The challenge of e-Inclusion.[1] Advantages and risks of a global medium

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Politics have a lot to do with successful goal-oriented networking, with the use, systematisation and standardisation of information and with the communication of policy aims. Within the framework of open societies, politics aim at being inclusive. Politicians, especially at election time, have an interest in optimising the communication between all stakeholders – between politicians and the electorate, and between lobbyists and decision-makers. Communication is central to politics. So what could be a better place to open a conference on networking entities than the Parliament of Lower Austria.

Due to globalisation the questions of participation and worldwide exchange accentuate the need for consensus on the basics of human values and behaviour. Minimum standards on the basis of human rights are of paramount importance and have gained in urgency. Due to internet and its availability for the good and the bad, and due to the effects of Information and Communication Technologies (ICT) on the economy and on employment, the issue of e-Inclusion is perhaps the most important question to be addressed. Increasingly, it is regarded as a legitimate political goal and is expected to increase efficiency in many areas. The extraordinary Lisbon European Council of 23rd and 24th of March 2000 called for 'an information society for all'. At the international institutional level we have many protocols and contracts emphasising 'a one world approach'. The environment

1. Based on the opening address at the 11th EATA International Conference on Networking Entities 'NETTIES 2005'. 12th-15th October, Government Quarter St. Pölten, Austria.

and its use, social fairness and human rights are central themes and relate to sustainable development. At the same time we are confronted with serious conflicts, natural catastrophes and severe deprivation in many parts of the world. The socio-economic divide between Africa and other least developed countries has widened. We are experiencing the development of parallel societies in the midst of our European cities. The real world is characterised by many divides. So what do we mean when we refer to 'an information society for all'?

On the commercial and economic side, market mechanisms and productivity gains provide the main incentives. In several European countries we are experiencing serious cutbacks in public spending and performance and a corresponding shift from the collective welfare state to individual responsibility. Of course I don't have to tell you that the problem with money is nothing new. Here in Austria the poet Johann Nestroy already remarked in the 19th century: "the Phoenitzia invented money. But why so little?" Both globalisation and the European process of integration have induced major transformation processes, in some societies more than in others. High levels of mobility are changing the socio-cultural fabric of societies making the ability to communicate in cross-cultural settings a highly important key skill. Generally speaking, the development of the information economy requires new skills and puts a growing emphasis on education, training and the management of human resources.

In all societies the experience that both illegitimate and illegal behaviour through individuals and organised cybercrime take full advantage of information and communication technologies has raised awareness for the necessity of safety architectures, policing within and legitimate exclusion from the net. In this respect, we only have to remember that terrorists are modern men! The utopia of the self-regulating democratic network society has suffered serious setbacks which also have consequences for ICT uptake.

In the next three days we are going to be introduced to a broad scope of papers and discussions on networking entities, telematic applications and themes relating to e-Inclusion. In my address I shall attempt to link the themes of inclusion and exclusion to general societal change and difference. My main thesis is that policies of e-Inclusion will not be successful without giving considerable attention to pre-conditional socio-economic questions of integration, education and culture.

1. Definitions of e-Inclusion

The challenge of e-Inclusion is one which tends to have been underestimated, including its definition. The issue of definition is not just of academic interest: it puts a particular slant on research which in turn informs and influences policy.

Although often neglected, various definitions of e-Inclusion can be found. E-Inclusion in itself is a complex concept and therefore most definitions should be regarded as preliminary. The working definitions for example of e-Europe's Advisory Group in which e-Inclusion is defined as being "the degree to which individuals and communities are empowered and willing to participate in an information and knowledge-based society and economy" have initiated useful debate and comments from within the group itself:

> Further, e-Inclusion refers to the degree to which information and communication technologies (ICTs) contribute to equalising and promoting participation in society at all levels.[2]

As the group makes clear, this definition focuses on effects rather than causes of inclusion making research on factors leading to exclusion necessary. Accordingly when referring to groups and

2. http://europa.eu.int/information_society/eeurope/2005/doc/all_about/kaplan_report_einclusion_final_version.pdf, S. 7.

societies without the possibility of taking full benefit of ICTs we speak of the *digital divide*. Again I quote the definition used by WG2 of e-Europe's Advisory Group 'e-Inclusion: Social Determinants of ICT Uptake':

> The digital divide measures the gap between those who are empowered to substantially participate in an information and knowledge-based society and economy, and those who are not.[3]

The main purpose of the working group is to thus provide clear goals for policy to help prevent or overcome digital divide. Clearly, there is a normative, goal-oriented aspect involved, which implicitly refers to conditions of democratic societies. Many other countries pay for political reasons special attention to creating informational barriers and will certainly not support the goal of 'promoting participation in society at all levels'. The most prominent example is China, but there are many other examples. Again for other countries, there is no awareness for questions of accessibility.

Even if we confine our considerations to conditions within Europe, many experts regard definitions of e-Inclusion either as being too narrow, too rigid or as ignoring important aspects with relevance for policy. By including a broader reference to empowerment, involvement and participation, it becomes clear as Kaplan and Liberos have stated that physical access, access to specific services and affordability are not enough to reach e-Inclusion.[4]

It has also been criticised that definitions often mix the goals with the means. The present focus nevertheless usually addresses the three main aspects of *access, user skills* and *availability* of technology and technological infrastructure. At the policy level there

3. Ebd.
4. Ebd.

is accordingly a lot of emphasis put on group-oriented difference such as age, physical ability and regional remoteness with regard to accessibility issues. It has however been suggested that the term e-Inclusion should be broadened to refer to other determining factors, which also may require attention at the policy level. One important point, which I think will be very obvious to experts and will be discussed at this conference was made by Boez Gelbord: how do new technical and service architectures, especially trust architectures created to enable e-Government, e-Health and other services reflect e-Inclusion?

2. Accessibility

Accessibility is a prerequisite of e-Inclusion and is appropriately receiving prominent attention in the present debate on e-Europe and 'An Information Society for All'. In all initiatives there is growing awareness for related questions. As Ima Placencia has recently pointed out accessibility problems concern at least 20% of the European population; due to the demographic shift this percentage is growing and therefore also represents a growing market; 63% of people with disabilities are 45 years or older.[5] Non-accessibility means effectively exclusion and has implications for social fairness and the attainment of the Millenium goals both at the collective and at the individual level. At the collective macro-societal level degrees of accessibility influence the economy as a whole. Presently, as research shows, we are a long way from realising the declared aim of the Lisbon strategy (Lisbon Council 2000) to become the world's leading knowledge-based economy.

5. Porrero, Immaculada Placencia: e-Accessibility and e-Inclusion and usability; where policy meets research. http://europa.eu.int/information_society/eeurope/i2010/docs/i2010_ws_report_draft_final.pdf

3. Changing Society

To appreciate the importance of e-Inclusion it is necessary to look at societal change and the growing impact of e-Exclusion. As Manuel Castells[6] has pointed out, the impact of the internet is less a question of the quantity of users, which is estimated to reach around one billion before the end of this year, and more a question of qualitative change. No area of social life is unaffected by the development of Information and Communication Technologies (ICTs) and the use of networks. The very existence of the internet is leading to new structures within and around the technological possibilities the net offers and is affecting core activities in economy, politics and society – worldwide.

Cultures and the social fabric of life are changing no less dramatically than with Heinrich Hertz's discovery of electric-magnetic waves. There is however a very substantial difference between the introduction of electricity and the spread and the use of the web: as we all well know, the speed of change is one of the major challenges of our time. Often speed and change are related to negative developments due to the inability to adapt social and economic systems within processes of broad transformation. And even more often, change results in asymmetrical development disadvantaging certain groups within society at certain times.

Let me first illustrate this point with an example from the Scottish Highlands, more precisely the Hebridean Islands.

Heinrich Hertz made his discovery in 1886 at the University, then Polytechnique of Karlsruhe. The island of Iona first got electricity seventy-seven years later in 1963. Only four years later in 1971 the computer technician Ray Tomlinson from Bolt, Beranek and Newman in Cambridge Massachusetts developed the pro-

6. Castells, Manuel: Die Internet-Galaxie. Internet, Wirtschaft und Gesellschaft, 2005, S. 11.

grammes which were later to lead to e-mail. In Germany the first e-mail was received and sent by Werner Zorn, who can be regarded as internet pioneer at the University of Karlsruhe, on the 2nd of August 1984. The first IBM 5150 Personal Computer came onto the market in 1981 and the world wide web was established in 1995. As a measure of e-Inclusion all senior citizens of the Hebridean Islands in Argyll and Bute, including Iona, were given a laptop and internet connection by the regional authorities two years ago. The problems of remote regions and the awareness of digital divide, resulted this time in positive discrimination – a strategy which generally should more often be implemented in pilot projects and evaluated for costs and effects.

The many workshops and working groups, and the number of international conferences such as the International Conference on e-Government which took place in August in Copenhagen (EGOV05) or the e-Accessibility Conference which takes place later this month[7] in London bare witness both to the high level of scientific work in this area and the high priority of European Commitment at Commission level for the future of e-Europe.

4. Digital opportunity and digital divide

The question of e-Inclusion is increasingly not one of choice. Again as Manuel Castells has pointed out, we live increasingly in the internet galaxy whether we like it or not: if you don't go to the net, it is going to come to you. Increasingly there will be many services only available through the net, or they will be only available at the local face-to-face level at higher cost. This also applies to consumer goods and commercial services. As individuals we are already making this experience when booking our flights to London, Mallorca or Vienna. So if as individuals we have no or increasingly little choice about being users or non-users, obvi-

7. In September 2005.

ously the topics of digital opportunity and digital divide are of central importance. E-Exclusion becomes very much more discriminatory in all future scenarios. In future, digital divide will correlate more closely with issues of social inequality. There is also the substantial risk that already existing social cleavages may be intensified.

So what are the barriers to accomplishing a substantial increase in net users? I think those can be found at many levels. Accordingly the solutions will be multidimensional. What is causing digital divide? We can name technological, infrastructural, political, educational, socio-economic, cultural, linguistic and psychological reasons for the uneven distribution of net-use; and at all levels we shall have to find answers! Also within international, interdisciplinary research we need to look more closely at the *patterns* of variables leading to exclusion. The barriers causing digital divide are themselves unevenly distributed.

Mental and psychological barriers and preconditioning socio-economic differences are at this stage of development perhaps the most difficult to overcome. Within the European context older groups of the population are more likely to use the net in the U.K. and the Scandinavian countries than in Germany or in France. Programmes of accessibility for disabled persons, especially those with disability of sight have raised the awareness for the responsibility of policy makers to ensure action at this level. There is not surprisingly more activity in countries which traditionally have extensive assistance programmes and legislative measures to accommodate everyday inclusion at the workplace, at home and in public places. Again there are significant differences of the level of activity across Europe.

What about the socially deprived, ethnic communities and minority groups? Are they going to be faced with a double exclusion? Do we do enough to target special groups? Another

question is that of cultural barriers in the broader sense, where research data is not sufficiently available.

In the second part of my paper I shall concentrate on the digital divide and the gap. It is important to distinguish between different categories of gap within the digital divide. In some areas it will be easier for stakeholders to close the gap than in others. In some there is a real danger that the gap will not close, it will widen if we don't pay more attention to the mechanisms of exclusion.

5. The technological-infrastructure gap

Let me begin with the technological-infrastructure gap. As we know, and as the present policy efforts to increase the availability of broadband demonstrates, the regional distribution of hardware requirements discriminates the rural and less populated areas.

Due to the rapid development of satellite technologies and multiplatform strategies, including mobiles and digital television, this problem can most probably be solved from a technical point of view in a much shorter space of time than originally envisaged. The digital convergence of networks, services, media, tools and hardware together with nanotechnological development have changed the information society and – from this point of view – offer good opportunities to bridge the digital divide. Also there has been considerable advance in the development of integrated assistive devices and advanced interfaces, in many cases not only facilitating accessibility, but offering a high standard of communicative mobility for disabled persons and for persons with low digital literacy skills.

Coming from a research university with large and successful faculties for computer science, informatics and engineering I am fascinated by the rapidity of technological development and have great confidence that many developments will lead to a better

quality of life. There is however another side of the story. Due to the speed of innovation users see themselves confronted with always having to catch up; this may give our economies a boost but also has a high risk that users will drop out if design, as advocated in the 'design for all' policy doesn't keep pace. We know that a majority of regular users only take advantage of a fraction of the *potential* modern ICTs offer us. Efforts will thus have to concentrate on a combination of digital literacy, demand-informed design and more sophisticated IT skills of use.

According to several studies[8] the internet is most often used for instrumental reasons which have to do with the workplace, family and everyday life of users. In 2001 e-mail accounted for 85% of Internet usage and that hasn't changed very much.[9] Interestingly chat-rooms, news groups and internet conferences have lost in appeal. We therefore have to look more closely at the communication of needs between non-users, users and between content and service providers. This isn't just a question of questionnaires and market research. The process should begin within curricula development, training, and on-going education for engineers and computer scientists, who urgently require training in soft skills as part of their courses. Adequate communication between experts and non-experts is essential in order to foster an attractive user driven technology environment as for example recommended by the e-Learning Industry Group (eLIG).

6. The educational knowledge gap

One of the most obvious developments in modern societies is the specialisation of knowledge, which is now so advanced that it is more appropriate to speak of cultures of knowledge; each with

8. Castells, S. 131.
9. Howard, Philip N./Jones, Steve: Society Online. The Internet in Context. http://faculty.washington.edu/pnhoward/publishing/articles/contents.pdf

their own languages, methods and methodologies. This development makes communication between experts and non-experts, between scientists and policy-makers difficult. Within the international context, communication becomes even more complex. In the information society we require special cultural communicative skills to be able to translate and mediate between the specialised cultures of knowledge. The concept of e-Skills, which mainly covers the categories of ICT-practitioner skills, ICT user skills and e-Business skills should in my view be broadened to include orientating knowledge including abilities of critical judgement. At the global regional level the knowledge gap between the least developed countries and the highly specialised knowledge societies is enormous.

An important digital opportunity lies in the better dissemination of information and knowledge, which takes us back to the problems of accessibility and digital literacy. Generally there is less awareness for the extent of global adult illiteracy in the traditional sense: The United Nations defines illiteracy as the inability to read and write a simple sentence in any language.

The latest OECD study on 16-65 year olds can illustrate the challenge of digital literacy and e-Inclusion that lies ahead. First the growing problem of illiteracy itself has to be tackled. According to the study 22% of the population in England and Wales is functionally illiterate compared to 25% in Ireland and 20% in France. If we include the European statistics of the percentage of adults whose level of document literacy is rated 'low' we find a European weighted average of 49.34%. These are the problems we have to deal with on the way to digital literacy as a precondition for the implementation of 'i2010 – a European Information Society for Growth and Employment'.[10]

10.Kommission der Europäischen Gemeinschaften KOM (2005) 229 endgültig SEC(2005) 717, S. 4.

7. The cultural gap

One of the recommendations of i2010 is the formation of an integrative European information society, so let me make just a few comments on the cultural gap within Europe. Hereby we should differentiate between the more functional issue of language and the more difficult questions of mentalities, ethnic and cultural socialisation and finally socio-demographic attributes.

There is obviously a correlation between language competence and online use. Due to the explosion of websites and domains, I won't risk giving a figure for today but according to one source (Inktomi) almost 87% of websites in the year 2000 were in English. It is therefore not surprising that within Europe the Scandinavian countries, where English is widely spoken, lead the league.[11] There also seems to be a relationship between the size of country, remoteness, language and online use. In Iceland 86% of the population are internet users. In the east European countries we can also observe a rapid increase in use in small countries, Estonia having reached 50%. This clearly shows the potentials for bridging the regional divide. But there again why were there only 10% of the Greek population among internet users in the same year?[12] This has of-course changed, but the interesting question remains: why are some societies much slower in the uptake of new technologies?

Using the developments of Human Language Technology research (HLT) – again my own university is involved – ICT offers enormous potential for helping to overcome linguistic barriers. As we all know only too well, language constitutes a real barrier to the european integration process. In combination with e-Learning, presence courses in the relevant countries, including cultural and aerial studies, ICT supported strategies of learning

11.http://mediaresearch.orf.at/c_international/c_nutzer.htm
12.IP/CMI: Internet 2002. International key facts, Köln 2002.

can contribute not only to visions of the future e-Europe, but to European integration at the face-to-face level. At the cultural level, language is a prominent, and possibly the most important element of European heritage and identity. The dominance of the English language in the net is often negatively seen from this point of view and plays an important part in attitudes towards voluntary non-use in some, especially elderly, social groups. Perhaps other scenarios are possible. Maybe we shall see, if not a revival, then at least the stop of language loss of small languages. Let me illustrate this point with an example. At the weekend I was sent an e-mail from Edinburgh and was surprised, and, having not lived in Scotland for many years, I confess I was amused, to read the e-mail Confidentiality Notice not only in English but also in Gaelic. On a more serious note, regionalisation and the revival of cultures is a vital part of the globalisation process, often as a reaction to the threat of the loss of identity and the fear of cultural globalisation.

What about larger countries which have had a large supply of sites in their own language for many years? Why are willingness to use new technologies and inquisitiveness for the new and the unknown – both most important prerequisites for ICT uptake – very much higher in some countries than in others. This is a very basic question in times of rapid societal change – the question, so to speak behind the question – and doesn't only apply to e-Inclusion. Here we need to know more not just about the sociology of culture, but also about the psychology of culture and cultural change.

Another question is the demographic shift and its effects. It is a known fact, that, apart from mainstreaming aspects of equal opportunities, the working force in Europe will require to train and integrate all available human capital. This may be good news for many women but also sets the gender aspect of ICT use under a different light. It is not only a question of personal social e-Inclu-

sion, important as this is, but also a broader aspect of economic development. We may ask why women in some countries are much more likely to be ICT users than in others? Also, why is there still a great reluctance for young women to study computer science or learn IT skills.[13] According to the Synthesis Report of the European eSkills Forum, in 2004 only 18% of IT practitioners in Europe are women. One example of positive action to change this situation is the introduction of computer science courses only for women at the University of Bremen.[14]

Why do we find significant differences within core European countries with high levels of development and educational standards with regard to female users? According to statistics published by the International Telecommunication Union for the year 2002 51% of users in the United States and in Canada are women, 49% in such varying countries as Hongkong/China, Thailand and Iceland followed by 48% in Australia and Sweden. At the other end of the scale we find China, Belgium, Switzerland and France with 39% female users, Italy and Germany with 37%, Malaysia with 36% and Indonesia with 35%. Most of the Latin-American countries range in the middle of the field as does the Czech Republic, Spain and Poland – many questions, but not many answers!

It is of course much more interesting to know what users do with the internet and even more important how user-skills and user-behaviour change. Recent studies of the German situation have for example shown that the percentage of female users has risen in 2004 to 46%. With ebay young German women and also housewives are boosting consumption rates, which are fine for e-

13.Between 1979 and 1999 the percentage of women users in Germany even sank from 20% to 17%.
14.Siehe hierzu: http://www.informatik.uni-bremen.de/~oechteri/Texte/Studienreformen99.html

Commerce: next to the USA, Germany has the second highest share of online shoppers.[15] Female users still, however, lag behind the male population with regard to hardware equipment and ICT skills. Obviously when discussing the cultural factors of e-Inclusion we must differentiate between non-use, basic and advanced digital literacy and more sophisticated levels of e-Competence. An appreciation of inclusion requires distinguishing more carefully between the varying qualities of internet use and the effects of digital learning.

8. The socio-economic gap

Generally, the higher the level of income and education the higher the share of users tends to be. This trend has shifted slightly, especially with younger groups. For reasons of time, I won't comment in detail on the socio-economic gap. It is important however to realise that socio-economic factors often correlate with ethnic background, levels of education and unemployment. Again, using Germany as an example, the level of unemployment is twice as high in the group of young school leavers with ethnic background as with their German peers. In other countries with significant multicultural populations we find a similar situation. With this in mind, digital literacy and e-Inclusion can lead in two directions: Tapping on the resources of digital opportunity combined with cross-cultural competence can result in new job opportunities. Digital literacy can however also lead to the further development of parallel societies. As a sociologist concerned with issues of integration, I feel that this is a major societal issue, where the risks of digital divide and the chances digital opportunity offers has to be given a high priority – both in research and in policy. It is necessary to understand the causes and effects of the digital divide in order to develop differentiated measures of

15.IP/CMI, 2002, S. 21.

action for targeted groups. As my previous remarks have shown, the composition of presently excluded social groups and the danger of continuing or widening digital divide may vary considerably from country to country. Presently there is no evidence that we are significantly lessening digital divide.

9. Concluding remarks

We live in challenging times in which founded research, innovative and creative ideas, active citizenship and solid policy making must come together to change this and to enable the high potentials of e-Inclusion to materialise. The development and use of ICTs have become a reality within the context of the greater challenge of globalisation and changing societies. ICT has changed society, is further changing society and ICT itself will be changed, hopefully as a tool toward the still utopian vision of an inclusive world society.

Let me conclude with a general remark. The e-Inclusion problematic is a very good example for the consequences of an inconceivable growth of knowledge. Today more people are involved in research than ever before. Every day we record more than 10.000 scientific publications. In Internet billions of pages are available. All this newly generated knowledge widens our possibilities of action to an incomprehensible dimension without, however, supplying the criteria to enable the choice of action. The dilemma of our times follows from the over-supply of information, knowledge and innovations. This situation reminds us of T.S. Elliot's complaint: "Where is the knowledge we have lost in information? Where is the wisdom we have lost in knowledge"? (The Rock). Google and co are helping us with their search machines and increasingly intelligent strategies informational networking. The problem of criteria choice remains, rightly so, with us!

Complaints don't offer us solutions and the challenge of e-Inclu-

sion will accompany us longer than we may wish. But as we have no possibility to escape from the dynamics of change. This process can only be successful in my opinion, with the help of the social sciences and the further accumulation, teaching and evaluation of social knowledge. If this is our will then it should be our goal. But as the English proverb tells us: the proof of the pudding is in the eating and I am not too sure if we always have the right ingredients and the best bakers to bake the fabulous European cake we are all hoping for.