

Global trends, policies and gerontechnology

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V.T. Taipale. Global trends, policies and gerontechnology. Gerontechnology 2014;12(4):187-193; doi:10.4017/gt.2014.12.4.001.00 **Background** Gerontechnology is the scientific backbone of technology for older people. People have always used more or less primitive technical aids when there has been a need, for instance, to walk with a walking stick or replace an injured limb by some kind of prosthesis. However, modern gerontechnology was born in the late 1980s with the understanding of the population ageing and with all the opportunities of ICT and health engineering. Goal: To assess the global policies and global developmental trends from the point of view of gerontechnology. **Method** To review the developments within United Nations, World Health Organisation and international Non-Governmental Organisations (NGO's) with a participatory method because the author has been from the 1970s a member or chair of national and international delegations and participated in research and the NGO field. **Results and conclusions** This field of science is very multidisciplinary and demands skills of cooperation, networking and appreciation of various spheres of science and technology. People in the field of gerontechnology should not only be able to work with colleagues from different disciplines of science, for instance, with engineers, social psychologists, designers, architects, representatives of physiology, genetics, ethology, and health, but they should also understand global trends, political processes and systems of health and welfare. This is because the users are at the center of the development with their needs, opinions and attractions. The position, responsibilities and opportunities of participation of older people are strongly determined by the local culture, politics and social structure, and the economic situation of welfare systems and older people themselves creates the market for new innovations.

Keywords: ageing of the population, living alone, older people as consumers, ageing & ICT

There are now more than 800 million people over 60 years, and the global number of older people is increasing in all parts of the world. In a world of uncertainties, the process of global ageing has for many decades been the only certain issue to forecast, but the countries, regions and political decision makers have not taken it seriously enough for their planning¹. The international 'tool' for requesting all nations to prepare for the population ageing have been United Nations Special Sessions and recommendations derived from global negotiations.

The first World Assembly on Ageing was held by the United Nations in Vienna, Austria in 1982. Although the demographic development of ageing was clearly seen at this time, and although the session resulted in promises of taking care of the process of ageing by all UN nations, just nothing happened afterwards. Since then the aged population increased, poverty increased, technological development exceeded all expectations, but it was not until the beginning of the 2000s that the UN took the topic on the agenda anew, now in the Second World Assembly on Ageing which was held in Madrid, Spain. This meeting resulted in the Madrid International Plan of Action², which has requested since 2002 all nations to build up their strategies for their ageing population. All nations agreed also to

report annually to the UN about their developments, which has been done and the reports have been collected and analysed by the UN economic commissions for regions^{3,4}. The UN-ECE economic commission for Europe covers for historical reasons not only Europe but also the United States of America and Canada, the Central Asian republics and Israel. ECLAC is the economic commission for Latin America and the Caribbean, ESCWA works for West Asia, ECA in Africa. The Economic and Social Commission for Asia and the Pacific is ESCAP. Although there thus was regular reporting, older people in different countries may not be too informed about this process and their governments' commitment of informing UN bodies.

When the ten-year-review of the Madrid World Assembly was held in New York, UNFPA and HelpAge International published their report "Ageing in the Twenty First Century, a Celebration and a Challenge", which described the global ageing comprehensively in 2012⁵. In the past decade, the number of people aged 60 and over has increased by nearly 200 million. It is estimated that by 2050 there will be two billion people aged 60 and over. Of every three people aged 60 or more, today two live in developing countries. The report reveals both positive development and backlashes in the position of older

people. A key finding is the incredible productivity and contributions of people aged 60 and over, as caregivers, volunteers, entrepreneurs, agriculture workers and more. Globally nearly half of old men and a quarter of old women participate in the labour force, or are compelled to work to sustain their living. Among the most urgent concerns of older people themselves worldwide are lacking income security and lacking opportunities of access to health care. Just one third of the world's population has comprehensive social protection schemes.

This report is also exceptional because there were consultations of older people themselves in 38 countries representing the wide variety of social, economic and cultural differences in everyday living in today's world. The method used was a standardised set of focus groups. The voices of the 1300 older people interviewed are an integral part of the report, for the first time in the history of UN reporting. Nearly half of the consulted older people believed they are treated with respect, but one half said that they find it difficult to pay for basic services and 40% say they are afraid of personal violence.

These issues challenge governments under the global economic crisis. Despite their promises, the aged population is suffering of poverty, insecurity, and lack of vital services.

WORLD HEALTH ORGANISATION AND AGEING

As a technical expert body of the United Nations the World Health Organisation (WHO) has also developed its work in the field of ageing. However, its activities have been scarce. The structure dealing with ageing within its headquarters and its five regional offices has been minimal and personnel allocations few until recently, although the individual experts were excellent. There are many different reasons.

Ageing has not been of high interest within world medical schools – it has been lacking the glory and heroism which is decorating surgery and highly specialised branches of medicine. Ageing is not an illness, not a diagnosis. Geriatrics has been an unpopular career choice, with low prestige, low remuneration, more time-consuming patients, mostly occupied by women⁶.

The history of the WHO tells about times when epidemics and contagious diseases were seen as major threats to the global community. There were few Member Countries to start with. Now, the role of WHO is highly recognized with its 191 Member States. However, non-communicable diseases have raised more attention rather late, the first major meeting being held in 2011.

Decades ago, in the 1970s the major discussions about world health policies were around strategies: should there be a 'horizontal' or 'vertical' strategy to tackle health issues. The horizontal strategy included prioritization on prevention and primary health care covering whole populations, the vertical on fighting different illnesses and curing persons suffering from those illnesses. It turned out that the member countries of WHO were willing to fund rather distinct projects on major illnesses than on general development of primary health care, and WHO is dependent on its funders and their majority opinions. Although there have been major successes fighting, for instance, tuberculosis, HIV/AIDS and malaria, this policy has also influenced a diminishing interest within public health policies nearly worldwide. One of WHO's challenges is also balancing between the needs of developed countries and the developing world, major funders being mainly from the developed world.

WHO takes care of ICD, the International Classification of Diseases which is the standard diagnostic tool for epidemiology, health management and clinical purposes⁷. It makes possible the analysis of the general health situation of population groups. It is also used to monitor the incidence and prevalence of diseases and other health problems. This instrument derives from the 1990s; later on it became evident that another instrument was needed to assess the functional capacity of people, especially older people. It was developed with extensive international consultations with NGO's and different medical specialties. The process resulted in the International Classification of Functioning, Disability and Health, known more commonly as ICF, which is a classification of health and health-related domains⁸. It assesses body functions as well as body structures, activities and participation. As the functioning and disability of an individual occurs in a context, ICF also includes a list of environmental factors. This instrument is more useful to health engineering and gerontechnologists than the mere list of diagnoses.

WHO has a Global Network of Age-friendly Cities and Communities⁹. The members are of different sizes from different parts of the world, within very diverse cultural and socio-economic contexts. They share a commitment to create physical and social urban environments that promote healthy and active ageing and a good quality of life to their older residents. The Network published a check list of essential features of Age-friendly Cities, based on consultations of 33 cities in 22 countries involving their older residents. Housing, participation, communication, transportation and outdoor spaces are all assessed in the check list.

The Department of Ageing and Life Course (ALC) of WHO has recently developed a tool kit called 'Age Friendly Primary Health Care Centres Toolkit'¹⁰, which assists health care workers in being well-versed in the diagnosis and management of the chronic diseases and the so-called four giants of geriatrics that often impact ageing. First of the giants is memory loss, which is becoming more and more common: it is estimated that there are nearly 36 million people worldwide with dementia and the number is projected to nearly double every 20 years. Secondly urinary incontinence is a silenced problem, and its treatment developed not enough not to speak about special diapers which are considered to be medical devices and priced as such, hidden in shops, compared with cheap baby diapers and their amply advertising. Third giant is depression¹¹, easily diagnosed as dementia. Late-life depression is characterized by high prevalence, unfavourable prognosis, reduced quality of life and excess mortality. This means that prevention is the right way to meet this challenge. Fourth giant is immobility, usually caused by falls which are very common in later life. However, technical aids are available to prevent immobility – is it not a central task of gerontechnology to give opportunities, methods and technical aids for sustaining mobility?

GLOBAL COMPARISONS

There exist few global statistics that really are comparable with each other. Even the Nordic Countries, small in size, strong in statistics and similar in their Nordic Model of social policies are hard to compare. OECD is producing reliable statistics, but only on OECD countries¹². One problem is that even statistical institutions like Eurostat, the statistical authority of European Union countries, is producing data on ageing only in aggregated form. All information on aged people over 70 is only in aggregated form. Disaggregated data is fervently needed, not only because the aged population is huge and increasing all over the world, but also because older people are a very diversified group in all aspects, on education, health, political opinions, hobbies, cultural inclinations, ethnicity, religion, social background, etc. The more there will be very old people, such as centenarians, the more also the differences between cohorts, populations and individual persons with their needs and choices will become evident.

One method to compare internationally countries and their development is created by HelpAge International. This method is called GAWI, Global Age Watch Index¹³. It was used for the first time in 2013 to rank the countries of the world according to the social and economic well-being of older

people using four domains: economy, health, education and working life, and age-friendly environment. Each of the domains consists of some chosen indicators, using only outcome indicators¹⁷. The data used is based on international statistics, research and opinion polls. Reliable data is scarce, but this is the best effort to find internationally accepted indicators on different countries. Economic data, for instance, is from the World Bank and OECD; health data is derived from WHO, and the more 'lightweight' indicators from recognised organisations such as Barro and Lee¹⁴ and Gallup¹⁵. Until now, 91 countries are covered by the Global Age Watch Index.

As to technology and ageing, we know that the health of older people as well as their education could be promoted, sustained and improved by technical aids and by the knowledge base of gerontechnology. The fourth domain of the index, age-friendly environment, would especially need conceptual differentiation from the specialties of health engineering and gerontechnology. Age-friendly environments should be built, but simple and usable indicators for good gerontechnological solutions are lacking so far, as well as reliable international comparisons.

LIVING ALONE AND CONSUMING

Living alone, with an increase in one-person households is a new megatrend all over the world¹⁶. It is a surprise to social scientists because humankind always lived in groups, communes, enlarged families and nuclear families. Now living solo is increasing everywhere and in all age groups, notwithstanding the local culture and traditional generational bonds. This phenomenon has been studied by OECD already in the 1990s, Nordic countries then taking the lead but also in Japan the proportion of people living alone is steadily increasing. In Nordic countries more than half of the older people are living alone. Also in Taiwan, older people prefer living solo¹⁷.

Living alone doesn't mean that people become lonely; only very few people really feel deep, devastating loneliness, for example, in Finland this is estimated to concern about 4% of the older population^{18,19}. Living solo increases the risk of poverty. In the European Union poverty it is at least two to three times higher in comparison with people living together in bigger households. However, these trends create challenges to all services and they have to be met. This means not only the development of social welfare or health services but also changes to the structure of whole societies and neighbourhoods. A person living alone doesn't need the big low-price packages of food when shopping, he or she cannot share the living costs with anyone and his/her

needs are dropped out of national family policies. When a person living solo suddenly is in need of help, this should be organised differently from a household where there are other people for the immediate help.

However, living solo is a positive challenge to gerontechnology, which should take into account trends like this in the developmental work and in projects for the future. Living solo also calls for modern, innovative service design in whole communities and societies to fulfil the needs of single persons. So far people just want to live at their own homes as long as ever possible; all kinds of innovations to facilitate this are welcomed.

There is another global megatrend showing that older people emerge as a growing market for consumption. The number of aged economies in which consumption by older people surpasses that by youth was 23 in 2010⁵, but in 2040 will be nearly 100; this will change local economies. Older people as consumers will be an important group in the near future. Today, the advertisements are targeted towards youth and adolescents and older people are nearly invisible. As a matter of fact the group 'aged' is represented in the fashion magazines and advertisements by people in their 40's and 50's instead of real people aged 70 or 80 with all their beautiful wrinkles telling stories about their experiences, joys and sorrows; about their real life.

As to consumption, a phenomenon called aspiration gap is emerging¹⁸. This is the gap between what one has, and can afford, and what one aspires to. There are people using consumption to express their social identity. This is not a new phenomenon, but the present scale of it is. How do older people place themselves in this respect? Older people have usually saved some money. They have seen wars and conflicts and known poverty or relative scarcity in their young adulthood. It is thought that young people are apt to lavish whereas older people are not, but in the modern world even this is changing, showing growing selfishness of older generations.

DO ICT GAPS LEAVE OLDER PEOPLE BEHIND?

The relationship of older people and information technology will grow in importance all the time. The central structures, services and information of modern states and communities are more and more going online. This process is rapid in many countries in the developed world but reaches inevitably the developing countries where older people are much less educated. Older people could be marginalised unless there are easy to use devices affordable to be bought. The role of gerontechnology in everyday life should be

increased in the modern world where also the input and resources of older people are increasing. Aged people are a diversified group – mass individualisation of products is needed.

Self-service is increasing, there are more and more automata and robots around. You have to use your online ticket in the bus to your work. You have to buy your railway ticket from a machine. You have to mail a parcel to your beloved one using a mailing automaton. You have to get used to online banking. In Finland there was a fight between older people and banks, when the banks declared that they would not release cash at all from people's bank accounts. So you couldn't get your own money from your own bank account because it was not expected that people would not use cash anymore, but instead use online banking and credit cards. When it was shown by an opinion poll of representative sample of people over 75 that only 1.6% of people over 85 use online banking, fortunately the Central Bank of Finland demanded all banks to change their policy²⁰. Not in all parts of the world the banks are as advanced online, but they should in any case take into account the situation of their clients.

However, the world is advancing all the time. The mobile phone has become a symbol of development, because the simple models are simple to use and people need connections. The inevitable need to speak and simple, lightweight technology formed a most successful alliance. According to an UNFPA report in 2012⁵, globally nearly two out of three older people can use a mobile phone although they do not literally own one. Using a mobile phone is also possible for people who are illiterate. Micro-enterprises emerged where old women offered services with their mobile phones for a small fee, sitting in the market places like living call-boxes.

There are studies about old people and information society challenges showing interesting results. It looks like internet use remains strongly correlated with age, education, and household income. This is clearly indicated by studies from the USA²¹ and EU²². One of the strongest patterns regarding internet use is by age group. In the USA there are results from 2013 showing that 44% of Americans aged 65 and older do not use the internet, compared with 17% of adults aged 50-64. In the EU 28% of households with people over 60 have internet access. In Finland 30% of people aged 75 or more have access to internet, but there is a very strong age gradient showing that only 6% of people over 85 are internet users. Similar proportions are found for education: 41% of adults who have not graduated from high

school are offline in the USA; 20% of rural residents say they do not need internet at all.

When asked for the main reason why older people do not use the internet or email, non-internet users give a variety of answers. Among current non-internet users, the most often cited reasons for staying offline relate to issues of relevance or usability. In the USA 34% of offline adults over 65 say that they just aren't interested in going online or don't need to, or that they are 'too busy' or think the internet is a waste of time. In Finland, 86% of non-internet users over 75 feel they do not need the services. But in the USA 32% mentioned usability-related issues, such as finding it too difficult or frustrating to go online, or saying that they don't know how or are physically unable. In Finland 70% of people over 75 expressed their unwillingness to learn and their feelings that the gadgets are too complicated. Some 19% in the USA and 33% in Finland mentioned price-related reasons.

BARRIERS OF DEVELOPMENT

To gerontechnology this is a big challenge: there is evidence that modern technology is not too expensive to many of the older people in the world but too complicated. Of course it should be kept in mind that the majority of older people in the world live near the poverty line or below it, in circumstances where a computer is not the first wish to get. But, as a matter of fact, all everyday technological devices are all the time becoming cheaper and smaller in size while at the same time there is a blooming garden of just the newest products with high price for those for whom these devices are part of their identity. Compared to simple mobile phones, computers and internet are complicated to use – better usability is a real target and should be taken seriously²³. But, the main barrier among older people are the attitudes, lack of positive experience, feeling that computers are strange and demanding, making older people feel they are stupid and old fashioned.

Many people in a decision making position may think that this kind of an age gradient where the older age groups are relatively non-skilled as to information society demands is a 'receding problem', but it is not. New generations are born in the digital era, they are this kind of digi-natives who will -so it is thought- master all the devices of today and in the future.

Also thinking of the coming groups of future older people, now in their 50's and 55's, if in case one of five of them in today's USA is not able to use internet –not to speak about the rest of the world- how many of them will have the cour-

age to learn new skills when much older? The development of the world's population becoming internet-literate will not happen just spontaneously, but it demands targeted, generational policies. Here we come to life-long learning²⁴. But the other side of the coin will be the complicatedness or simplicity of the user interface. The more easy to use the new innovations will be the more older users there will exist. Let us take an analogy of driving cars and car technology development. People do not need to understand the logic of car motors in order to be able to drive. As a matter of fact cars are today too computerized to be repaired at home. So people should be able to use technological devices and innovations in their everyday life without learning all the time new methodologies, new logics. Simple user interfaces are needed.

Ageism is one of the barriers of full participation older people are confronted with. In today's world, hard attitudes are common and part of the ageism is so hidden that it is in a way part of everyday political jargon. It is not exceptional to see newspaper headlines describing ageing of the population as a 'bomb' or 'shock', 'problem' being one of the mildest descriptions. In the labour market this phenomenon of age discrimination is best identified and fought against even in legislation etc. In the USA age discrimination has been regulated since 1967 by an Act which protects workers from age discrimination from 40 years on²⁵. So working life is protected but in the life thereafter only softer methods could be used. Eurobarometer in 2007 showed that 69% of people in the European Union think that being over 50 is a disadvantage in life compared with 5% seeing it as an advantage and 24% feeling neither alternative is right²².

INFORMATION SOCIETY DEVELOPMENT

The essence of the information society is not about computers, gadgets and wires or wirelessness. It is all about mental processes. The real revolution of production has happened, as it was from agricultural to industrial production. In the age of agricultural societies, people needed strong muscles to use shovels and axes, to build and to grow. In the industrial era an obedient, submissive labour force was in need in the factories. Now, in information societies the demands are different. Flexibility, innovativeness, creativity, learning and social skills, networking skills, languages; what are they but mental skills and capacities?

The intensification of working life and non-work has happened in the information societies as the intensification of consumption. The pace of life is rapid and heated. The vulnerability of people has

become more evident when working life doesn't need those not able to accomplish. The marginalisation process hits more and more people. The vulnerability of the information society is shown in the form of mental problems and use of drugs.

But, there is evidence that marginalization is starting ever earlier, even children of three years of age can be marginalized and left out of the digital world. "Given the large, cascading cost of mental health problems and the large benefits of positive mental health, and the fact that childhood and parenting play such an important role in this respect, the question arises about increasing the quality of parenthood" writes Rifka Weehuizen in 2005¹⁸. There will always be groups of drop-outs if this issue is not tackled by childhood- and educational policies.

RIGHTS OF OLDER PEOPLE

Are older people a vulnerable group in their respective societies? In the grouping of the UN, older people are one of the special groups, parallel with women, youth, migrants and indigenous people. In a recent high-level seminar of the European Union older people were placed side by side with Romas, illegal migrants, prostitutes and people with disabilities. Actually, the discussion between the NGO's of older people and those of people with disabilities has been difficult nationally and internationally. Disability derives very often from birth on, or it is caused by an accident. Ageing means multiple minor disabilities, and a slow process wherein hinders of communication, physical activity and/or mental processes are increasing. There are similarities and differences to

be covered. Until now, common language and common activities in this field are quite scarce.

Most older people in the world do not need any special attention. They work, live and love like all adults anywhere. However, no one can know his or her future as to end-of-life. This means that older people have to think and take care of their future.

But there definitely are groups of older people in need of special care and cure. Therefore the demand for a Convention of the Rights of Older People is ever growing among international NGO's and in discussions within the United Nations²⁷. This is encouraged by the process of ratifying the Convention of the Rights of People with Disabilities, which is in progress now. Should older people move forward here?

There is now in the year 2014 an Open-Ended Working Group in the UN of interested nations to elaborate the issue. Few countries are against, many promoting the Convention, but even more are hesitating, as the European Union with its Member Countries. The intention of the international NGO's in the field of ageing is also to influence the becoming of new Millennium Goal Decisions post 2015 when the actual ones will run out. Here the issue is whether ageing should be mentioned as such or would it be enough to mainstream ageing in all the policies. Until now this dilemma is not solved. Maybe it reflects the world's surprise in front of global ageing. Although it was foreseen for a long time, the preparedness is still not yet there.

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