficult to determine. What can be said for sure is that, as we have

demonstrated before, the Hungarian population as a whole generally has a positive attitude towards technological development and the diffusion of information and communication devices. 70% of those asked have declared that new technologies like the Internet and cellular phones improve our world, while only 8% believed that these are making our world a worse place to live in (the other 22% thought that the diffusion of new technologies does not change the state of the world). The attitudes of Hungarian respondents towards the Internet can also be reckoned as positive, at least in an international comparison. Compared to American users and non-users, Hungarian respondents tend to agree less with statements about the problems caused by the Internet. Hungarian users and non-users are less convinced that people spend too much time using the Internet, and they worry less about their personal data than their American counterparts. Furthermore, Hungarians tend to agree more that the Internet helps to save time.

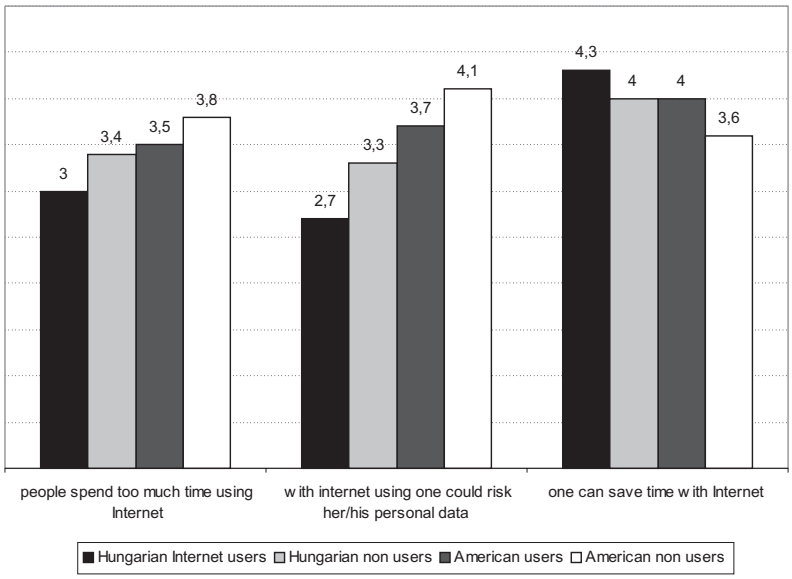

Figure 9. Attitudes about Internet in Hungary an in the US (average values of the answers on a five grade scale, 5=completely agree, 1=do not agree)

As we have discussed elsewhere, these attitudes can be explained principally by the limited presence of post-industrial values in Hungary; in Western societies, the main reason for increased technological skepticism is the more marked presence of the ecological or green way of thinking (Dessewffy and Fábián 2002).

But alongside the above data which show a relatively high degree of technological optimism for Hungary, we must also see the high level of indifference exhibited towards the Internet. In our country, it is a typical reason for abstaining from the World Wide Web: 40% of the non-users have mentioned that they do not use it because they are not interested in it. This characteristic attitude has manifested itself in the answers to other questions as well; for example, Hungarian respondents agreed less with the

statement that the lack of access to the Internet is a serious handicap than Americans did. On the other hand, they agreed more with the statement that the Internet did not offer them anything of interest.

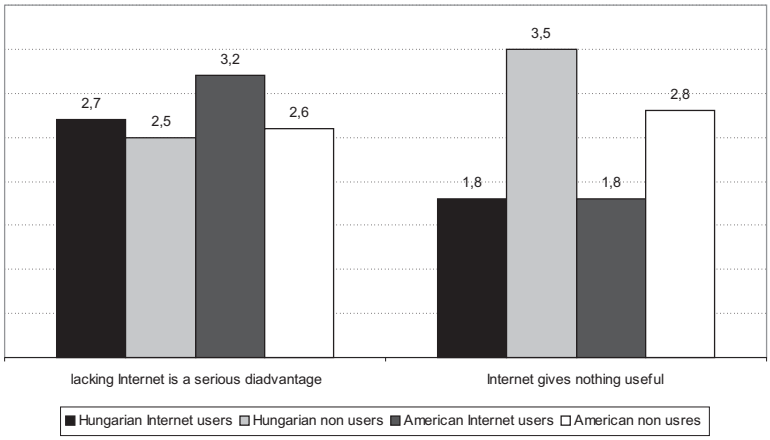

Figure 10. Attitudes about Internet in Hungary an in the US (average values of the answers on a five grade scale, 5=completely agree, 1=do not agree)

Thus, besides the general feeling of technological optimism, we can see that a relatively broad segment of the Hungarian population shows no interest at all in the Internet.If we further examine the role of the dominant values, we can discover other interesting elements. The Internet, as mentioned before, combines many functions in one and its potential field of application is very broad. It is expected that the Web will bring about a wide range of changes in the citizens' communication with each other and with governmental organizations and other institutions through one of its most salient features, namely the fast information flow it provides, which is additionally combined with the possibility of many-to-many communication. More precisely, some think that the Internet will help to establish a more direct contact between citizens and state institutions, and will become an efficient channel for political participation, gaining information, shaping public opinions and advocating particular interests.

It is interesting to see in the light of the above what Hungarian Internet users and non-users think of the Web as a tool for obtaining information about politics and for advocating interests. As shown in the following diagram, respondents can be considered relatively skeptical from this point of view.

The Internet as a supporter of active political participation ("People can increase their political influence through the Internet"; "People can have a say in the government's decisions through the Internet") has received distinctly low grades. Respondents have set a slightly higher value on the Internet as a tool promoting passive political participation ("The Internet helps in understanding politics better"). It is an interesting fact that Internet users and non-users have shown an equal degree of pessimism with regard to these aspects of the Web. Only one question evoked a more significant divergence: Internet users agreed more with the statement that the Internet

can help to better understand the world of politics. The obvious conclusion we can draw from the above is that those who are already using the Internet think that it does not perform political functions. However, this opinion does not necessarily concern the entire medium; it more likely stems from a lack of political contents and possibilities concerning Hungarian affairs. Hungarian institutions and governmental organizations have installed few on-line functions so far, and have not provided users with many of the communication opportunities offered by the Internet. This is also indicated by the insignificant difference between the opinions of Internet users and non-users regarding this question.

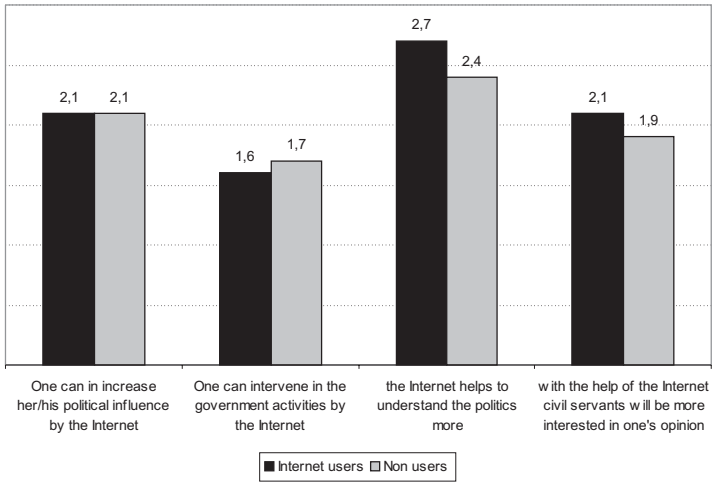

Figure 11. Opinions about the political effects of the Internet (average values of the answers on a five grade scale, 5=completely agree, 1=do not agree)

In discussing this problem, however, it must also be noted that according to our survey there is a general feeling of skepticism within the Hungarian population concerning the degree to which citizens can influence their environments and the actors of the political scene.

As shown on the diagram above, respondents strongly agreed that the leaders of the country did not care about them and that those in power were trying to take advantage of them. At the same time, they tended not to agree with the statement that an average person could have an influence on the government or other worldly affairs. The question is to what extent these attitudes will influence the use of the services and opportunities available on-line currently or in the future. It is feasible that the diffusion of the forms of political interactivity provided by e-democracy will be strongly influenced, and possibly hindered, by such pessimistic attitudes, since such forms will not be compatible with the attitudes of potential users. Yet in the event that a more optimistic scenario is played out, the new forms of communication and participation established with the help of the Internet may well become the factors that will improve people's attitudes towards political possibilities.

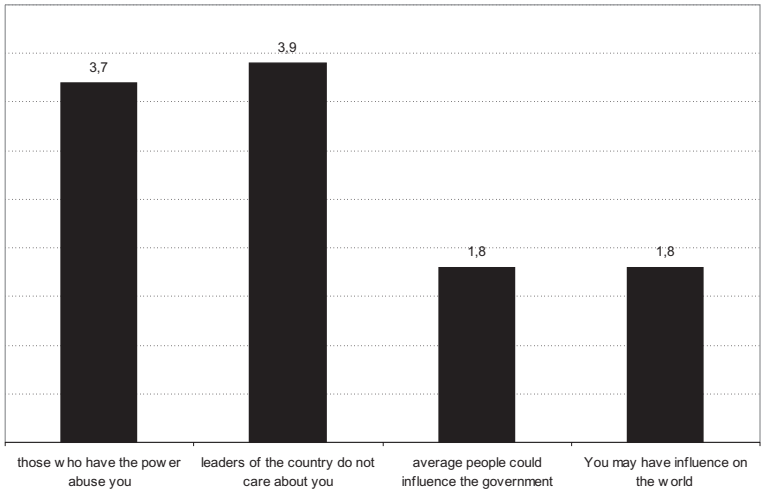

Figure 12. How much do you agree with the following statements? (average values of the answers on a five grade scale, 5=completely agree, 1=do not agree)

Compatibility with Users' Needs

This is another dimension that is difficult to operationalize. Since the Internet itself offers such a wide variety of functions, the needs defined on the basis of such functions can be equally varied and wide-ranging. Furthermore, there is also a theoretical problem which is not discussed by Rogers (understandably from his point of view, since it does not fit in his train of thought), namely the definition of 'need' itself. Yet this is one of the fundamental axioms used by the post-structuralist authors who criticize Karl Marx, when they emphasize the incidentality and the socially construed nature of drawing a line between real and false needs and of the concept of 'need' itself (Bauman 1992; Baudrillard 1981, 1983; Smart 1992).

In postmodern consumer societies, where the primary area of knowledge construction is media publicity, defining 'real needs' and separating them from 'false' or 'manipulated' needs is quite problematic. Thus the question is not only what is compatible, but also what the fuzzy-edged definition of the object of diffusion should be adjusted to.

Because of this, drawing up a "map of needs" not only falls outside of the confines of this study, it is also very likely to be an impossible undertaking altogether. Still, it is worthwhile to reflect heuristically on the relations between off-line needs and on-line practice. The conceptual matrix below is only illustrative and does not serve for classifying concrete actions – as that would require extensive empirical research. But it does offer a typology that may later help to clear up the currently chaotic off-line / on-line relations, even if the examples given are only illustrative.

The two basic dimensions of the matrix typify the relationship between the earlier described off-line needs and the on-line practice along simple dichotomic variables – not taking into account the construed nature of off-line needs and relative advantages. The types described in the four cells of the chart are the following:

1. Both off-line need and on-line practice are present. When an off-line need is "present", it means that the demand for the given function appears at least on the level of desires in the off-line world, or the opportunity to use the function would be welcomed. E-mailing is a typical example: it was obvious that this simple, free-of-charge and fast method of correspondence which helps to avoid the long queues at the post office would be greeted by everyone because of the indisputable relative advantages it offers. Electronic mail satisfied an already existing need, and it did so much more effectively and in better quality than expected; so its success is not surprising at all.

2. Off-line need is absent, on-line practice is present. In this case the on-line practice satisfies needs that were not articulated previously and are not self-evident; we could also say that it creates various needs. Examples include on-line chat and genealogy (family history research) functions. A rather large share of the e-mail messages sent can also be included here: we mean those messages that one would never send using the traditional forms of correspondence, such as those that consist of just a smile :-) or an expression of disappointment :-(.

3. Off-line need is present, while on-line practice is absent. Electronic public administration in Hungary, as mentioned earlier, is a good example. Citizens go online in order to have their personal documents renewed or to give notice of a change in their personal particulars, but all in vain – or to consider another area of life, getting an appointment at the doctor or getting your prescription medications from an online pharmacy are still some of the on-line functions missing in this country - even though there is an unquestionable "off-line need" for eliminating handicapped situations in everyday life. Of course there are not only spatial limitations to what the Internet can offer – if someone is made happy by smelling flowers, that need of his equally cannot be satisfied by the Internet at present.

4. Finally, the fourth and seemingly least problematic group contains those cases where both off-line need and on-line practice are absent. Still, because of the chaotic but dynamic development of the Internet, this category cannot stay still for long either: the autonomous processes of the Web can, at any time, produce certain practices that soon become off-line needs. One example is the emergence of on-line media stars, such as the cult hero Sándor Szalacsi, who practically started his own mass movement among the users of his Index forums.

COMPLEXITY

The concept of complexity indicates the extent to which potential users find a given innovation and its operation simple or complicated.

Experience has shown that the simpler a given device's operation is and the easier it is to learn how to handle it, the faster and wider its diffusion will be.

Complexity and the Internet

We should not determine the Internet's complexity on the basis of the wide variety of its contents and functions; rather, we should examine how easy potential users find its operation. In answering that question, it is important to keep in mind that the overwhelming majority of users nowadays connect to the Internet through a personal computer (even if that computer may be actually located in very diverse places).

Since the majority of the Hungarian population does not possess any computer skills, most people will see PCs as obstacles separating them from the world of the Internet instead of devices that help them to access it. While technological advances such as the mobile Internet or sound recognition may lead to major breakthroughs, as for the foreseeable future, the diffusion of Internet usage will still essentially depend on the spread of computing skills and on the number of people who learn the basics of using a PC. On the other hand, it must also be noted that with the current low penetration of Internet usage, there are still a lot of non-users within those social groups that have already acquired the basics of computer usage.

TRIALABILITY

The concept of trialability shows the extent to which potential users can test or try out an innovation before they actually adopt it. What this really means is whether it is possible for them in a relatively risk-free manner to try a given device and get acquainted with its operation, its advantages, etc. Free product samples are a typical example; they allow potential users to test the product and to verify whether it suits their needs, with no risk or investment involved. Obviously, the more opportunities consumers get to experiment with a given innovation in this way, the faster its diffusion will be.

Trialability and the Internet

Trialability can be regarded as a factor promoting diffusion in the case of the Internet as well. Considering what we have said about the obstacles presented by PC usage, we can say that if the basic computing skills are already at a person's disposal, it will only take him as much as pushing a button to 'sample' the Internet. Then again, this person's experiences will inevitably be limited to a minor proportion of the contents and services provided by the World Wide Web.

The opportunities for trying the Internet are multiplied if people have access to it at school, at work, or in public places; thus they can get acquainted with it in the public domain before they install it in their homes. This is one regard in which broadband Internet may be considered a breakthrough: its main appeal, beyond the fact that it provides faster access, is the flat rates one has to pay for it. As a matter of fact, many non-users who are already interested in trying the Internet at home are discouraged by uncontrollable and rapidly mounting telephone and Internet costs.

OBSERVABILITY

The rate of diffusion is influenced by the extent to which the advantages of a given innovation are observable for others. If a schoolboy starts to carry a backpack, all of his schoolmates may be quickly convinced about its advantages, and the phenomenon will spread rapidly. Whereas if the same schoolboy uses his superb mathematical problem-solving tricks only when he is doing his homework, his peers will not be able to observe them directly, and consequently his innovations will diffuse at a slower rate in his class.

From this we can conclude that the more observable the advantages of an innovation are to potential users, the faster its rate of diffusion will be.

Observability and the Internet

It is difficult to estimate the observability of the Internet's advantages, or to tell whether they are apparent at all. It is very likely that individual advantages can be better observed at the workplace and at school, which leads to faster adoption. This is possibly the reason behind the fact that the proportion of Internet users is well above the average among people belonging to certain professions as well as among students. However, those who have already left school, or do not have a job, or work in professions where they do not encounter the Internet, will necessarily have few opportunities to observe its potential advantages. For such people, their own home and their family environment could still provide an opportunity for observation; but we know that only 8% of all Hungarian households have an Internet access. Even so, certain people are able to find out about some advantages of the Web through the experiences of their Internet user relatives, and this can encourage them to use it themselves. According to the data we obtained, 61% of the Internet users have at least one family member who also uses the Internet. This figure is only 22% among non-users.

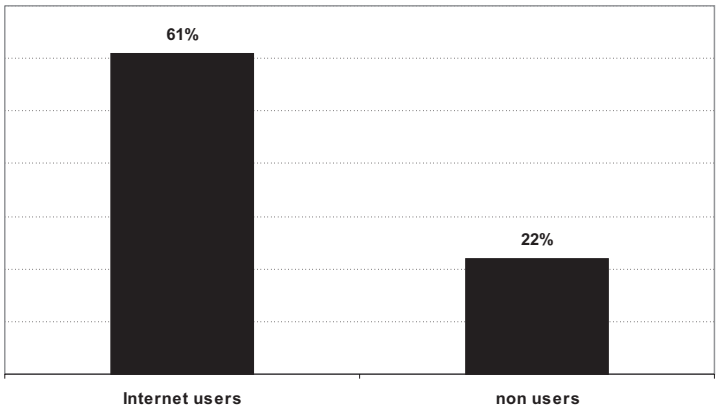

Figure 13. Do you have an Internet user in your family? (ratio of positive answers)

To sum up, we have surveyed what can be said about the Internet within the dimensions that Rogers' diffusion theory considers the determining characteristics of the object of innovation. Concerning the particular dimensions of relative advantage, compatibility, complexity, trialability and observability, our conclusions regarding the Internet have been, to say the least, heterogeneous.

Therefore we believe that the reader will not be surprised very much if, based on the foregoing, we will now conclude that when we examine the Internet in the conceptual framework of Rogers' "perceived characteristics", we find that it does not exist. This constitutes the theoretical message of our study. Even though we have seen that in certain contexts, the word 'Internet' can be interpreted as a meaningful semantic unit, with regard to most dimensions we have had to conclude that the 'Internet' combines such a wide range of various functions, applications, demands and contents that it practically excludes the possibility of making unambiguous statements about its immanent or perceived characteristics.

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