

Indicators of the digital divide and its link with other exclusions

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ABSTRACT

Many papers deal with the digital divide but they often rely on the analysis of uses and users or on digital inequalities. The purpose of this work is also to contribute to the knowledge of the still important proportion of the population who do not use the Internet or who is qualified in surveys as non Web surfer. We explore the variegated situations of digital exclusion and particularly its links with social exclusion and with some other forms of exclusion such as economical or cultural ones. We wonder especially if the distance to the Internet, or proximity, is different for different types of exclusion and if we find within the digital divide expressions of exclusion.

To this end we first review studies establishing the link between digital exclusion and social exclusion. In the second section, we explain in details our approach based on a first work, a participative survey including non users' reflexion to all steps of that survey (Boutet et Tréménbert [2008]), and then its extrapolation to a whole French region via an empirical survey on 2000 individuals. This first work was the result of a rich dialogue between qualitative approaches and quantitative approaches. The former is extracted from the sociology of uses - which reflect the complexity of situations of non-use, based on the individual personality, their history, their experience, their environment. The latter aims to produce objective indicators, able to portray the most accurate and precise observed situations, while allowing reflection on the results obtained through the study of non-use factors (determinants that are classic, such as socio-economic, or other such opinions). More than new indicators of non usage, we will indicate how investigating in statistical techniques (descriptive and multidimensional techniques) can improve the knowledge of the digital divide. We conclude by results such as a new quantitative typology of non-users based on data on inhibitors, motivations, points of view and picturing. We also describe the specificities of some categories of non users, and users, considered as underprivileged when facing ICT. Furthermore our paper allows providing some specific policy responses.

KEYWORDS

Digital divide, e-inclusion, indicators, social exclusion, statistical inquiry.

Despite the fact that the number of Internet users is worldwide increasing, a still significant part of the population can be classified as excluded from the digital society (one third in France, the same in England or in Germany). According to Wyatt and al. [2002], although the contours of this divide may vary between countries, this divide is merely a reflection of national traditions of difference and exclusion, and it is becoming clear that social divisions in Internet access continue to exist. Many works focussing more on users and their characteristics ((Demunter [2005] The Guel et al [2004]), Credoc, Mediametrie ...) show also, appearing by reading between the lines, that the non-use of ICT can be interpreted as *a result of exclusion* and marginalization. Conversely, depriving them of potential ICT use, including the potential ability for users to upgrade their social status or position in the Society and thus to occupy a place that could be seen as more rewarding, the non-use of ICT also appears as *a factor of exclusion*. We now understand the need for governments to investigate the issue of non-use and its many facets.

A priori, a non-Internet user does never use the Internet. But next to people who have never "touched" to the Internet, there are others who, in the past, have used, but do any more. Other cases are more complex. We met them once we left our technophile environment, going on the ground to meet people more or less removed from the digital world. Here are some examples we met during a study on an underprivileged district of Brest (Boutet and Tréménbert [2008]). The mother was communicating with her faraway family through a computer with a webcam and Skype, and claimed not to use a computer or the Internet because it was her daughter who made the setup process. An other mother was able to describe the exact steps to download movies and musics and had never had any contact with a computer because her husband forbade it. At the opposite, a woman expressed her as user but it is actually her husband or her children who did the research when she needed it ... What to

say about the occasional users, with a frequency of use about once or twice a year? Are they considered as users? Hence, there are so many forms of non-use referring to the irregularity, the short duration of connection, the reduced level of knowledge, the absence of autonomy.... With regard to each of these categories, the choice of the contours can condition the belonging to users or non-users classes. Besides, the variety of situations is exacerbated when, in addition to reporting to the Internet, we take into account the socio-demographic situations, resulting in renewed borders. For example, are a working person and a senior regular Internet user alike? Do they have the same degree of knowledge about the Internet? Do they have the same uses of the Internet? When resistant, are they alike? Are their reasons not to use the same? What are the apprehensions of the former or the latter? *On top of helping to understand the polymorphism of the digital divide, we may wonder if the distance, or proximity, to the Internet is different for different types of exclusion and if we find within the digital divide again expressions of exclusion.*

1. A REGISTER ESTABLISHING THE LINK BETWEEN DIGITAL EXCLUSION AND SOCIAL EXCLUSION

Digital exclusion and other forms of exclusion are linked. Gros-Jean and Padiou [1995] define exclusion as a process of accumulation of breaks with the basic forms of social link (home, family, twosome and work) and with basic shapes of prevailing livings in a given society. As the digital part of lifestyle is now prevailing, it is possible for an individual to combine both digital exclusion and other forms of exclusion. Conversely, according to the findings of the last French Ministerial Conference on digital inclusion [2008], actions in support of digital inclusion should also include measures related to social inclusion, employment, education, Administrative reform, the territorial cohesion and health.

In the literature, the different levels of exclusion are often discussed along three dimensions. The economic exclusion, that is to say in relation to the mode of consumption in the world of work. Are concerned the unemployed, people in precarious situation of employment or low qualified employment, homeless people. The social exclusion is in relation to a sphere of collective life (family, neighbourhood and association), a social life. The cultural exclusion includes examples of situations such as academic failure or illiteracy. It is expressed through cultural practices and judgments which, according to Bourdieu [1979], function both as factors of integration, certifying the belonging to a social class, but also as a disqualifying factor. *But is digital exclusion related to all these dimensions? Do we find within the digital divide expressions of exclusion?*

For many, the digital divide is a new expression of the social divide. Initially, starting in the early 1990s, some American studies already highlighted the risks associated with exclusion of certain social groups in relation to ICT (Rallet and Rochelandet [2004]). It is also in these years that the term "digital divide" has been proposed by Long-Scott [1995], highlighting the risks of exclusion of the poor and of community minorities confronted to communication technologies in terms of participation in democratic life. However, the digital divide includes inequalities of different sizes and very different natures. While initially it was seen as a form of exclusion of those without access to ICT, then a second divide occurred, based on effective uses of ICT. The digital divide became according for instance to Rallet and Rochelandet [2004] the separation between those who use ICT (in an effective and creative) and those who do not use them or not like this. The reflection directs less on ICT mean, but mainly on the conditions of effective use, of their appropriation and their promotion by the excluded persons.

For others, the sole digital divide, more often and voluntarily expressed by the term "digital inequality", will represent only a tiny fraction of all the inequalities of development and will be difficult to dissociate. According to Ben Youssef [2004] in his analysis of the digital divide in four dimensions, the demonstrations of the existence of gaps (of equipment, connections ...) or of the increasing of these differences separate weakly the share due to ICT from the one due to traditional mechanisms of inequality. Nevertheless, one might ask if voluntary or not disinterest of ICT and deeper socio-economic difficulties (poverty, inequality in education ...) are linked. "Voluntary" because among those who do not use the Internet, there are people who are intentionally outside the Internet world (by fear of technology, lack of time, disinterest). "Involuntary" because among them there are also people living on the fringe of society due to economic (lack of financial resources) or social (lack of skills, training) discrimination. *What are these digital inequalities and what kind of publics are affected by the digital exclusion?*

A. CONCERNED PUBLICS

Works on the digital divide, such as those mentioned above, generally **identify them quite well**. From a quantitative point of view, socio-demographic groups that are deviations from the average population (considering ICT use) are considered in digital exclusion. The chose indicator is usually the rate of users. Thus, while on average 63% of French people are Internet users (Crédoc 2008), people aged from 60 to 69 appear a long way off users (with only 32% of Internet users). Socio demographic variables (age, gender, family composition, education level, income, occupational category) or political and geographical variables (differences between urban and rural areas, between regions and between countries, between North and South) map out the differences between the various sub-groups. Theoretical and empirical works often converge in designating as primary determinants, age, education level and financial resources level.

We just have to keep in mind that:

- **Interactions** between socioeconomic factors are very strong: for example those with low educational attainment have often also low income.
- Some differences in the appropriation of ICT reflect differences between individuals and groups, differences in preferences, differences in cultural background or in job profiles ... and others are only transitory and reflect **the classic adoption curves** (men, young people ...). On the other hand, some differences are **structural**, either because they are closely related to the pre-socio-economic differences, such as education and income, either because they are created by the way ICT industries, early adopters, policymakers and even the form of technological innovation analyse them¹.

B. DIGITAL INEQUALITIES

Several Francophone and Anglo-Saxon studies, built on quantitative surveys often complemented by qualitative surveys, primarily focus to describe rather the **numerical inequalities** encountered than the concerned public. They all show heterogeneous situations and generate profiles. Some consider past experience, others do not. All identify socioeconomic factors associated with different profiles (and sometimes profiles are only constituted by those illustrative factors!). Some emphasize some factors more related to the place of technology. Trying to go further in determining factors in the adoption or rejection of the Internet, those factors are based on intentions, reasoning and motivation, or perception of life (through notions such as life's control, confidence in the other, confidence in the Company, use of the circle).

¹ Cf. the "e-Inclusion: New challenges, new policies" report of eEurope experts

In 2003, the American Lenhart and his team (Lenhart et al, [2003]) established a non-user typology based on four classes: the evaders - the result of a desire not to use the Internet -, the dropouts - former users -, the intermittent users - users at the time of the survey but who have already stopped -, and truly unconnected - totally isolated from the digital world.

In 2005, Jullien and Trémenbert (in their "Panorama of ICT uses in Brittany") analyzed the 47% of Breton who do not access to the Internet regarding individual and household characteristics. The appetite vis-à-vis a future Internet use was increasing with the level of social capital (connected circle, financial capacity and initial level of education). Three major classes emerged: (i) Those who intent to (ii) Those who should intent to: with resistant and volunteers, and (iii) those who were far to get to it (81%): with socioeconomic excluded, generation excluded and indifferent people.

In 2005, Cohendet and Stojak of Canada's national statistical agency identified three groups of non-users according to their distance from current and future Internet but with very different justifications. They were the radical non-users, the remote potential users and the quasi-users.

In 2006, seeking to establish a hierarchy of non-users, Selwyn overflowed a bit at the border of non use and use. He described three categories: the "absolute non-users", claiming they are quite similar to the Lenhart's "truly unconnected", the "lapsed users" who even if they do not use again have substitute uses, and finally the "rare users" with a limited range of applications.

In 2007, Laborde and Soubiale proposed five types of Internet relationships: indirect users, totally disconnected users, distanced users, dropout and occasional users. Then they crossed those profiles with their intention surfing the Internet. They ended up in four categories of non-Internet users: radical non-users, young indifferent non-users, indifferent non-users living with a web surfer and quasi users.

Finally in 2008, the Walloon Telecommunications Agency proposed the following profiles, from a mix of face positioning technology and social determinants: (1) resistant to novelty, (2) social fractured working persons with no proxies, (3) social fractured working persons with proxies, (4) social fractured non working persons with no proxies, (5) elderly couple with no proxies, (6) lonely senior with no proxies.

From these various works dealing with the quantitative measurement of non-use, we have already noted in a previous article that they emphasize the importance of the environment and the environment in the pattern of non-practices. They also emphasize the role of proxies, these people who act in place of others, and emphasize the crucial psychological, sociological and personal individual factors. However, they remain on a primary approach for explanations or statements given by interviewed persons. They find their limits in that **they do not put statements in context of their individual activities and systems of representation** (Boutet and Trémenbert [2008]).

Among the works dealing with numerical inequalities, we may also note the work of researchers at the Oxford Internet Institute [2008]. This work is this time directly focused on the relationship between digital exclusion and social exclusion. This is based on different conceptual models of digital inclusion and social inclusion. They test the link between these two concepts using four assumptions and quantitative data. To model the e-inclusion, they use the vision of Van Dijk [2005]. Digital inclusion is based on digital resources which could be seen in four types of access revealing the level of ICT appropriation: the (technological) quality access to new technologies, skills in use of technology, motivation or attitudes and the use itself. As for Van Dijk digital exclusion seemed rather a consequence of social exclusion, the researchers note that these four dimensions could both be derived from a process of social exclusion and digital engagement and influence. Indeed, digital engagement would then be determined either by exclusion related factors and barriers (presence or absence of these resources), either by choice. Concerning social inclusion, they distinguish five major

categories of resources: economic resources (education, income, employment status, location ...), cultural resources (gender, generation, ethnicity, religion ...), political resources (civic and political participation), social resources (social network and involvement) and personal resources (values, physical wellbeing and psychological). Through the four hypotheses² they pose, they try to know if there is a link or not and especially what is its nature and then what are the limits. We will note that these tests are conducted **on macroscopic analysis across groups** and not on the microscopic scale of the individual and its own characteristics.

2. METHODOLOGY

Building on lessons learned from this literature review and the results already obtained in the participatory approach implemented in the spring 2007 to spring 2008 among non-users [Boutet and Tremembert, 2008], our next step was based on extrapolation of understanding of non-users in an entire French region, Brittany³.

The first participatory approach was based on two interrelated findings: firstly, the difficulty in approaching the non-users and to describe them; on the other hand, specification of non-users is known mainly through surveys which are carried out on users. Inhabitants of Kérourien, a district of the big city of Brest, were interviewed. This area is classed as a sensitive urban zone (ZUS). This participatory investigation was unique not only because it was solely **intended for non-users**⁴, but mainly because the non-users were **implicated in all the stages** of the investigation (from conception through to execution and data processing). Its main objective was to collect information on the limitations and obstacles to the ICT diffusion in individual interviews, a group and then via a local quantitative survey, in order to improve knowledge of non-Internet profiles.

Firstly, this step required from us a lot of work to deconstruct notions of use(s) and user(s) so that we can approach the non-use except by the use and take into account the specificity of life courses. We particularly got **a comprehensive view on the main justifications** for non-use mentioned by the interviewees. It took out again several items that we consider structuring the understanding of situations of non-use such as **the weight of the environment, the technological environment, the access to digital technologies information, the technology experiences and the skills, the time management and the priorities, and finally the expectations of non-users for support**. We improved the understanding and the measurement of these items. The survey stressed the particular importance of the environment in the dissemination and appropriation of uses, especially for those often excluded people. Among non-users, the lack of use of the Internet in the environment is crucial. However, the role of relatives in the adoption of practices is to question, because it requires a better understanding of roles within the household: the family may play a role. It can be in prescribing (by helping their parents to use the web tools), but also censoring (by excluding them from discriminatory practices or behaviours). There is also the role of "proxy", that is to say mediators of practice. In any case, non-users do not necessarily live in an environment devoid of technology (in this area 59% of respondents had a computer in the home and 49% of Internet connection).

² « H0: There is no link between social exclusion and digital disengagement », « H1: Social and digital inclusion are positively linked only for specific types of social and digital exclusion ». « H2: The link between social and digital exclusion can be fully explained by differences in basic barriers to ICT use (access, skills and attitude) », « H3: Any effect of digital engagement on social inclusion is explained by differences in enablers of ICT use effects (relevance, empowerment and nature of experiences with ICT)

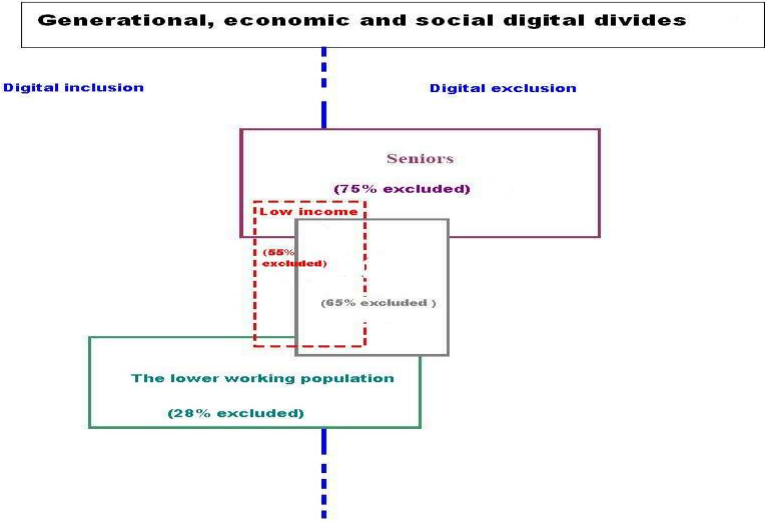
³ Region which has characteristics of a demographic point of view slightly different from all observed throughout France, except a slight over-representation of people aged 60 or older and those living in rural areas.

⁴ And note that in this area non-users were often also in social exclusion

Subsequently we transferred those items in the 2008 regional questionnaire and integrated new questions. Those ones further delineate the issue of non-use, questioning about intent, purpose, representations, views and contacts. As will be discussed in the results, the survey revealed by figures that digital divide is still present, covers a wide range of different degrees of non-use (regularity, duration, level of knowledge, autonomy ...). From the elderly person, little techie, who did not consider the Internet's utility for its own case to the younger person, who may yet have a A-level, but who chose not to devote his time, through the one who is not easy writing. *We will analyze those situations, using a typology in terms of level of information and level of motivation.*

Finally, wishing to explore the digital divide in relation to other forms of divide, particularly to the social divide, we paid meticulous attention to the statistical analysis of this survey. We wanted to try to understand the mechanisms and dynamics underlying the use / non-use of the Internet. We felt it important to analyze both **the divisions in the uses and those in non-uses**. And especially those of audiences considered as digital exclusion. Moving the cursor from the understanding of the diffusion of technologies both to **the analysis of certain types of non-users**, and to **the analysis of users with a particular profile**, we believe we have cast new light on the many facets of the digital divide.

It is from socio-economic-cultural angles (the three different angles of exclusion already mentioned), that we have identified four profiles which could be disadvantaged by the use of new technologies. These are: (1) the “seniors” or the over-sixties: 75% of them have never used a computer in the last 3 months preceding the survey. (2) The “lower working” population: people aged 25-59 years who are unemployed or declare to belong to the socio-professional classes of workers and farmers. For information, they represent about 40% of 25-59 years and 28% of this category are not Internet surfers. (3) The "low income" people: people who answered that life is difficult or very difficult regarding the home current income. They are 16% in the sample. 55% have never used a computer in the last 3 months preceding the survey, a fortiori the Internet. (4) The "socially isolated" people: people who answered that they less often meet friends or family, they less often participate in cultural or sports activities. 10% of the total sample is in this group. *Thus, we will statistically and descriptively compare⁵, (1) the group of non-users vis-à-vis Internet users for each of that four profiles, and (2) for each profile the group of non-users vis-à-vis other non-users in the total population.*



⁵ Profiles 1 and 2 are mutually exclusive. Profiles 3 and 4 overlap and also overlap with profiles 1 and 2.

3. RESULTS

Thereafter and for all statistics, we will fix non-users as individuals who have never had any contact with computer technology, or those who reported not having used a computer in the last three months (their use is not regular). In the M@rsouin 2008 telephone poll (2000 representative responses), they represent a population of significant size: one third (32%) of the over 15 years old population. Few cases were experienced: only 2 out of 10 non-users have had contact with the computer and in 75% of cases the last contact dated from over one year.

A. A STRONG SOCIAL DETERMINISM AND A GENERATIONAL PHENOMENON

The first main result is that the socio-economic classic profile (notably the age) has a strong predictive role. Knowing some characteristics enable to predict, with over 70 percents accuracy, the use of the Internet. We used two methods of “resampling” on our data to prove it: cross-validation and bootstrapping. In the first case, we divided the data into 2 subsets: one contained 70% of the answers and was the training file, the other 30%, the testing file. Being sure of the good representativeness of the first sample, we used a logistic model to predict the probability that a person uses the Internet from knowledge of the person’s age, sex, education level, financial resources level, occupational category and localisation. We then applied that model on the testing file and found that 82% of predicted non-users were found to be real non-users, 77% of predicted users were found to be real users. In the second case, the bootstrapping method, we constructed 100 resamples of the 2000 individuals observed dataset. They were obtained by random sampling with replacement from that original dataset. We found that 86% of predicted non-users were found to be real non-users, 80% of predicted users were found to be real users.

As the age is of primordial importance, we decided to separately analyse the “juniors” sample and the “seniors” sample (60 years and more). Using again a logistic regression on the probability to be a non user or not to be, we found that the occupational category (or the ex one for the “seniors”) and the educational level were significant determinants for both of the two samples and that income and sex helped to get a better prediction in the case of the “juniors” sample. Generally, less than 1 out of 3 non-graduates may be qualified of 'user', while 92% of graduates of higher education surf the Net.

B. A BETTER UNDERSTANDING IN EXPLORING PERCEPTUAL FACTORS

Those determinants were the pre-determined factors, those you can not change, influence, those independent of your will. We then explored other factors, especially those which were due to attitudes, circle and penetration of technologies.

We observed that **non-users are often digital isolated people**. We questioned the role of both technological and social environment. Is the technological environment in which non-users are evolving determining in the adoption of Internet use? More specifically, is the probability of use larger if the environment is tech-savvy? Is it similar if in the individual’s environment a high proportion of people use the Internet? Here is the first indicator of digital isolation: the low technological equipment of their home. If a household with at least one computer has almost, in average, 6.0 technologies (on a list of 12 proposed technologies⁶), non-equipped households own hardly more than 1.5 technologies. On top of that, 83% of non-computer users live in households without computer. The second indicator is the absolute non-use. 81% of our non-users have never used a computer. 72% of the few non-users with a

⁶ DVD player, mobile phone, GPS, digital camera ...

computer in their home have never used it. The lack of use of the Internet in the environment is crucial. This is true at the household level: only a quarter of (not living alone) non-users live with at least one user (a spouse, child or another person in the household). But it also applies to family, friends and neighbours. They are only 17% to declare that their circle use it (versus 57% for users).

Then the results confirm that **the digital divide goes hand in hand with social divide**. It is impossible to establish a cause and effect relationship. We could only observe that those two situations were statistically linked. To demonstrate it, we constructed a social life score based on frequencies of meetings of friends, meetings of family members, of participation in cultural activities and in sports activities. We found that the probability that an individual with a high social life score proves to be internet user is high (5 times more likely). Conversely, 71% of people with the less developed social score are non-users. While 61% of Internet users are in the upper category of social life, it is the case of only 29% of non-users.

Even among non-users there is a "digital divide" linked to the degree of knowledge and motivation. A misrepresentation of the Internet, its uses and its value, and low intent to use play a leading part in non-use. To highlight it we used standard classification methods (a hierarchical ascendant classification on the factors issued from a multidimensional correspondence analysis). The obtained **typology** revealed five profiles of non-users⁷. The non-users grouped according to their proximity within responses to questions of involvement⁸ (intent to use, perceived usefulness of Internet, experience, uses representation and circle's involvement). We later characterized these classes and established a sort of "standard profile" examining some other characteristics such as opinions on the Internet, reasons for non-use, Internet use by family and friends, and of course classical information (age, CSP, income ...).

Are non-users under-informed or under-motivated ?



⁷ The number of sub-samples was not determined at the outset but rather built to optimal cutting. Each constituted class has a minimized intra-class difference (so many common characteristics within the same class), while maximizing the difference between classes (inter-class difference).

⁸ The questions were : "Do you intent to use one day the Internet?", "Even if you do not regularly use the Internet, would you say that the Internet could be of use to you?", "During the last three months did you ask someone to do something for you with the Internet? (seek information, email, declare something on line ...).", "Have you been using the Internet in the last three months ?", "Here are some activities that we can have with a computer and the Internet, do you already know them?"

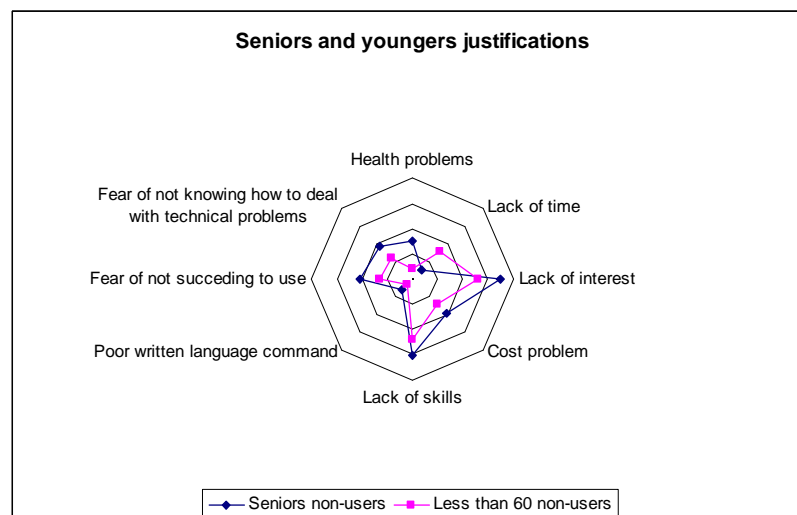
In fact, 65% (41+19+5%) of non-users are well informed about the existence and the opportunities of the Internet. Among them, 41% have no motivation at all (*unwilling* presumably), 19% are moderately motivated and could be *potential users*, only 5% are very motivated and very knowledgeable and will be *users as soon as they can*. Of the 35% least well informed: 19% are totally indifferent to the use of ICT, they are the *excluded*, for objective reasons (age, status, health ...) or subjective (fear), 16% would be somewhat more motivated, although they are a few informed but still *refractory*.

Even if 6 out of 10 non-users feel they can never make use of the Internet, ultimately, the true excluded from the digital society, those who are reluctantly, probably represent only a small quarter non-users. And it is these individuals who must be helped first. If for some non-users, there is no need to inform them on Internet use, for others it may represent the starting point of a policy primer to reduce the digital divide.

C. MISREPRESENTATIONS AND RANGE OF JUSTIFICATIONS

The over-sixties non Internet users generally have not a clear representation of the potential of the Internet, and what can be done with this tool. Even among more aware “seniors”, the representation is often only partial. For instance, if some know that the Internet allows students having fun, playing, communicating, they are not aware of online encyclopaedias, virtual museums visits. It's quite the same for the “low income” category. The seniors’ representations are also more misleading; they often think that the Internet is a tool for others, for the youngest, for working population...

Generally, the justification for non-use is linked to both the personal, social and economic points of view: lack of interest, lack of skills, age, budget ... and to technological point of view: the Internet is for the youngest, is in fashion, is for the workers, destroys family ties and other links ... The following chart compares “seniors” and “under 60” reasons. It shows that all the justifications offer higher rates of stronger adherence for “seniors”, except one, the lack of time. Some non-users can choose not to use the Internet for lack of time to devote to it (including learning time and use time), having to make tradeoffs in managing their time between leisure time, professional time and domestic time. This is often the mothers’ case but less the case of “seniors”. On the other hand, lack of interest and health problems (often related to age) affect more the “seniors” non-users. But the fear of not succeeding, of not being able to use it, is the element with the greatest differences (case of 21% of “seniors” non-users). Other justifications, even so important, as the perceived lack of skills, fear of not knowing how to deal with technical problems or cost problems are shared by both populations.



“Lower working” people are generally more informed and motivated. But what is generally lacking that profile to go through the use of Internet? As for others, the lack of interest in technology, the lack of training in use, the lack of technical skills, or the fear of not succeeding and the cost restrain almost 1 out of 2 of them. But the big difference with other non-Internet users is the lack of time to devote to. They are 40% to say it (versus 17% for other profiles). Their point of view vis-à-vis the Internet is more pronounced. "No, the Internet is not just for young people who work. No, the Internet is working properly. And if it abolishes distances, it does not destroy family relationships, relationships with others."

Of course the "low income" non-users primarily justify themselves of their lack of financial resources. 69% quote "the too high equipment and connection costs" (versus 37% for the remaining non-users). Are there any other specific reasons? Lack of time does not seem to be a hindrance for this category. The lack of interest is not obvious. On the other hand, because of their strong correlation with low incomes, poor command of written language and the fear of not succeeding emerge (24% versus 9% and 63% versus 38% respectively).

If the "socially isolated" profile is fairly similar, the major differences lie in the non-use reasons: health, literacy and confidence prevail. 40% cited as brake a health problem, 58% fear, 20% poor command of the writing.

D. BREAKING THE BARRIERS

For "seniors", the more they use other digital technologies, the more the probability to be Internet users is high (results based on logistic regression). Similarly, the technological equipment and the educational level are also good predictors of use among the “lower working” population. On the other hand, for them the sociability criterion is important: a person who does not usually go out will be 4 times less likely to be an Internet surfer than a more sociable person. If the techno-savvy imports in the other cases:

- For "low income": age no more matters, being obliterated by the presence of children in the home that proves to be a better predictor. If we add educational level and social skills, we can predict with a 94% accuracy the use or non-use.

- For "socially isolated" persons, age and presence of children are important.

Compared with the general population, the famous four profiles acquire more skills through self-learning, particularly for the most "socially isolated". "Seniors" and "low income" persons more often acquire their skills through their personal environment.

Once they use the Internet, we also observe specificities of uses for those profiles. Comparing uses percentages, over-sixties Internet users do also communicate and find information but they are less online players or contributors, they are not attracted by e-commerce (purchases, auction sites, invoices, banking ...). The daily proportion of “lower working” Internet users is less important. And that’s the same for computer uses and for software uses. They particularly tend to be more present on the net to better inform themselves of the legislation (case of 3 out of 4), to find buyers for the products they wish to sell (case of 1 out of 4). If income can be a hindrance or a way to rationalize choices and priorities, there is no discrimination in terms of actual usage. We just note that "low income" use is then slightly less regular: a few times per week rather than daily. Similarly, the “socially isolated” use is not special, except that they have fewer regular activities on the Internet and the computer. And only 54%, versus 38%, never online follow the news. Perhaps they do spend more time on the Internet. The "socially isolated" users are image consumers, but not "rich media" consumers. They are very big television consumers: 23% spend more than four hours a day watching it (versus 9% for the other Internet users). The results confirm that they quickly make their arbitrations between traditional and still alive consumption (watching TV, going to the movies) and fast-expanding

new practices (watching DVDs, surfing the Net, including downloading contents or just viewing them).

4. CONCLUSION

Further to a qualitative approach and a quantitative survey, this new research confirms once again that non-users have different faces and bring **new elements to these faces**. Among the many facets of the digital divide, generational, economic, social and cultural forms have been exposed through ICT relations of four segments of the population often seen as remote. It appears, once again, clearly, that the multiple digital divides are linked to the diversity of socio-economic situations. Access and use are hindered by financial conditions for people with low incomes. However, we must take into account many other barriers, particularly for other populations of non users. Thus, some, often “socially isolated” persons, will prefer TV to the Internet. Others, often “seniors”, are more interested in maintaining their know-how than investing in a new experience. On the other hand, financial exclusion goes most often hand in hand with a negative perception of the ability of the individual to be able to use the Internet. Fighting against e-exclusion also means fighting against a lot of other exclusions.

The digital divide is not only a consequence of social inequalities and economic conditions; it is also linked to various personalities of the individuals, particularly the will to get involved in Internet use. We have also put forward new elements to explore the process of **building the systems of representation**, about cognitive and social dimensions of construction of experiences of non-use. We have a better understanding of users through proxy / intermediate and particularly the interactions between them and their proxies.

The survey also revealed that cases of non-use are rarely the result of a single phenomenon, the non-utility, but a convergence of personal, social, cognitive processes that contribute to the construction of experiences in dealing with the technique. This brings us to the question of access to knowledge and information and relation with non-use because we find both (1) non-users who are informed but who do not do (2) non-users who do not want and (3) uninformed non-users. As recommended by Van Dijk we sort of went “beyond the rather shallow demographics of income, education, age, sex, race and ethnicity and looked for the deeper social, cultural and psychological causes behind the lack of access of particular people” and went “beyond the usual descriptive investigations of the digital divide” using multivariate analyses to better understand it.

We hope that the various actors of digital exclusion prevention will find in this version new items. **New avenues** specific to each segment could emerge: a financial assistance to purchase and / or subscription, a financial assistance to support, a targeted training, a training based on one’s fellow creatures uses, an information on the assigned role of prescriber, a targeted advertising campaign, a public awareness campaign of the existence of simplified versions of Internet access (such as ordissimo in France) or adapted software (such as voice recognition, screen) ... (without excluding combined politics).

We still believe that to improve the understanding of non-use, researchers should investigate the following three headings, not necessarily exclusive of each other. "The first line of investigation postulates that the situations of non-use are the result of one or more decisions from the people. Inspired by the theory of resistance, decision processes can be explained by the structure of technical and social environment, the construction of confidence or no confidence, experience in respect of technical objects. The second line of thought is to investigate the perception and definition of everyday people through the activities and organization, time management, management of space "(Boutet and Tréménbert [2008]). The third axis (see the work of Boutet and Drogue [2009]) aims to investigate the difficulties of

acquisition of cognitive and social resource and of skills. They allow certain non-users to be fully appropriate to these tools and the potential that they offer in terms of empowerment and creating opportunities for their own needs. For, if the equipment access and networks divide tends to reduce with a bit of effort on debt or arbitration in the family budget, at the opposite the divide is still prevalent in the uses and in the capacity empowerment.

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