

Living and Working in the Information Society: Quality of Life in a Digital World

Final Deliverable European Media Technology and Everyday Life Network (EMTEL)

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EMTEL - General preface

The European Media Technology and Everyday Life Network (EMTEL) was funded by the European Commission (grant number HPRN ET 2000 00063) under the 5th Framework Programme. It was constituted as a research and training network within the programme, Improving Knowledge Potential and oriented towards “creating a user friendly information society”.

EMTEL conducted interdisciplinary social scientific research and training between 2000 and 2003. This report is one of 12 submitted to the EU in September 2003 as final deliverables for the project. Copies are available on www.lse.ac.uk/collections/EMTEL and a full list of the publications can be found as an Appendix to this report. Contributing partners were as follows:

- ASCoR, The University of Amsterdam
- COMTEC, Dublin City University
- IPTS, Seville
- LENTIC, The University of Liège
- Media@lse, London School of Economics (co-ordinating centre)
- NTNU, University of Trondheim
- SMIT, Free University of Brussels
- TNO, Delft
- SINTEF, Trondheim.

EMTEL sought to bring together young and experienced researchers in a shared project to investigate the so-called information society from the perspective of everyday life. It undertook research under two broad headings: inclusion and exclusion, and living and working in the information society. It then sought to integrate empirical work and developing theory in such a way as to engage constructively with on-going policy debates on the present and future of information and communication technologies in Europe.

Roger Silverstone

EMTEL Co-ordinator

Aim of the report

This specific EMTEL Final Deliverable aims to assemble findings from the various EMTEL project studies with regard to the key issues of “living and working in the Information Society”. Special emphasis is given to the relationship between Information and Communication Technologies (ICTs) and quality of life. As set out in the EMTEL project structure, the report centres around the results from the Key Deliverables produced by the EMTEL Young Researchers and on the cross-cutting insights gained during the debates held at the EMTEL network meetings and the EMTEL Final Conference.¹

The dominant discourse on technological change claims that the relationship between (new) technologies and quality of life is straightforward. Technologies are invented to improve efficiency and the overall standard of living, and to make our lives easier, better and more enjoyable. Common sense tells us that new technologies will always promise a better world as it is difficult to imagine that they were intentionally invented to complicate our lives.

Nonetheless, policy makers are concerned with making sure that technologies are developed and diffused in ways that are indeed beneficial to individuals, companies, organisations and society as a whole. The European Union’s “Lisbon objectives” for instance, aim explicitly at building a competitive, socially cohesive and sustainable European society through – among other means – more and better technologies. The eEurope 2005 Action Plan (the Information Society roadmap towards the Lisbon objectives) shows similar social and economic concern, and aims to further the efforts of the last 10 years to boost ICT use across (an Enlarged) Europe.²

The EMTEL research projects reflect on these policy initiatives in the light of selective empirical insights into how ICTs are experienced by users and non-users, in everyday life. The reports offer snapshots of the contemporary use and non-use of ICTs in different settings such as migrant highly-skilled researchers in Norway and Germany (Trondheim Study), the so-called “Web Generation” in Belgium (Brussels Study) and Internet use in the local setting of an Irish coastal town (Dublin Study). Future technology visions of Ambient Intelligence in everyday life are also discussed (Sevilla Study). These studies offer a qualitative exploration of the ever evolving and, in some ways, contradictory relations people develop in every day life with the technologies they are confronted with.

In this report we have chosen to highlight some of the tensions and ambiguities found within and across the case studies, with a view to interpreting them in the more global context of ICT potential for improving quality of life. They help us to address the following topics and questions:

- How is the relationship between ICTs and quality of life perceived by users and non-users? Is this relationship straightforward or ambiguous? What hopes and fears emerge from peoples' testimonies of their use and non-use of ICTs?
- Are ICTs perceived as improving their living and working conditions, and thus, their quality of life?
- Consequently, are there specific aspects of these technologies which should be taken into account in societal policies like eEurope 2005 – or R&D policy, such as the European Framework Programme?

To address and contextualise these questions, the report starts by examining some aspects of the on-going debates on the quality of life agenda. It will show that views on the subject have progressively shifted, from being mainly economic (i.e. focusing on the entitlement to sufficient resources or fulfilment of basic needs) to being social policy based (i.e. focusing on capabilities).

Second, the report gives a short overview of what user-centred research is about, particularly how the concept of “domestication”, a notion much discussed and used by the EMTEL network, might help to overcome some of the limitations of market research. The third main section of the report outlines selected issues drawn from EMTEL's empirical evidence on ICT usage and non-usage in relation to quality of life. The conclusions discuss the implications of EMTEL research for the debate on how to ensure quality of life in the Information Society. It also addresses the scientific and political implications for future research in ICT social science and R&D.

One last remark - the EMTEL studies are all inductive and qualitative in nature. They do not consist of representative samples of users in Europe and therefore the findings cannot be generalised. Nonetheless, they offer strong indications that there is a need for new ways of looking at ICTs, and also more and systematic research along these lines.

Quality of life: Moving beyond the economic agenda

Do productivity and consumption lead to improved quality of life for all as claimed by a deterministic economic view on societal dynamics, or are there other ways of achieving this?

Welfare economics at the root of the European Information Society initiatives

Welfare economics argues that economic growth leads to increasing opportunities for consumption and hence increasing welfare. It is assumed that market mechanisms allocate resources efficiently, thus producing well-being with maximal effectiveness. The view on quality of life is that it depends on the relatively equitable distribution – through consumption and possibly public corrective measures – of a market's production. Economic welfare in turn relies strongly, if not exclusively, on the growth of production output. These outputs are considered to expand proportionally to the expansion of factors of production (labour and capital) and/or of productivity of these factors. In particular, increasing productivity would allow output per head to grow and would expand consumption possibilities, and thus potential welfare per head too. Finally, economic theories indicate that technological change - ICTs in this case - is an essential source of welfare growth as it can strongly impact on productivity. From an evaluative point of view, aggregated numbers of GDP per capita are expected to reflect the well-being in a country or a region, whatever the additional measurement and comparison issues this may raise from a methodological point of view.³

European Information Society initiatives have been largely inspired by such views. Technological change is seen as having a huge potential for wealth creation and resulting higher standards of living due to the strong impact ICTs are expected to have on productivity growth.⁴ As a result, since the Bangemann Report in 1994, which can be considered as the “founding” document of European Information Society policies, the accompanying technological changes have been expected to generate welfare through productivity gains in the economic domain and their resulting beneficial effects throughout society.⁵

The emergence of the European social agenda

The economic and productivity related approach described above, which uses aggregated numbers of GDP per capita as a proxy to well-being in a country or a region, has in the meantime been complemented by other approaches at European level. The recent consolidation of European social policy, initiated in the 1992 Treaty of Maastricht,⁶ is an important example, even if it has mainly developed on the basis of soft law.⁷ The breakthroughs of the Social

Action Programme 1998-2000, the EU adoption of a strategy for social protection and the establishment, more recently, of the Lisbon European Council objectives have provided the European Union with a new social policy agenda. This is based on the link made between Europe's economic strength and its social model. The guiding principle is to regard social policy as a productive factor, encompassing a broad set of issues such as employment, the knowledge-based economy, the social situation in Europe, enlargement and internationalisation.⁸ It also supports the idea of systematic monitoring, via Eurostat, of the social situation in Europe, focusing on numerous social areas including youth unemployment, income distribution, female employment, life expectancy, accidents at work, consumption patterns, housing characteristics, living conditions, etc.

These policy initiatives at European level illustrate how quality of life as a concept and as a policy target has evolved in European policies to encompass both economic and social concerns, echoing the critique of welfare economics,⁹ a critique which has been supportive to new policies aiming at the "fulfilment of basic needs". While Information Society policies are today still positioned as a subset of the Lisbon competitiveness agenda, in line with traditional welfare economics, they have also integrated the new social agenda targets. The eEurope Action Plan is based on the idea that the Information Society has untapped potential to improve the quality of life, to open up social opportunities, and to provide more convenient access to information and communication tools. In line with the "basic needs approach", it focuses strongly on the entitlement of access to infrastructures. This access focus of the first eEurope plan was also the result of the distance Europe lagged behind the rest of world at the time the plan was conceived. The updated eEurope plans therefore also encompass issues of education – beyond the mere penetration rates of PCs in schools - and those of health. It makes a plea in favour of eGovernment, as a means to more efficiency, and also more democracy and participation.

Quality of life, capabilities and the future of the European Information Society policies

Since 1990, the United Nations' human development reports have offered an alternative paradigm for assessing development and, ultimately, quality of life.¹⁰ This has been guided by Amartya Sen's capability approach,¹¹ in which the purpose of development is to improve human life by extending the range of things a person can be and do. This is clearly different from extending the range of things a person can possess (welfare economics and basic needs approach). Sen argues that policy, rather than concentrating on the distribution of income or

resources should enrich people's abilities (what one can do) and their opportunities (the alternatives one has to do something one way or another) in each given context.

This approach contrasts explicitly with neoliberal economics, which defines well-being as utility maximisation and neglects – from Sen's point of view - rights, freedoms and human agency. In Sen's approach, "the most critical of these wide-ranging choices are to live a long and healthy life, to be educated and to have access to resources needed for a decent standard of living. Additional choices include freedom, guaranteed human rights and personal self respect".¹² The UNDP uses these choices as indicators in its Human Development Indexes. "The concept of Human development (...) is about people being able to live in freedom and dignity, and being able to exercise choices to pursue a full and creative life. Development policies are therefore about removing restrictions. Illiteracy, ill health, and a lack of command over resources restrict choices, but so do many other conditions such as social and political oppression that restrict one's participation in the life of a community, or the exercise of autonomy in making decisions about one's own life".¹³

This implies that countries, regions, and social groups do not have to wait for economic prosperity to make progress in human development. As such, this grounds the role of public authorities in a broader framework of criteria than simply the observation of average GDP per capita.

Today's major challenge for Information Society policies, which initially aimed mainly at productivity gains (claiming their beneficial effects on the quality of life), is to take on board the shifts in concepts and targets of these quality of life debates. As noted, the new eEurope Action Plan has already gone beyond strict "access" issues. Education, health and political participation are now on the agenda. The approach developed by Amartya Sen and further implemented by the United Nations in 2001¹⁴ invites tomorrow's European Information Society policy to become much more "holistic" than it is at the moment, and at the same time much more differentiated to cope with the reality of an enlarged Europe.¹⁵

To move this debate to a higher level – i.e. IS policies going beyond providing access – deep insights are needed into what constitutes people's ability to use new ICT, what creative or non-creative use they make of it, and, in general, what the meaning of ICT for the user (and non-user) is. EMTEL research gives some answers here as it provides testimonies of people who make use (or not) of ICTs within the regularities and irregularities of their everyday lives.

In the next sections, insights from social and user studies of ICTs in general, and from a “domestication” perspective in particular, will be presented with a view to contributing to a better understanding of the complex interrelationship between ICT usage, capabilities and an improved quality of life.

Research on users and uses of technologies

From diffusionism to the social construction of technology

Many different, isolated and sometimes contradictory approaches to the study of use and acceptance of ICTs have been developed over the last few decades. Until the mid 1980s, diffusionism was the main perspective used in research on innovations from the point of view of the end user. The most prominent example of this perspective is E.M. Rogers’ “The Diffusion of Innovations”, first published in 1962 and now in its fourth revised edition.¹⁶

Diffusion is conceived as a rational “innovation-decision process” in several successive stages. An individual (or other decision-making unit) passes from (1) first knowledge of an innovation, (2) to forming an attitude to the innovations, (3) to a decision to adopt or reject, (4) to implementation of the new idea, and finally (5) to the confirmation of this decision. Identifying stages in the innovation-decision process makes it possible to describe differences among users in the take-up of innovations. This has resulted in Rogers’ famous distinction between *innovators*, *early adopters*, *early majority*, *late majority* and *laggards*, all showing different degrees of innovativeness in a particular period of time. On a macro level this temporal characterization of the diffusion process has enabled Rogers to describe the diffusion process in terms of the well-known S-curve for diffusion.¹⁷

Various constructivist approaches to the study of science and technology have criticised this understanding for, among other things, its linear and overtly rationalistic conception of the process of innovation.¹⁸ Constructivist approaches have rejected the narrow technological determinism that lies at the heart of such theories, where technology is perceived as developing independently of society, having a subsequent determining impact on societal change. Technologies are seen as social constructions whereby ‘seamless webs’ of social, economic and political actors and factors shape the development of technologies. This approach focused primarily on the development and design of sciences in the early 70s, and later, in the 90s, on the development and design of technologies. The ‘domestication approach’ which followed was

inspired not only by constructivist approaches to the studies of science and technology, but also by user/audience research in media studies and by the sociology and anthropology of everyday life. Domestication focuses on the processes of cultural integration of ICTs into everyday life – initially mainly into the household – and emphasises the need for qualitative and subjective approaches to the study of these processes. It gives the user within a specific social context (e.g. the household) an active role in the shaping of ICT innovation.

Domestication: an ethnographic insight into technology and everyday life

The concept of domestication refers to the capacity of individuals, families, households and other institutions to bring new technologies and services into their culture, to make them their own.¹⁹ This approach conceives acceptance and use as contextual phenomena, which should thus be studied within the context of everyday life, particularly in the micro-social context of the household or similar structures. In this approach, the users take part in the process of shaping ICTs through making meaning of/with them, and integrating them into their everyday lives, their social networks, their ideas about themselves, and their value-systems.

Domestication is not necessarily harmonious, linear or complete. Rather, it is perceived as a process borne of, and producing, conflict, where the outcomes are heterogeneous and sometimes irresolvable. It is also noted that needs and changes in the household, through ageing, break-up or children leaving the home have implications for the domestication process. It is presented as a struggle between the user and technology, where the user aims to tame, gain control, shape or ascribe meaning to the artefact. As Sorensen argues,²⁰ there is no technology without action; the premise being that users' actions matter, allowing a degree of “interpretative flexibility” when they attempt to integrate a new technology into the domestic routine. Artefacts then are ascribed with meaning and functionality, which are bound to the reproduction and/or transformation of relationships.

An ICT innovation is thus not only materially produced but also loaded with symbolic meaning by producers, designers, and marketers. Users interact with these meanings when they consider buying a new appliance or when they put it to (non-)use in their everyday lives. Domestication emphasises these meanings as they are constructed by users and non-users in specific contexts.

The four EMTEL studies referred to in the remainder of this report all apply, in their own way, the notion of domestication. They look at the integration of specific ICTs in everyday life. The following sections of this report are based on what these studies reveal on the key issues on

living and working in the Information Society in general, and on the relationship between quality of life and ICTs in particular.

ICT and Quality of Life: Insights from EMTEL research ²¹

As argued in the introduction, the dominant discourse surrounding technological change claims a relatively straightforward relationship between new technologies and quality of life. However, the EMTEL research results, which focus on the context of use and the particular, subjective realities of the users, suggest that the relationship between the claims of the dominant discourses of ICTs and the users' local interpretations and perceptions is not so straightforward. They highlight how people, in their daily routines and practices, actively engage with technologies and how this is a complex and often contradictory process. In order to enrich and deepen the debate on quality of life and the Information Society, three aspects – or rather 'tensions' – of this complex process will be discussed in more detail. These all deal with the less straightforward aspects of encounters between ICTs and everyday life.

Early adopters , radical innovations and everyday life normalities

EMTEL research indicates that there is a strong contrast between normative discourses about radical, innovative uses (and early adopters) of ICTs and the ways users (and non-users) think and behave in their everyday life. The discrepancies between ideas about how people ought (and are thought) to behave with ICTs in the Information Society and the ways the interviewees perceive or interpret both their own behaviour and those of other people are striking.

The Brussels study provides many accounts of the contrast between the discourse about “the web generation” and the way ICTs are perceived and used by youngsters. The discourse assumes primarily that young people today use ICTs extensively, innovatively and without problems. It also assumes that this will have long-term consequences for society overall, which are mostly interpreted as positive. Youngsters are meant to push technological and socio-cultural boundaries, rather than accepting limitations. ICTs are (supposed to be) used “everywhere” and “anytime”. A general notion of connectivity underlies this image. The web generation's relationship with ICTs is presented as not only problem-free and smooth, but also confident and playful. Boundaries between work and play are thought to be disappearing for them. In short, the web generation discourse as analysed in the Brussels study is based on the idea of a generational culture which defines itself via ICTs in a fairly conscious and “immersive” way.

The study suggests that this discourse contrasts with the subjective perceptions of the youngsters themselves and their ICT usage and non-usage. Generally speaking, the attitudes of young adolescents towards ICTs are positive and many of them use ICTs intensively. However, they also experience pressure from ICT discourses and from their peers (friends and also parents) to accept and use ICTs. They sometimes have the feeling that they have little or no choice other than to embrace ICTs. This pressure encourages general ICT take-up by youngsters, but it does not necessarily lead them to explore the full potential (or capabilities) of the new media. A similar observation of 'ideological pressure' to participate in society via ownership and use of ICTs is made in the Dublin study where adult Internet users are interviewed.

In the Brussels study, it is argued that there is a clear tension between what the web generation discourse prescribes (early adopters) and what goes on in practice (everyday life normalities). The youngsters interviewed do not see themselves as pushing boundaries, though this may be related to their specific age group (18-25). The Brussels research argues that younger teenagers might well be more playful and experimental with ICTs than the young adolescents interviewed in the study. This may explain why radical innovations like SMS, peer-to-peer computing and weblogs do take place: they all were "invented" by teenagers. It could also be that these uses are not perceived as innovative by the users themselves, even though they have taken established practices and industries by surprise (e.g. SMS, P2P and newsblogs all came as a surprise to the telecom, music and media industry).

Another facet of the tension between discourse and reality is raised in the Trondheim study on highly skilled transnational researchers and their use of ICTs. This user group can also be said to be made up of early adopters, as they are heavy users of ICT and are highly mobile. At the same time however, a specific form of resistance to ICTs is observed, both in relation to the mobile phone (and to computers at home, as will be shown later). Most of the interviewees have mobile phones but use them only under certain circumstances and in certain places. They always talk about the mobile phone in terms of a justification of their decision not to use it, or only to use it in particular ways. They do not always want to be available. They make excuses and feel it necessary to explain this in detail. When doing so, they actively engage with the dominant discourse of permanent availability (anywhere,, anytime) and relate their individual choices and behaviour to this. In contrast with the discourse, being available is seen as problematic, a phenomenon we will come back to in more detail later.

In the Dublin case study, another idealised type of ICT usage is challenged, i.e. “localised” public participation via Internet. The domestic Internet users of the study indicate that they rarely look at local web-based content as they feel that traditional modes of communication for participation in local public life are favourable. Information is disseminated via the print media and public meetings operate at a face-to-face level. Admittedly, some local organisations and campaigns have developed websites, but these are largely used for advertising purposes rather than as forums for interaction. Thus, it seems that local websites are used to supplement existing and traditional methods of communication rather than to, facilitate new forms of connectivity at a local level. In the cases where participants do use the Internet for communication about public issues, they tend to go beyond the immediate locale (national or global).

Last but not least, in its analysis of Ambient Intelligence (AmI) as a new and future vision of the Information Society, the Seville study makes clear that even in the vision building process of new technologies, contrasts emerge between idealised types of potential applications and everyday life normalities. It is claimed that the vision of AmI is driven by humanistic concerns, not technologically determined ones, and that the emphasis is on user-friendliness, user empowerment, and support for the informal and unstructured activities typical of much of our everyday lives. A particularly important type of everyday activity in the home however, i.e. housework, is scarcely – or never - considered in these claims. Housework is largely absent in visions and projects about the future of “everyday computing” while in reality, it is still one of the most repetitive and time-consuming tasks carried out in the home. It may not be the most ‘innovative’ function for Ambient Intelligence but it would probably be a highly valued one, in terms of quality of life.

Redefining the boundaries between work and home

ICTs are involved in the process of blurring boundaries between what used to be regarded as distinct spheres of life, for instance, public and private; work and home; and local and global. ICTs also enable us to bridge some of the limitations of time and space. Increasing flexibility between work and home (e.g. telework) for instance, is often regarded as contributing positively to changing the way people live and work.

It seems however, that the blurring of boundaries between work and home, enabled by ICTs is not perceived to be positive all the time. The Trondheim study points out, for instance, that communication media such as mobile phones and Internet-connected computers can facilitate

private communications but at the same time increase the feeling of availability for work. This makes it hard to resist working from home outside office hours, especially when workloads are heavy. Respondents in the Trondheim study were clearly looking for a work free zone in everyday life. The permanent availability of technologies however, was seen – even by these highly skilled front-runners of the Information Society – to contribute to stress rather than to relaxation. The Brussels study also found that some of those youngsters who use computers at work reject having a computer at home because of the work-related connotations of computing.

ICTs are thus perceived to be rather ambiguous. The extended flexibility enabled by ICTs has – maybe surprisingly – caused the need for places, such as the home, where people can switch-off, both literally and symbolically. The migrant researchers (Trondheim study) are exposed to increasing spatial and temporal flexibility, not only in terms of being knowledge workers but also because they work in a foreign country. The interviewees emphasise that it is in everyday life – the unspectacular domain of repetition and routine away from the work place – where people look for freedom and control. The intensification of availability that ICTs facilitate raises the question of non-use rather than use. The ambiguous nature of ICTs implies, for the capabilities approach, that ICTs may not only remove obstacles to quality of life, but also may create new ones.

In their everyday lives, people are already developing strategies to deal with these tensions. For example, teleworkers interviewed in the Dublin study, while making special arrangements to accommodate the potential of ICTs, are carefully negotiating spatial and temporal boundaries in order to segregate work from home.

Home as a sanctuary is also touched upon in the Sevilla study on Ambient Intelligence. Here the possibilities of the home as a relaxing and harmonious environment where people can rest, relax and escape from an over-intrusive AmI environment are raised. Although this notion of home as a sanctuary could hide the tensions, struggles and inequalities that occur in the lives of most families, the idea that home could become a place where one can say no to ubiquitous technologies is worth further consideration. To be more precise: certain aspects of private life might be shielded from AmI, whilst others might not. It seems defensible for instance, that for “care”, people would accept a large degree of AmI, whilst for “relaxing”, they might not.

The need for a “switch-off button” rather than “always-on” technologies is rightly put forward by the Ambient Intelligence community as a legitimate one. Ambient Intelligence “a la carte” seems therefore a possible way forward.

Intrusiveness and the struggle for control

The ability of technologies to demand attention just by being there creates disturbances - for example when they invade social settings, or anticipate action by making you pick up the phone, or “ping” noisily when a new e-mail arrives. Increasingly policy tries to regulate these problems, for instance by banning mobile phones from restaurants, introducing silent compartments on trains, and banning mini cameras (on phones) from swimming pools, etc. This clearly indicates that quality of life is perceived to be at stake here.

In the Trondheim study of migrant knowledge workers, the intrusive character of ICTs is much discussed. Ownership of ICTs enabling constant availability should not mean, according to the interviewees, that they are automatically used that way. In fact, users experience being constantly available as irritating. People make all kinds of rules about when and in what social settings a mobile phone can be used or not. They are clearly trying to create social spaces where *not* being available is valued. The ubiquitous character of ICTs challenges some of the basic notions of having control over one’s personal life. The down side of being connected consists of a feeling of being intruded on and thus creates tensions. Users in the case studies sometimes struggle with the management of both connectivity and intrusiveness.

The Brussels study on the Web Generation showed a clear tendency towards regarding the mobile telephone as both an interruption in social relations and a facilitator of them. Many of the young people did not feel comfortable with the use of the mobile “everywhere” and “anytime”, but at the same time, they saw the ubiquitous potential of ICTs as positive, providing they made the right choices (e.g. knew when to call someone). There was a general awareness of availability as problematic, and therefore, it was consciously dealt with, not as a problem but as a choice to be made.

Struggling for control is thus related to issues of how to communicate best with others via ICTs. But it also is related to controlling the technologies as such. The Sevilla study shows that the idea that computing becomes “invisible” as it is embedded in the environment and in everyday objects, lies at the core of Ambient Intelligence. This is firstly a physical issue, but, as the

EMTEL studies underline, it could also become a social practice, i.e. a seamless part of normal life.

At first sight, there is a striking parallel with the domestication approach. Ultimately, ICTs are domesticated when they are “taken for granted”, when they are no longer perceived as technologies, as machines, but almost as a natural extension of the self. By claiming to move technologies to the background and people to the foreground, Ambient Intelligence promises the disappearance of the technical artefact and its underlying technologies. As a result, it can be seen as the ultimate stage of domestication. However, domestication also highlights that the process of acceptance and use of ICTs is not necessarily harmonious, linear or complete. Rather it is presented as a struggle between the user and technology, where the user tries to tame, gain control, shape or ascribes meaning to the technological artefact. This is not resistance to a specific technology but rather an active acceptance process.

The material invisibility of technological artefacts –through miniaturisation and/or embedding – may well harm rather than facilitate their acceptance, precisely because they are invisible, and thus uncontrollable. Making technologies disappear, instead of reducing tension, could, on the contrary, make it insoluble. Far from achieving the goals expected, a technological environment perceived as less controllable could generate stress and inefficiency.

Sen’s theory of capabilities: a supportive framework for tomorrow’s Information Society policies

EMTEL research and the “domestication” approach, which leans strongly on qualitative observations of (non)users, offers insights into how ICTs are experienced in everyday life. These studies help us to gain a deeper understanding of the ever evolving and, in some ways, contradictory relations people develop with ICTs. In this report, three tensions were taken from the case studies in order to discuss the more global framework of ICT potential for improving quality of life.

The first tension relates to technology uses and can be seen in the contrast between the dominant discourses developed on the use of ICTs and the effective uses and user’s perceptions of these. There is an essential distance between what the discourse may seem to prescribe (early adopter or idealised type users: the web generation, the active citizen, the enhanced home) and what this user group thinks and does in practice, as a result of his/her personal domestication of

technology. In the same way, citizens' social participation can take different routes to those expected and possibly hoped for. As such, ICTs can improve people's access to information, and their communication, participation and even action in everyday life. However, the options they offer differ from the ones expected or announced. As these unexpected behaviours develop and grow, they come into conflict with the interests and objectives of other actors: industry, policy, family, etc. The options for the way users can behave are eroded by the normative strength of the discourses, but even more by the interests directing these discourses. According to Sen's theory of capabilities, Information Society policies should actively support the development of such alternative capabilities, of optional behaviours – and of the freedoms that accompany them.

A second tension relates to the ambivalent role ICT take in the redefinition of basic boundaries such as those of home and work. The extended flexibility of work, and more generally of space, enabled by ICTs is evident. However, it seems that a switch-off button is an unavoidable necessity, or at least a “fading option”, both literally and symbolically. The intensification of personal availability paradoxically raises the question of a right to non-use, or at least of temporary or regulated disconnection. Here again, the unexpectedly slow development of distance work might well demonstrate how far ICTs question traditional work relations and organisational models. If their transformation offers a renewed space of labour adapted to our contemporary needs, Information Society policies should explore and support these new forms of socially productive organisation, while keeping capability criteria as an essential assessment of progress, rather than criteria for the assessment of productivity.

The third tension relates to aspects of control. Contemporary technological trends contain the idea that computing will become “invisible” as it is embedded in the environment and in everyday objects, hence notions of “the disappearing computer”. Technologies may thus be taken for granted and become a natural part of everyday life. However, domestication also highlights the fact that the process of acceptance and use of ICTs is not necessarily harmonious, linear or complete. Rather it is presented as a struggle between the user and technology, where the user tries, amongst others, to gain control over the technological artefact.

“Freedoms” are basic evaluative criteria in Sen's theories. The struggle for control might make the optimal development of capabilities more difficult. In the case of ICTs, the domestication approach identifies quite easily the fundamental confusion between the physical (and passive) invisibility of embedded technologies, and the mental invisibility that may result from a long

and necessary domestication process. Such insight indicates that Information Society policies which relate to technological R&D should also be concerned with the social consequences of miniaturisation and embedding.

Domestication constitutes the basic framework for the four EMTEL case studies discussed here. This frame of reference has provided us with a suitable analytical tool for research into everyday life that enhances important qualitative aspects of technological development. The strength of a qualitative approach to the study of these topics is that it highlights the variations, connections and coherence that otherwise might easily be overlooked. However, as explained in the introduction, EMTEL studies are not representative of all users (and non-users) in Europe and therefore generalisations from the findings are difficult. Nevertheless they offer strong indications that new ways of looking at ICTs, and also more and systematic research along these new lines, are needed.

Notes

¹ All EMTEL Deliverables are mentioned at the end of this report. The thematic 'key deliverables' used in this report are referred to as for instance, the Amsterdam study, the Dublin study, etc. Documents from the EMTEL Final Conference, London, 23-26 April 2003 are available at www.EMTELconference.org.

² Lisbon European Council: Presidency Conclusions, Press Release: Lisbon (24/3/2000) Nr: 100/1/00. www.europa.eu.int

Brussels, 28.5.2002; COM (2002) 263 final, eEurope 2005: An information society for all. An Action Plan to be presented in view of the Sevilla European Council, 21/22 June 2002.

³ Such as those of Parity Purchasing Power, appreciation of the impacts of the grey economy, currency exchange rates, etc.

⁴ European Commission, 1996. Living and Working in the Information Society: People first. COM(96)389.

⁵ The term 'information society' has been popular in certain academic circles since the seventies. In the EU it has slipped into official parlance since the early 90's.

See Burgelman, J.-C. (1997). Issues and assumptions in communications policy and research in Western Europe: a critical analysis. pp. 123-153 in P. Schlesinger, R. Silverstone & J. Corner (eds.) International Media Research. A critical Survey. London & New York: Routledge.

⁶ The Maastricht Treaty raises the need for social and cultural corrective measures, for stronger social cohesion, even though still to a large extent based on soft law. The future European Constitution will probably even be more explicit on this.

⁷ "Soft Law" refers to not legally binding provisions that lead to changes in EU member states: communications, recommendations, opinions, memorandums, communiqués, codes of conduct, internal rules, etc. See on the subject: Caroline de la Porte, 2000. The novelty of the place of social protection in the European agenda through "soft law", in: Observatoire Social Européen, 2000.

⁸ Commission Communication from 28.6.2000, Social Policy Agenda. COM(2000)379 Final. European Commission, Brussels.

⁹ The major critical shift is due to Rawl's Theory of Justice (1971), conceptualising the issues of "basic needs". In this view, there is a given set of primary goods which should be equally distributed so as to ensure the free pursuit of happiness. IS policies, conceived as being primarily concerned with access issues, echo this view. Also, Rawl's view, even though radically transformed in the Capabilities theory, has partly inspired Amartya Sen's work.

¹⁰ This element, as most of this section is extracted from an essential paper of Nicholas Garnham, "Amartya Sen's "Capabilities" approach", published in Communication, Citizenship and Social Policy, Editor: Calabrese Andrew and Burgelman Jean-Claude. Rowman and Littlefield, 1999. At that moment already, N. Garnham was raising the question "Entitlement to what?" when discussing the Information Society and the Welfare State.

¹¹ A. Sen is the 1998 Nobel Prize in Economic Sciences, awarded for his contribution to a theory of development that goes beyond the above described "traditional" economic views. Sen has provided the background papers to the UNDP report in 1990, 1994, 1995, 1996, 1997, 1998 and 2000.

¹² Human Development Report, 1990, quoted in Sakiko Fukuda-Parr, 2003, p.307.

¹³ Sakiko Fukuda-Parr, 2003. The human Development Paradigm: Operationalizing Sen's ideas on capabilities. *Feminist Economics* 9 (2-3), 2003, p.308. Routledge.

¹⁴ Human Development Report 2001, Making new technologies work for human development, United Nations Development Programme (UNDP), New York Oxford, Oxford University Press, 2001. Accessible at: <http://hdr.undp.org/reports/global/2001/en/>. See also Gacs J., 2001. Catching up, Accession and Human Development. First draft. IIASA Workshop paper. Budapest.

¹⁵ An enlarged Europe will indeed have very large discrepancies in "access" - and hence in strategies to overcome them. See JC Burgelman and M. Bogdanowicz (2003). Information Society Strategies for the Candidate Countries: Lessons from the EU-15, in JC Burgelman, M. Bogdanowicz and B.Clemmets (eds.) The Information Society and EU Enlargement, IPTS Report - Special issue, vol 77, nr. 3.

¹⁶ Rogers, E. M. (1995) *Diffusion of innovations*. New York: The Free Press (Fourth Edition).

¹⁷ Rogers, Ibid: 161; 257-258. The S-curve visualises that in the beginning of an innovation process only a limited number of people talk about this innovation and in fact buy the new product. This gives the innovation process a slow start. As a growing number of people accept the innovation, people will talk

about it more and this will lead to a higher degree of adoption in a faster speed. Later, the diffusion process will slow down again when confronted with a reluctant adopters and even non-adopters.

¹⁸ See for instance: Akrich, M. (1990) 'De la sociologie des techniques à une sociologie des usages. L'impossible intégration du magnétoscope dans les réseaux câblés de première génération', *Techniques et Culture*, 16, 83-110; Berg, A-J. (1997) 'Karoline and the Cyborgs. The naturalisation of a technical object', in V. Frissen (ed.), *Gender, ICTs and everyday life. Mutual shaping processes*, Proceedings from COST A4 – Granite Workshop, Amsterdam, 8-11 February 1996, Brussels: European Commission (Cost A4), 7-35; Lie, M. & Sørensen, K. (eds.)(1994), *Making technology our own. Domesticating technology into everyday life*, Oslo/Stockholm/Copenhagen/Oxford/Boston: Scandinavian University Press; Mansell, R. & Silverstone, R. (eds.)(1996), *Communication by design. The politics of information and communication technologies*, Oxford: Oxford University Press; Silverstone, R. & Hirsch, E. (eds.)(1992), *Consuming technologies: Media and information in domestic spaces*, London: Routledge.

¹⁹ For a broader account of domestication issues, see also the EMTEL Key Deliverables of M. Hartman, Katie Ward and Thomas Berker.

²⁰ In Lie & Sørensen, Ibid: 4.

²¹ The section is based on the outputs produced by the EMTEL research work of the last three years, in particular that of Maren Hartman (MH), Kat Ward (KW), Yves Punie (YP) and Thomas (TB). See infra for the list of their reports.

Appendix 1: EMTEL Deliverables

Final Deliverables

- Brants, K. and Frissen, V. (2003) 'Inclusion and Exclusion in the Information Society', University of Amsterdam (ASCoR) and TNO Strategy, Technology and Policy.
- Pichault, F. and Durieux, D. (2003) 'The Information Society in Europe: Methods and Methodologies', LENTIC, University of Liege and ASCoR, University of Amsterdam.
- Preston, P. (2003) 'ICTs in Everyday Life: Public Policy Implications for Europe's Way to the Information Society'.
- Punie, Y., Bogdanowicz, M., Berg, Anne-Jorunn., Pauwels C. and Burgelman, J-C. 'Living and Working in the Information Society: Quality of Life in a digital world', IPTS-JRC, European Commission, Sevilla; Centre for Technology & Society, Norwegian University of Science and Technology, Trondheim; HARTMANN, 2003, Free University of Brussels.
- Silverstone, R. (2003) 'Media and Technology in the Everyday Life of European Societies', [Media@lse](#), London School of Economics and Political Science.

Key Deliverables

- Berker, T. (2003) 'Boundaries in a space of flows: the case of migrant researchers' use of ICTs', NTNU, University of Trondheim.
- Cammaerts, B. and Van Audenhove, L. (2003) 'ICT usage among transnational social movements in the networked society', ASCoR/TNO, University of Amsterdam.
- Durieux, D. (2003) 'ICT and social inclusion in the everyday life of less abled people', LENTIC, University of Liege and ASCoR, University of Amsterdam.
- Georgiou, M. (2003) 'Mapping diasporic media across the EU; addressing cultural exclusion', [Media@lse](#), London School of Economics and Political Science.
- Hartmann, M. (2003) 'The Web Generation: the (de)construction of users, morals and consumption', SMIT-VUB, Free University of Brussels.
- Punie, Y. (2003) 'A social and technological view of Ambient Intelligence in everyday life', IPTS (JCR-EC), Seville.
- Ward, K. (2003) 'An ethnographic study of internet consumption in Ireland: between domesticity and public participation', COMTEC, Dublin City University.