

The European Information Society: A wake-up call*

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In many ways the European plans to build an Information Society (IS) emerged as a reaction to Japanese and American initiatives (Edelstein, Bowes & Harsel, 1978). As in many other previous technological projects, European policies on information and communication technologies (ICT) were lagging behind the policies of its main global competitors.

This situation has changed slightly since the beginning of the eighties, when it became clear that information and communication would be one of the main technological factors and markets for the future. From then onwards Europe has spend a growing amount of its R&D on ICTs.

This went hand in hand with a radical change in policy orientation. Starting from the Green Paper on Television Policy (Television without Frontiers) in 1984, the area of communications became gradually and more or less totally liberalized. From 1998 onwards, the whole ICT field became deregulated.

Though, in the eighties, the term *information society* as such wasn't used in the R&D and policy discourse of the EU, the idea underlying it was nevertheless captured in most R&D programs in terms of 'wired society', 'broad band networks' and so on. Thus the EU didn't start from scratch in this field. On the contrary, a very considerable research effort was made. Nevertheless, in terms of user acceptance, these first generations of large-scale R&D projects in integrated communications were not very successful.

This might explain why, when the idea of an 'information highway' was officially 'launched' by the Clinton-Gore administration, Europe almost immediately integrated it into its own discourse. First, under the label of trans-European networks, in the so-called Delors White Paper (1993), but much more prominently

in the Bangemann report (1994) with an unconditional belief in the market as the driving force.

What resulted is the EU way to build the information society: pushing politically the wiring of Europe and the building of its highways, but leaving it up to the private sector to implement. Europe clearly wanted no lagging behind this time and, at the same time though not explicitly, got a brand new 'grand societal project' for its official policy. The information society indeed became a discourse in which it was possible to integrate many of the at first sight disparate European ambitions: *from competition policy over competitiveness to maintaining cultural diversity and subsidiarity*.

Two waves of IS-rhetoric ... and several contradictory discourses

The first initiative of the European Commission in its 'information society planning' of the nineties was the white paper 'Growth, Competitiveness and Employment' of 1993. The Commission under the chairmanship of the former French Socialist Minister of Finance, Jacques Delors, prepared this paper. It starts from a Social-Democratic concern for job creation and equal opportunity combined with a focus on Europe's competitiveness in an increasingly internationalizing world economy. This rather *neo-Keynesian* white paper was followed by the much more *neo-liberal* Bangemann report in 1994 on the basis of an initiative by the Council. This report, chaired by the former German FDP (liberal) Minister Martin Bangemann, focuses more on the issues of liberalization of telecommunications and the primacy of the private sector in the development of an information society.

Therefore, the information society policies of the European Union in the nineties can be presented as two waves, one in the first part of the decade with an emphasis on *liberalization* of telecommunications and information technology development, and the other in the second half of the 1990s with more focus on *social aspects* of information society developments. This understanding is, to a large extent, well founded especially if the first wave is seen as being represented by the Bangemann report and the 'Action Plan' of 1994. The development in the EU information society policy has thus been characterized by an *oscillation between broader social concerns and a more technology and market-oriented focus*. However, by doing so, it probably portrays the development in too rosy colors as a continuous development without the differences of opinion or emphases that have existed.

In 1995, for instance, a high-level expert group (HLEG) and an *Information Society Forum* were established to analyze “the social aspects of the information society” as the HLEG poses it in its final policy report ‘Building the European Information Society for us all’ (Soete, 1997). As a justification for this focus, HLEG wrote: “Until that time, the debate on the emerging information society had been dominated by issues relating to the technological and infrastructure challenges and the regulatory economic environment” (CEC, 1997a). There was, therefore, a perceived need for re-focusing on the social dimensions of the ‘European model’, in line with the white paper ‘Growth, Competitiveness and Employment’, as stated in the HLEG-report.

In yet another document, ‘The Social and Labor Market Dimension of the Information Society – People First – the Next Steps’ (CEC, 1997b), the Commission suggests that information society policies should have as *basic aims* to “improve access to information, enhance democracy and social justice, promote employability and lifelong learning, strengthen the capacity of the EU economy to achieve high and sustainable growth and employment, achieve and enhance equal opportunity between men and women, promote inclusion and support people with special needs and those lacking opportunities to improve their position, and improve quality and efficiency of public administration”. In other words, the Information Society will solve all problems of humankind.

Often, the recommendations are less ambitious and comprehensive. Quite a number of them give priority to social and labor market dimensions (see, for instance, CEC, 2002a+b; Johnston, 2000; or Johnston’s contribution to this volume), but also other issues such as political integration, EU-citizenship and cultural diversity feature prominently. In other contexts, other issues have been given priority. Especially, educational policies and lifelong learning and the combination of information technology-related policies with other policy areas have come to the fore in the last couple of years.

One of the reasons for the *change of priority* in favor of social concerns is that the liberalization of telecommunications has developed in a satisfactory way seen from the point of view of the Commission. However, the basic aims listed still remain an expression of a development in the EU information society policy.

Questions, questions, questions

Though it remains to be seen whether a mixture of Marshall Plan type of ‘grand works’ (*the Delors imprint*) with an unconditional belief in the market as the driving force (*the Bangemann influence*) has a feasible future, the information society has become a discourse in which it is possible to integrate many of the at first sight

disparate European ambitions. Or, as argued by Garnham (1997): the claims made for telecommunications and IT, as catalyst for economic development should be seen as good old political rhetoric. "It meets the needs of politicians because it promises a technological fix to deep seated social and economic problems, but as a 'new' initiative it distracts attention away from the failure of previous similar initiatives to solve these problems" (Garnham, 1997: 327).

Furthermore, the policy of an IS has to be checked against its underlying assumptions. Starting from the assumption that information and communication technologies undoubtedly possess the potential to contribute to socio-cultural change, it can be questioned whether this potential will be converted into advantages for everyone under the given scenario's the EU has planned. As large-scale application of information and communication technology increases, new problems will arise which 'the market' as such will not be able to resolve. More and better *regulatory mechanisms* will have to be developed to deal with these. If it should appear that the means proposed by the European Commission representatives are inadequate to arrive at the intended result, then the current strategy will have to be amended, or, if necessary, an alternative strategy will have to be proposed. In other words, is it enough to state, as the fifth framework (1999–2002) for R&D of the EU did, that it has to be a "user friendly information society in the benefit for all" to make it happen?

Sophia Kaitatzi-Whitlock (2000) notices that so far the questions that dominated policy discussions about the 'information society' deal firstly about the 'astonishing' quantities of films, shows, data etc. that can be consumed online and on the spot, and secondly, about the variety, the level and the speed of services that can be performed from home. Both sets of issues stress the consuming function. Such an approach obscures another set of questions that have to be addressed but remain default. What agency enhancing potential is actually offered to the citizen by the information society? How far does the famous interactivity element reach? What skills, and job-creating capabilities are conferred by information technology sold on the market? What new outlooks, options are provided to individual members of society? What familiarization processes have been initiated? These issues need to be focused closely and systematically. Unless, these questions find viable solutions, citizens and underfunded consumers will not create demand for supplied information networks, contents and tools.

In general, the European Commission realizes that it still has a long way to go. Therefore, top aide Maria Rodrigues, the chief organizer of the EU's first-ever IT summit which took place in March 2000 during Portugal's presidency of the Union, readily admitted that "we have to recognize that Europe is late compared with the

US regarding the transition to an innovation and knowledge society. We must speed up this transition not just because we are late but also so that we can find our own way -- a European model" (in Jones, 1999: 30). Since this Lisbon summit official texts of the European Commission teem with new terms coined with reference to the Information Society, such as 'New Information and Communication Technologies (NICTs)', 'on-line world', 'knowledge and innovation economy', 'e-Europe', etc. Specific aims include: adopting a legal framework for e-commerce; fully liberalized telecommunications markets by 2002; cutting the cost of Internet use; all schools to have Internet access in 2001 and all teachers to be skilled in Internet use in 2002; Internet access to basic public services by 2003; and an e-Europe action plan specifying targets for interconnected low-cost, high-speed Internet and telecommunication networks (see CEC, 2001, 2002c; or Mather, 2000).

Is the European IS-policy sustainable?

Relating to telecommunications and with the benefit of hindsight, the question can be raised whether information society policies have not just functioned as the sugar around a policy of telecommunication liberalization. Telecommunication liberalization was the main issue in the Bangemann report of 1993 and the 'Action Plan' of 1994 and is still the *most marked result* of the information society initiatives taken from the beginning of the 1990s.

However, such an understanding would be a misconception of the general outline of the EU information society policy. Telecommunication liberalization is not an alien element in this policy but an important integral part. Although there are disagreements on specific policy elements and directions, information society policies are answers to technological and international economic developments and general policy trends with a clear liberal taste, which is also why there is an overall consensus around EU information society policies even though they fluctuate and have different emphases depending on the people involved and the phases of development.

Regarding the field of telecommunications and broadcasting a distinction between liberal economic (in favor of deregulation) and cultural policies (mostly in favor of regulation) respectively is visible in Europe.

Early analyses of EU public policy show that the EU was not anticipating an overall policy on the convergence of these formerly distinct services (see Burgelman & Pauwels, 1991, as well as their contribution in this volume, and Venturelli, 1998). In *telecommunications development* the emphasis is on liberalization and deregulation, providing private corporations with a maximum of freedom to invest on the telecommunication networks.

Public policy in the *broadcasting field* is guided by another logic. In the media sector political concerns to safeguard a public sphere of pluralism and national sovereignty leads to the ambition to offer a diverse media system, containing public as well as private media (Wang, Servaes & Goonasekera, 2000; Servaes & Heinsman, 1991).

As the two historically, separately evolved sectors of telecommunications and broadcasting converge, the different policy consequences of the economic versus the cultural, and local versus international interests have to be taken into account. Research indicates, however, that the national, and especially the European policies regarding telecommunication services in general and broadcasting in particular are based on economic instead of cultural considerations. This trend has even increased after 1992 (Weymouth & Lamizet, 1996; Natalicchi, 2001).

Also the public service broadcasting structure and philosophy have undergone major changes throughout the last decades. These changes, initiated by internal as well as external factors, have affected the organizational and finance structures, and the programming of public service broadcasting (Wolton, 1990).

Therefore, it is questionable whether the European policies will be in the advantage of the so-called smaller countries in the EU, like for instance Belgium or the Netherlands (Servaes, 1993), on the one hand, and whether these policies will be able to secure a free and balanced flow of information, ideas, opinions and cultural activities within the EU on the other hand. In other words, it is no longer sufficient to concentrate on a distinct sector from only a technological or an economic perspective; a multi-dimensional analysis of the different policy options and their respective consequences is necessary.

Therefore, it could be argued that the EU strategy is *not sustainable* in the medium and long term. The reason for this is that policymakers and market parties have thoroughly neglected the principle of balance between productive and consumptive functions. This is caused by the fact that the Commission and the politically accountable EU policymakers and institutions have assigned the transition to the digitized information economy to market forces and logics alone (see also Preston's analysis in this book). Similarly this is the reason why the EU failed to develop a longer-term vision of the future global networks.

The convergence issue

The *convergence between telecommunications and broadcasting* occurs at three levels: at the levels of networks (infrastructure), service provision, and corporate organization (Wang, Servaes & Goonasekera, 2000).

In Europe policy decisions or policy perspectives are *mainly technology and/or commercially driven*. A lot of attention focuses on the research concerning (and the

implementation of) hardware. A lot of money is spent for the development of network infrastructure, broadcasting facilities etc. (Foley, 2000, Heinderyckx, 1998; Salak, 2000).

Second, regarding media ownership, we always seem to meet *the same players* in the different sectors on different global, regional and national levels. These are telecommunication operators, major publishing firms and media moguls. In most of the countries we observe that one or two of these actors (or a merger of them) control the telecommunication sector, major parts of the broadcasting sector and sometimes an important part of the print media (Doyle, 2002, Grimes, 2000).

Third, because of these concentration tendencies, national governments are afraid of *broadcasting monopolies*. Their legal reaction is the promulgation of anti-trust and anti-concentration laws. Examples of this legislation are the prohibition of controlling more than two national television networks and the restriction of market share percentage in the media landscape.

Last, the emphasis in public policy making is on hardware. Software/content development is heavily neglected.

Underlying assumptions

At least *five assumptions or hypotheses* can be derived from a review of the literature (see, e.g., a number of special issues: Burgelman & Servaes, 1996; Servaes, 1991, 1997; Servaes & Burgelman, 2000; Servaes, Burgelman & Goonasekera, 1997; Servaes & Wang, 1997).

The first one is that the visions are so alike, even if countries are different in many ways. Today, the visions in the different countries of the EU are very much in sync. There seems to have been a harmonization going on which has taken some time to initiate.

The second assumption is that everybody agrees on the visions and policy directions even though there are *different interests in society* -- which especially should come out in 'revolutionary' transformations. The establishment of an information society is often described as a revolutionary development, likened with the transition from an agricultural society to an industrial society. However, the industrial revolution surely resulted in fierce clashes between groups, classes, ideologies, etc. This does not seem to be the case with the 'information revolution'. At a slightly less dramatic level, it can be noticed that in some countries, there are *center-left* governments and in others *center-right* governments. Still, the plans are very much the same, even when countries shift political orientation of their governments. This becomes obvious from the analysis on the Nordic countries by Henten and colleagues (1996, 1999, 2000). To an 'outsider' the Nordic countries may seem similar, there are many differences in economic structure which also

applies to the ICT-producing industries. Henten and colleagues showed that the information society thinking of different European countries differed to a noticeable extent. The reason, that could be established, dealt with the differences in productive structures of the countries and the differences in points of departure and focus.

The latter conclusion is also supported by the analysis of the Greek case in analyses by Tonchev (2000) or by Sarikakis and Terzis (2000). Greece is a EU member State but at the same time is part of the Periphery standing in between the rich industrialized North and the poor developing South. Sarikakis and Terzis argue that, despite the citizens' needs and wishes, the promotion of the European Information Society in Greece is characterized by disproportionality. Another kind of capital difference between groups with different socio-economic status is emerging. The 'Knowledge-Gap' phenomenon becomes evident in that a high percentage of the population is excluded as users of the new media, due to reasons related to their educational and financial status. Additionally, a new phenomenon of "pleonastic exclusion" is taking place, as a result of the enormous numbers of channels of communication, which forces audiences to a continuous selection-exclusion of information sources.

A third and related assumption is the widespread support for the same visions in a period where the 'great narratives' are said to be vanishing. Information society visions have clearly become such a *new narrative*.

A fourth and, once again, connected assumption is that there is so much information society planning going on in a time when state planning is considered to be obsolete because of the policies of liberalization and the flexible circumstances that an information society is supposed to require.

A fifth assumption is based on the strong move to create a '*European culture*' through communications, particularly TV broadcasting. This is seen in some of the EU-directives, such as the emphasis on 51 percent of European material in television programming, etc. In many regions of Europe the most important development in the communications industry has not been the further dominance of global media, but the emerging of *cultural-linguistic television markets*. Triggered by policy deregulation and the rediscovery of autonomy by communities within a state, – e.g., the Welsh and Gaelics in the UK, and the Catalans and Basques in Spain – local and regional programmes have become increasingly popular. Many of the '*proximity television*' programmes are part of a public system. In the long run, market forces are expected to play a decisive role in their further development. But as it is only in those 'nations without state' that proximity television has enjoyed the most powerful support, whether the market will work for, or against, the further development of proximity television will depend upon the

strength of the cultural and linguistic factors (Collins, 2002; De Moragas Spa & Lopez, 2000).

Divergent policies

Though a user-driven (and consequently more content oriented) and user-specific policy framework may be preferred, a more corporate driven economic rationale seems to become the norm. Both policy perspectives start from quite opposite assumptions, as shown in the following scheme (further developed in Burgelman & Verhoest, 1996):

Current corporate-driven policy

- Agitated market/uncertain revenues
- Competition
- Short term
- Technology push/technology specific
- The medium is the message

Preferred user-driven policy

- 'Controlled' market/'guaranteed'
- 'New deal' type of policy
- Long-term objectives
- User-driven solutions
- Content oriented

Analyzing the 'digital divide'

Apart from contradictory policies and questionable assumptions, also the problem of the measurement of the Information Society appears to be crucial for the organization of the scientific debate, for the industrial development and for the implementation of public policies.

The results of the Commission Surveys "Measuring Information Society" in 1995 (pilot), in 1997 (Eurobarometer 47), in 1999 (Eurobarometer 51) and in 2000 (Eurobarometer 53) present a timely information resource for all those scholars who still today, when the Internet seems to have become 'free and ubiquitous', think that the Information Society *must* remain a problematic field of scientific research and an overriding public policy for Europe.

The results of the surveys are striking. It becomes very clear that the rhetoric scenario, which depicted a uniform, regional transition towards "a society founded on electronics", was radically contradicted by the data that emerged from the surveys. [The general findings from these surveys are estimations, the accuracy of which, everything being equal, rests upon the sample size and upon the observed percentage. Though mostly confirmed by other sources, at least in the ranking of

the countries, the actual figures are difficult to compare by lack of consistency in question wording].

For extensive interpretations and discussions of these surveys, see Ricci (1997, 1998, 2000), Sarikakis & Terzis (2000), and Servaes & Heinderyckx (2002). See also Heinderyckx' contribution to this volume.

2 + 1 = 3 technology clusters

By reviewing descriptively the results of the 1995–1997– and 1999 surveys one notes that different technologies are used with various intensity across the European Union. Some countries are more oriented towards the television, others to the computer technology cluster:

Television	Computer
Video recorder	Personal Computer
Satellite dish	CD-ROM
Pay television decoder	Modem
Teletext	Internet or Minitel

The MIS 2000 survey confirmed these findings. The *very nature of a technological cluster* and the position, the functional area it intends to fill, is important. Therefore some additional questions and hypotheses were added to the research design, and as a result a third 'wireless' or 'mobile' cluster came into the picture: Consequently, an additional distinction could be made between the two already identified clusters and a new emerging '*wireless*' cluster.

Wireless

Mobile phone
UMTS
Broadband
WAP or i-Mode

Of all the technologies surveyed in 1999, the *video recorder* is the most mature. It has reached the flat part of its diffusion curve so that it is gradually being used by similar proportions of people in most countries and demographic groups. Only Greece and Portugal show significantly lower penetration rates.

Satellite dish, by contrast with the VCR, is a much younger technology. The range of penetration levels (between 2% in Greece and 52% in Austria) is the highest of all technologies surveyed. Various factors attached to each country explain most of the discrepancies. For example, Belgium and the Netherlands are very heavily cabled (more than 90%), so that there is only a narrow market for satellite dishes. High penetrations in Germany and Austria are best explained by the wide choice of German speaking channels readily available by satellite. Other sources confirm Austria as the European country where satellite dishes are most implemented.

The varying proportions of people resorting to *pay television* are to be considered in connection with the media landscape so particular to each country. In Sweden, the high rates are due to the success of a few stations (Filmnet, TV1000, Canal+). In the UK, success is the result of a long established tradition of pay television (Sky is the best example). France offers a wide choice of pay channels, and fifteen years of success for Canal+ account for most of the high proportion of users. France and Spain also have a head start with digital packages, which fall into this category. The development of digital packages and of terrestrial digital broadcasting will considerably modify the choice of pay television made available throughout Europe, so that this variable is likely to move significantly in the near future.

The *teletext* technology is widely available on most television sets manufactured in the past ten years. Only old or low-end receivers are deprived of that feature. However, the data indicate that a number of people are either unaware that their

television set is equipped, or are unable or not willing to use teletext. The skills required to operate teletext properly are indeed quite different from those necessary to just operate a TV set.

The use of a *personal computer* is no longer marginal. A little over a third of all Europeans say they use a computer. Scandinavia and the Netherlands show significantly higher penetration figures. Do bear in mind that the question asked in this survey was about *use*, not ownership, so that these differences cover the penetration of computers in the workplace, at school, at the university as well as at home.

The use of *CD-ROM* shows slightly more contrast among countries ranging from 53% in Sweden to 6% in Greece. If we assume that computers equipped with CD-ROM readers are either recent or high end machines only, combining PC and CD-ROM use figures may be interpreted as an indication of the average age or quality of the computers used in different countries. However, one can assume that many people do use a personal computer and not a CD-ROM, even if there is one, be it by lack of skill or absence of need or even interest.

The *modem* is yet another additional feature requiring extra skills and cost (including running communication costs). Motivation and need for using a modem do appear quite contrasting between the eight countries to the right of the European average (16% or less of users), and the United Kingdom, Luxembourg, Finland, the Netherlands and particularly Denmark and Sweden where the modem achieves penetration figures as high as 58%, comparable to CD-ROM and not so far from PCs.

Unsurprisingly, the shape of the *Internet* users graph bears a strong resemblance to that of modems, illustrating the fact that it is the Internet that is driving the modem market.

The Euro barometer findings of 1999 are mostly confirmed by other sources (see, e.g., Sciadas, 2002), at least in the ranking of the countries (actual figures are difficult to compare by lack of consistency in question wording).

In addition, the MIS 2000 survey finds that more than half of the EU countries show more than 50% of households having a mobile phone, with Finland reaching 80%, while Germany shows less than 40%.

Most demographic variables bring significant contrast. Proportions vary according to professional status: 75% among the self-employed, two thirds among the employed and 43% among those not working. Household income shows linear correlation between about one third of lowest income and three quarters of the

highest. Larger households are also more likely to have a mobile phone. Level of education also shows a strong positive correlation.

Gender is, on average, the least discriminating variable, while countries, income and terminal education and age are the most significant sources of disparities. This indicates, “strong and distinctive national practices and habits, and traces of a complex social divide based on income and level of education” (INRA, 2000: 17).

Some observers notice that Europe may have a competitive advantage in the mobile sector. Some key players in the electronics business – especially Nokia and Ericsson – are based in Scandinavia. They contribute to a rapid growth in wireless technology. The Nordic region, for instance, has an internet penetration of 41% compared with 37% in the US and 21% in the rest of Europe; mobile-phone penetration in capitals Stockholm and Helsinki is more than 90%. Another key to Europe’s success is, according to Almar Latour (2000), its new equity culture: “Fueled by the arrival of the Economic and Monetary Union, a new breed of risk-taking CEOs have stepped up the merger-and-acquisition activity in Europe. Meanwhile, young entrepreneurs are founding their own companies at a pace Europe has never seen before”.

The country divide

On average, Europe shows a balanced growth between Television and Computer technologies on the one hand, and between these two ‘older’ clusters and the new ‘mobile’ cluster.

When one merged the penetration figures of the three clusters, one could identify *six groups*:

- 1- Sweden and Austria both show much higher than average penetrations of the three technologies.
- 2- Greece and Portugal, on the other hand, are significantly much lower on all clusters.
- 3- Belgium, Italy, Ireland, Spain and Germany form a compact group around the European average and seem to balance the use of the three types of technologies.
- 4- Austria is higher than average on the television axis and about average on computer, but lower on the mobile cluster. The United Kingdom is higher than average on the television axis and about average on computer, but higher on the mobile cluster while Austria is more oriented to the ‘old’ technologies, the UK combines the television and mobile cluster.

5- On the contrary, Luxembourg, Finland and the Netherlands are about average for television, but much higher up the PC technology and wireless axis, so that these countries appear more oriented towards new technologies.

6- France stands on its own, with PC technology use about average and below-average use of mobile technologies, and it is still significantly below average for television (mostly due to a very low use of teletext).

On the basis of the Information and Communication Technology Adoption Scale (ICTAS), which can be used as an integrated indicator of the use of modern information and communication related technologies (clustered around the television and the computer), *the gap between northern and southern Europe is quite striking and quantifiable*: the medium user countries form a central block of continental Europe (plus Ireland), the heavy users are found in Northern Europe, the light users are at the periphery of Southern Europe (Greece and Portugal).

Need, price, and complexity

What is keeping people from using these technologies?

The notion of perceived *need* is central. Over half of the Europeans who are not interested in on-line services say they don't need them in their private life. Even a number of heavy using countries show high proportions of non-users feeling no need for on-line services. This fits perfectly into functionalist theory, and more particularly in *uses and gratifications* theory that sees media in general as a mean to satisfy various needs. However, the concept of need and its use by respondents is to be taken with caution. Denying a need is in some cases a legitimate cover-up for ignorance, fear or lack of financial means.

Therefore, second to the absence of need is *price*, then perceived *complexity*. Here again, there is no clear-cut dichotomy between northern and southern Europe, with Germans, Belgians and Austrians just as repelled by complexity as Portuguese and Spaniards.

Young, well-educated, rich males on the run

Women are more deterred by complexity than men. Noticeably, proportions of people finding these technologies too complicated vary more significantly along demographic variables identified as key in predicting technology adoption: *age, income and level of education*. This shows that younger, wealthier and better-educated Europeans are less likely to find on-line technologies too complicated.

This is yet another confirmation that these three demographic variables can be quite powerful in segmenting the technology market inasmuch as they are reliable predictors of restraint to adoption on the basis of perceived over-complexity. Any product development or marketing campaign will have to be concerned about the seeming or factual complexity of any innovation. It is likely that, among less deterred groups, complexity might, in fact, encourage the adoption of innovations which, for that particular target, will have to prove an increase in complexity or functionality while the opposite is true for convincing non-users that it is all too complicated for them.

The *lack of time* is an obstacle of increasing importance as we go higher up the income. Portugal, Greece and Ireland show significantly lower levels of respondents deterred by lack of time.

The *age* factor is also crucial in studying new technologies. We all know people around us who show some level of reluctance towards technologies for which they feel insufficient need or skills. The generation gap is obvious. This is where the full meaning of *new* in 'new technologies' comes to light. For a technology to change status from 'new' to 'aging' or 'obsolete' only takes the next innovation to hit the market.

How new is 'new'?

There is a second dimension to the novelty of new technologies in the sense that it was unknown to its users beforehand. Depending on your age or your length of service, your ability or likeness to modify your behavior and adopt a new technology will vary. Senior people are therefore more likely to remain longer on the non-adopter side while, at the other end of the age spectrum, the younger population will have little difficulty in adjusting.

Generation gap isn't, in this particular case, to be seen as just another sign of older people's conservatism. New technologies, and the changes in behavior associated with them, have to pass the hurdle of lifestyle and habits, which grow deeper, rooted as time passes. Something new might not seem like an improvement if only because of the immense time investment necessary to learn or re-learn previously acquired and much practiced behaviours. Younger people have little merit in their ability to adopt innovations. In fact, it is worth stressing that to a child, the keyboard of a computer is not newer than a pencil; learning how to type and send an e-mail is not any harder (probably less) than learning how to hand-write a letter, fold it into an envelope and apply a stamp; using a traditional phone confined to the wall plug

might even seem unnatural as compared to using a mobile phone; just as going shopping might seem unpleasant and unwise as compared to ordering on-line. Naturally this is all a matter of education, depending mostly on efforts developed by schools and parents. Yet one can hypothesize that younger generations will grow to be more enthusiastic adopters as they grow older, that is if they can be kept in a innovation-adoption dynamic which would prevent another generation gap when too radical an innovation would, in some time, leave them at the door, just like today's elderly seem to have missed the current train of innovations (see also Picard's contribution).

Therefore, Ricci (2000) argues that explanations can be found in what Kotler calls '*personal factors*': position in the life cycle, economic conditions, and more generally 'life style' appeared to be strongly correlated to use of and interest for technologies.

Active, passive, heavy and non-users

When one tries to evaluate with quantitative instruments the evolution of the informatization of our societies, abundant evidence emerges confirming that the penetration of the key technologies is indeed increasing with variable ratios in all EU member states.

If we try to categorize the different users, we could say that there indeed is an '*informatized/computerized society*' with a minority of Europeans which are heavy users of information technologies. This social trend has also given rise to a counter trend of '*conscious un-informatized*' which are educated, upper-class individuals who deliberately and consciously choose not to abide to the rules of consumption of a societal model, which they consider to be in contradiction with their system of values. In between one finds two other types: a community of moderate or low users which is either essentially 'passive' or 'active' to the media system and which uses enough technologies to bear all the consequences of the competition between media. These communities may either adopt a passive or active stance in media consumption, use of TV technologies, and seek entertainment as a substitute to interpersonal communication or as a way to re-acquire a psychological relief against the complexities and the pressures of living in a modern society.

By way of conclusion

Seven general conclusions can be drawn:

Firstly, whether we like it or not, the information society in Europe is '*a society in formation*' and certainly not immanently emerging. The dynamic character of its policy has the benefit to point to large possible degrees of policy impact. In other words: the information society is not pre-determined (see also Garnham, 1994).

Secondly, there is no single road to the Information Society. Every country has its own particularities and these are very heavily determined by national political objectives. As a result, there is *no single road* to the Information Society. Every country has its own particularities and these are very heavily determined by national political objectives. As in every dossier, subsidiarity plays an important role here too and different national authorities in Europe react differently to the plans of Brussels (and this mainly due to national specificities).

A third somewhat contradictory conclusion is that there is so much information society-planning going on in a time when state planning is considered to be obsolete because of the policies of liberalization and the flexible circumstances that an information society is supposed to require. However, it is clear that the traditional neo-Keynesian way of state interventionism in public life is not the way information society policy is being made. In fact a more 'remote' but nevertheless active state seems to become the model here.

A fourth and related conclusion is the widespread support for the same visions in a period where the 'great narratives' are said to be vanishing. Information society visions have clearly become such a new narrative. This explains why, from 1994 onwards and in a Europe without communism, the EU policy both accelerated the liberalization of its communications markets and did put an enormous effort towards more general awareness-building measures and PR campaigns. As we already noticed elsewhere (see Servaes & Burgelman, 1996), historians of this period will undoubtedly uncover the beginning of a 'digital gold fever' that got into the discourse and policy of the EU.

Fifthly, the Internet in its most popular form (the World Wide Web) seems to hold characteristics, which might grow into true media integration. However, at the content side it remains to be seen whether it will not become another divide comparable to the 'old' media. As is usually the case with new technologies, it remains to be seen how much ICTs will be used on top of existing devices and/or

will gradually replace them.

Sixthly, another kind of capital difference between groups with different socio-economic status is emerging. A high percentage of the population is excluded as users of the new media, due to reasons related to their educational and financial status. Digital divide is enduring mostly because it underlies core social divides. Therefore, strategies to fill the gap can not be globalized.

Lastly and additionally, a new phenomenon of 'pleonastic exclusion' is taking place, as a result of the enormous numbers of channels of communication, which forces audiences to a continuous selection-exclusion of information sources. In other words, ICTs adoption is not to be taken for granted.

Note

* This chapter builds on Servaes (2002) and Servaes & Heinderyckx (2002)

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