

ICT for Elderly People: «Yes, ‘They’ Can!»

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ABSTRACT

This paper aims to promote a reflection and a discussion about the use of ICT (Information and Communication Technologies) by the elderly people because this group of citizens has the serious risk of being «e-Excluded». Some initiatives of the European Union and of Portugal are presented and explained to make clear the efforts that were done and some that are still being done to promote and allow the participation of elderly people in order to the use of ICT in their daily activities: «e-Inclusion». Because elderly people constitutes a heterogeneous group this paper tries to put in evidence some of the main barriers and constraints when elderly people use ICT. However the paper also aims to present some trends for the future that may overcome the present difficulties to promote an active ageing with the help and support of technologies/ICT.

Keyword: Technologies/ICT, Elderly People, Active Ageing, European Union - EU, Portugal, e-Initiatives, e-Inclusion.

1. European Context and ICT Policies

It is well known that all industrial societies are ageing what implies profound economic and social (mainly) implications in what concerns the dramatic and deep increase of the old age dependency ratio in the future years in the European Community. Figure 1 shows the age pyramid in EU-25, 2003 (% of total male/female population):

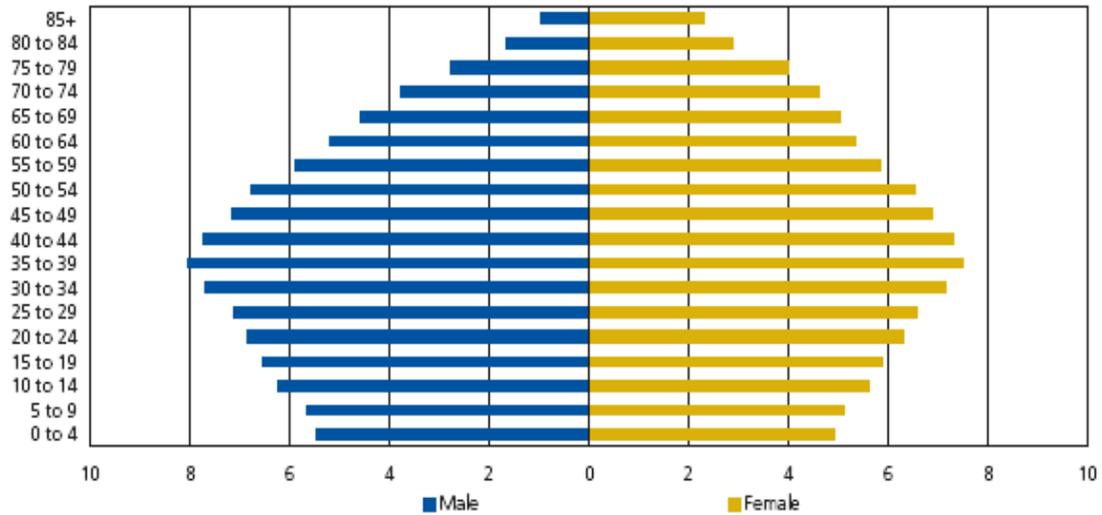


Figure 1: Age pyramid in EU- 23 (% of total male/female population).
 Source: Eurostat Yearbook 2006-07.

Over the last century and the mainly in the last decades average life expectancy in Europe has increased for males from 45.7 to 75.0 years, and for females from 49.6 to 79.9 years and at the same time with the reduction of the birth rate. The conjunction of these two factors mean that the European Union population is ageing and looking at long-term projections all the clues and evidences may conclude that this process is probably set to accelerate in the future. Figure 2 shows the proportion of the population aged 65 and over in selected world regions (% of total population):

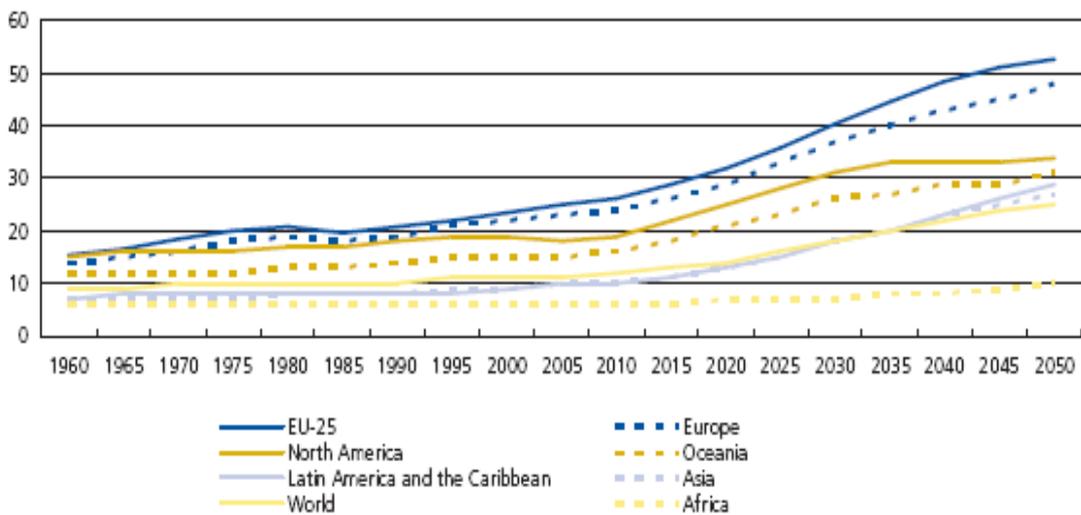


Figure 2: Proportion of the population aged 65 and over in selected world regions (% of total population). Source: Eurostat Yearbook 2006-07.

Figure 3 shows the life expectancy at birth (2004) according o the Eurostat Yearbook

2006-07:

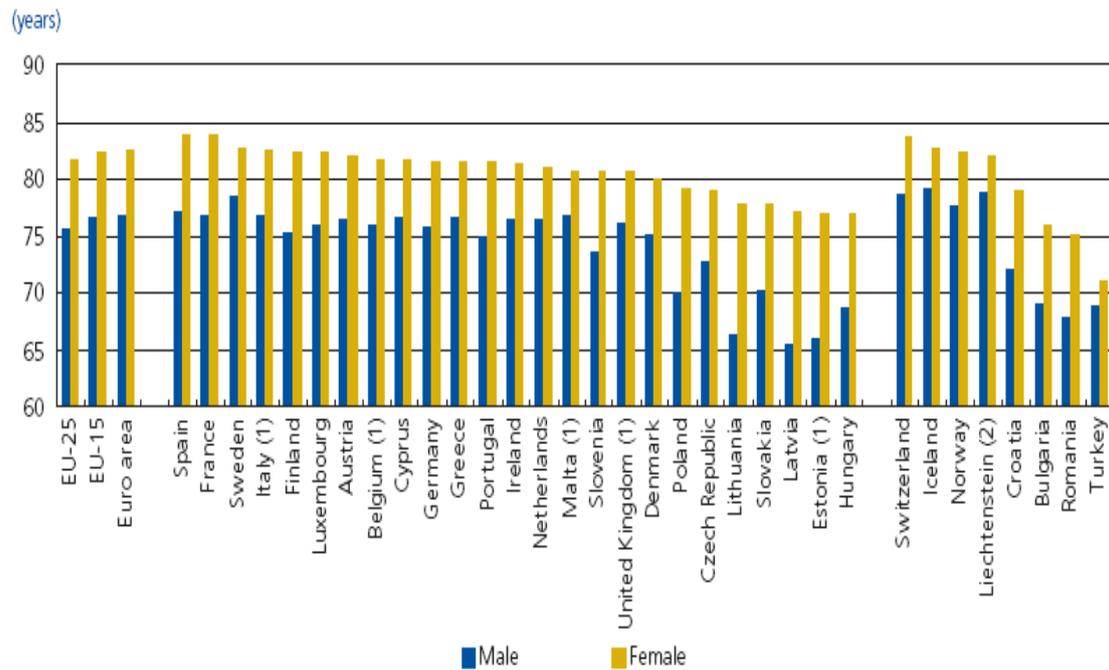


Figure 3: Life expectancy at birth (2004). Source: Eurostat Yearbook 2006-07.

There is a hope, a generalized understanding and an expectation that technologies/ICT can help societies to cope with the resulting challenges and to improve the quality of life of elderly citizens. There are different expectations on the way how ICT may affect social and economic life in the most industrialized countries. When elderly people are considered ICT is seen as a real opportunity to develop new products and services to develop new supportive tools to cope with the social and economic challenges posed by the demographic development (Kubitschke et al., 2002) but it is important and needed to be ensured that ICT must be cohesive and not divisive. This assumption means that all Europeans are able to be reached by the benefits and the advances of ICT applications potentially offer and not just for those who are already ICT literate but mainly for elderly citizens who missed the opportunity to gain experiences of ICT during their working or educational life. However elderly citizens must be recognized as not a homogenous group in what concerns ICT. According to data gathered from the *SeniorWatch* Project, the majority of older Europeans are in principle open-minded towards new technologies and many are already gained hands-on experience with ICT. The results of *SeniorWatch* Project also refers that at the same time about one third of the European elderly citizens are at risk of exclusion from ICT and this does not only concern older age cohorts because there are also a clear north/south gradient in what concerns the ICT involvement of elderly across the European Union.

The year of 1999 has been declared the International Year of Older Persons by the

United Nations because it was felt that some measures must be done by highlighting the need for respect and understanding for people of all ages, whether young or old. According to the statement of Kofi Annan (1998), the United Nations Secretary-General: “A *society for all ages is multigenerational. It is not fragmented, with youths, adults and older persons going their separate ways. Rather it is age-inclusive, with different generations recognizing – and acting upon - their commonality of interest.*”

As referred by Newell et al (2004), because we all age over time, age discrimination is perhaps the only form of discrimination that can affect everyone. Therefore it is possible that some age distinctions are justified such as where they aim to protect certain age groups which may be vulnerable to exploitation or abuse or to extend concessions to an age group which is particularly disadvantaged in some way.

According to the previous statements it is important to improve the quality of life of European elderly citizens. Quality of live must means just not only living longer independently (especially at their own home) but providing conditions to continue in high quality employment and contribute productively to the economy. This is effective «active ageing» that is important for their self-esteem. Promoting conditions for the elderly people in what concerns an active participation in society, citizenship, the promotion of social contacts and activities, doing daily economic activities (shopping), and allowing democratic and decision making represents the main conditions for well-being and active ageing.

The European Commission has been adopted in the last few years several initiatives and action plans about the use of technologies/ICT for the European citizens:

- *eEurope* Action Plan – An Information Society for All (1999);
- The *eLearning* Action Plan – Designing Tomorrow’s Education (2001);
- Strategies for Jobs in the Information Society (2000);
- *i2010* - a European information society for growth and employment (2005)
- The Lisbon Strategy and the Information Society (2006);
- Riga 2006 Riga Ministerial Conference on ICT for an inclusive society: Ministerial Declaration (2006);
- Action Plan: Ageing well in the Information Society (2007).

It may be affirmed that the congregation of the whole EU initiatives and plans may be resumed in three pillars according to the *i2010 Initiative*:

1. **A single European Information Space** to promote an open and competitive internal market for electronic communications and digital content.
2. **Innovation and ICT R&D** promote growth and stimulate ICT take-up by businesses.

3. Inclusion, better public services and quality of life ensure that growth is consistent with sustainable development.

To reach those aims the European Union Commission recognized that for the elderly people some coordinated efforts as well as the add of new or reformulated actions and plans in order to integrate, complement and reinforce existing work, in three different levels (EU Commission, 2007a):

1. Ageing well at work or ‘active ageing at work’: staying active and productive for longer, with better quality of work and work-life balance with the help of easy-to-access ICT, innovative practices for adaptable, flexible workplaces, ICT skills and competencies and ICT enhanced learning.

2. Ageing well in the community: staying socially active and creative, through ICT solutions for social networking, as well as access to public and commercial services, thus improving quality of life and reducing social isolation (one of the main problems of older people in rural, scarcely populated areas, as well as urban areas with limited family support).

3. Ageing well at home: enjoying a healthier and higher quality of daily life for longer, assisted by technology, while maintaining a high degree of independence, autonomy and dignity.

Figure 4 presents the percentage on the use of ICT in Households and by Individuals that confirms the real challenge and the urgency to improve the use of ICT especially among the non-literate, the unemployed, the women and the elderly citizens:

Computer skill level	EU total (%)	Low educated (%)	Aged 55-64 (%)	Aged 65-74 (%)	Retired/inactive (%)	Unemployed (%)	Women (%)
Never used	41	65	61	83	73	44	44
Have some degree of computer skills	59	35	39	17	27	56	56

Figure 4: Community Survey on ICT use in Households and by Individuals (%).

(Source: Eurostat, 2006)

In Portugal several initiatives related to the e-inclusion were done that the main and important are going to be presented and summarized:

- Green Book on the Information Society in Portugal launched in 1997;
- National Initiative for Citizens with Special Needs in the Information Society launched in 1999;
- Connecting Portugal – National Action Plan for the Information Society for the period of 2005-2010;
- National Action Plan for Growth and Employment for the period of 2005-2008;
- National Action Plan for Inclusion for the period of 2006-2008;
- National Strategy for Sustainable Development for the period of 2006-2015;
- National Action Plan for the Inclusion of People with Disabilities launched since 2006.

All the above national strategies aim to allow info-excluded groups to have access of the benefits that the info-society in order to promote and facilitate the inclusion of different groups of risk of social exclusion: women, non-literate, unemployed and elderly people. Another aim of those initiatives includes citizens with special needs to ensure their access of ICT and also minimize content-related accessibility barriers. The «*Connecting Portugal National Plan*» may be considered the main political initiative of the Portuguese Government, the so-called «*Technological Plan*» a Plan to mobilize the Information and Knowledge Society based on five main pillars:

- Qualifications and Citizenship;
- Promotion of the e-inclusion and e-accessibility;
- Contents and Infrastructures;
- Technologies and Knowledge, and
- Public Services.

The Portuguese Government also launched more initiatives/resolutions as follows:

- Resolution 96/1999: National Initiative for Citizens with Special Needs in the Information Society;
- Resolution 97/1999: e-Accessibility of Websites from Public Administration;
- Resolution 110/2003: National Programme for the Participation of Citizens with Special Needs in the Information Society;
- Resolution 120/2006: National Action Plan for the Inclusion of People with Disabilities;
- Resolution 9/2007: National Action Plan for Accessibility 2006-2015;
- Resolution 155/2007: e-Accessibility Guidelines.

2. Main barriers, problems and constraints when elderly people use ICT

The elderly age group is not a homogeneous one in what concerns education, income or even the different types of disabilities often associated with age the elderly people as a group are at the greatest risk of being excluded from the benefits of the Information Society.

Most of the elderly people have not directly been involved in the evolving Internet or Information and Communication age, as they have not extensively used computers or the Internet through their educational, working and/or personal lives. The elderly have had to acquire ICT competencies in disadvantageous conditions, e.g., they have to learn to coexist with technologies that slowly displaced manual activities in restaurants, shops, hospitals, government offices... This lack of experience clearly acts as an enormous barrier to promote learning about computers. In addition to those constraints most of the elderly people do not have their own computers, because they cannot afford them and/or they do not perceive any benefit that a computer may bring to their daily live (Osman et al, 2005). The combination of the elderly and ICT is frequently described in problematic terms. As argued by Steyaert (2006) old age often implies a 'disengagement' from different social areas, such as the field of technology, the digital divide holds an age-related division, with elderly citizens being over-represented among non-adopters.

Elderly people may encounter specific barriers to learning about ICT, Internet and computers because of age-related sensory, physical and cognitive changes. As argued by Czaja (2003) ageing is associated with a reduction in visual acuity, contrast discrimination and the precision of eye-movement control. More problems, e.g., visual impairments, text and buttons in industry standard software become more difficult to distinguish. Echt (2002) also refers that the difficulty of seeing what is on the screen thus complicates the process of using it. When they are dealing with contents the difficulty of seeing is particularly problematic.

As stated by Dickinson et al (2005) elderly people are also more likely to have some fine motor control impairment and this situation complicates much more the use of standard software with cluttered screens with small targets can make using the mouse time-consuming and much of the times very frustrating. According to Williamson et al (1997) at that time several studies already showed that elderly people have significant problems using the mouse, partly because of lack of experience, but also because of motor control difficulties. Sometimes the problem in relation to elderly is mainly one of compatibility. It must be ensured that the elderly and their interfaces understand one another. As argued by Harrington & Harrington (2000) this means that either the people who develop interfaces have to remain oriented in part to elderly

people, test the devices on them, let them help with the designs, let them suggest the designers, and so on, or elderly people have to learn to communicate differently.

Another constraint is related to the cognitive impairment that can add to the previous difficulties. The ability to rapidly process the contents of short term memory always declines with age that implies and makes more difficulties to act on new information. Steyaert (2006) also stressed the fact that failing eyesight, a declining ability to learn and retain information on new subjects, reduced contact with environments that feature ICT, and limited financial means, for instance, may hinder the adoption of ICT.

The European Commission (2007b) also recognized the existence of several barriers and constraints for the use of technologies/ICT for the elderly people that can be summarized as follows:

- a) **Affordability:** data gathered within the EU countries showed that about 80% of the differences in mobile penetration rates can be attributed to differences in average personal income; EU recommends that it is also crucial that the industry approaches its research and development with the elderly in mind, not only to ensure that the technology is accessible, but also to create products and services that come at lower price and higher quality levels.
- b) **Availability:** Due to geographical restrictions, access to technology, especially internet access represents a serious problem so, introduction of broadband or next generation networks into rural areas or regions are needed.
- c) **Relevance and impact:** There is a kind of feeling that many of the IT courses and trainings available today are not well suited for older people and pensioners. According to these constraints there is a need for greater partnership between both the community organisations and consumer groups targeting the elderly to produce training programmes that are more relevant to the older citizens, both in terms of content and the delivery process.
- d) **Accessibility:** Despite the efforts already done by the community to equip the older members of our society with the skills needed to use technology, it must have to keep in mind that they often cannot use the majority of existing mainstream products. Severe vision, hearing or dexterity problems frustrate many older peoples' efforts to be included in the information society.
- e) **Usability and innovation:** The approach to both ageing and accessibility should be about usability .A main goal is to achieve mainstream ease of access and ease of use through the innovation cycle. It should strive to go beyond compliance, as the intention is to promote independent living and active participation in the knowledge economy and the knowledge society. Industry must be encouraged and supported to invest in significant investments in

research and development in this area by enabling the creation numerous innovative seamless technologies, by promoting the elderly to fully function in a modern working environment.

- f) **ICT and Healthy Ageing:** There is a fact that health, social integration and wellbeing are some of the primary concerns shared by the elderly citizens. The prevalence of chronic illness amongst the elderly people is increasing, as the population ages. The possibility to use Technologies/ICT to connect the elderly people with their families, bridging distances, sharing information and receiving assistance from healthcare and social providers on a sustained and proactive way is a key component to increase their quality of life. At the same time technologies/ ICT enabled healthcare allowing, for instance, the remote care of elderly persons from their own homes.

3. ICT & Elderly People: Trends for the future

There is a general consensus that ICT can help elderly people to improve their quality of live, promoting them to stay healthier, live independently for longer and if it this possible counteract reduced capabilities which are more prevalent with age that may allow them to remain active at work and/or in their community. Today ICT offers several solutions for elderly people for their independent living by managing their preferred environment by maintaining their independence and autonomy in order to enhance their mobility and quality of life, improving their access to age-friendly ICT and personalized integrated social and health care services. Ageing wee and active ageing means for elderly people continue active and able to participate in social life and work. However, as argued by Bosma et al (2000), more recently it appears as if the traditional negative discourse about elderly and ICT gradually will be replaced by a positive discourse because more and more technologies are conceived as a means to «empower» the elderly citizens. For example, domotics may promote independent living and online relationships may compensate for the lack of real-life contacts. This means that the positive effects of ICT must be stimulated and publicized.

According to Jaeger (2004) a constructivist approach must be done because with this approach technology/ICT is understood as a social-technical ensemble (or network) consisting in a variety of both human and non-human actors linked together in a network in which the technology/ICT is coming into being. In other words, every human being is a part of many different socio-technical networks. So, to be included in a socio-technical network requires a process of socialization where the person integrates the technology/ICT in question in his/her everyday life and by doing this learns how the relations in the network are constructed. This assumption relates to the

concept of «domestication» described by Silverstone and Hirsh in 1992: the way how people domesticate the technology/ICT and through processes of appropriation, objectification, incorporation and conversion turns the technology/ICT into a part of their everyday life. One important conclusion is that technology/ICT does not have one single meaning for elderly people. Their interpretation of technology/ICT as a tool may be used for many different purposes what does not mean that elderly people interpret and feel technology/ICT in exactly the same way that other elderly people groups do. This reflects the close interaction between technology/ICT industry and elderly people that means that elderly people should/must become a part of the process of shaping technology/ICT because they brings new interpretations of how to use technology/ICT. As Jaeger (2004) also referred, until recently technology/ICT was not interpreted as a tool for elderly people, thus industry and developers of electronic services have not thought of them as a target group and they have not developed services for the elderly people.

The EU Commission (2007) also stressed the need of the development of common visions, strategies and partnerships are needed involving stakeholders: older persons and their representatives, ministries and public authorities at national and regional levels, industry and providers, employers, public and private health insurers, researchers and academia, telecommunications and construction companies, and standardization bodies.

Mere access is obviously not the main purpose, but only the vehicle for assumed positive effects for those who have access. As Hüsing and Selhofer (2002) argued, once access been established, the next question has to be: “To what end?” Social organizations and policy institutes warn that simple access is not necessarily effective in producing change. Relevance, accessibility, usability, affordability and availability of resources and appropriate training and ongoing support for ICT learning are very significant. Cognitive slowing is a factor which has implications for elderly learners, trainers, course developers and training providers. As stressed by Burns (2002) adaptive technology solutions are really available and should form part of train-the-ICT-trainer instruction. Here more time to practice and carry out ICT procedures because elderly people may take a little time longer to learn new skills than they were younger it means that they need more time to process information and associate it with what is already known (Hazzlewood, 2005). However, as argued by Naumanen and Tukiainen (2009), if the elderly are motivated, adequately supported with activities, the learning takes place anyway and there is not needed to cover the whole ICT application, but what is needed is to be more of practical use, of cognitive exercise value, or purely for fun.

The process of ageing and elderly people should be seen in a transition in their

«socio-biological clock». Without a careful preparation such transition may promote anxiety but what is needed is to prepare elderly people for such changes. This attitude may enable elderly people to adjust their expectations as well as to ensure that elderly are not left behind!

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