Toward Age-Friendly Design

Document derived from the 4th International Longevity Forum on “The role of design and technology in an ageing society”

The role of design and technology in the context of rapidly ageing populations was the theme of the 4th International Longevity Forum held in Rio de Janeiro in October 2016. The Forum brought together a diversity of designers, philosophers, engineers, architects, gerontologists, geriatricians and other health professionals, government and private sector representatives as well as civil society organizations, with the intention to better elucidate a process toward age-friendly design and to open space for an ongoing age-friendly design movement.

Introduction

Design is the oldest form of communication. Everything that is expressed by human beings is design. It is a continuous and an evolutionary process that does not develop in isolation but within a context. Intrinsic to it, is a freedom from dependency. Design is not limited to material products. It is a process toward solving problems across the five "P" domains – people, place, products, person-centered services, policies.

“We get our culture from the results of our design.” George Burden

“Design is a continuous learning experience.” Gabriel Patrocínio

There is no singular ownership of design but neither is there sufficient democratization of it. Too often, it is user-centered rather than user-led. Too often, it is design for the middle rather than design for the edges. Too often, it is design for personas or idealized persons rather than real people. Too often, it is uni-, multi- and inter-disciplinary rather than trans-disciplinary in nature. Too often, is emotion seen as a side product to design rather than its leitmotif or driving-force. Too often, there is an impulse

“All of us should behave and be treated as full citizens.” Pedro Luiz Pereira de Souza

“Design should be about the exceptions, not about the averages.” David Sinclair
for big change rather than evolution. Too often, does design divide groups rather than unite them.

Designers need to be fully aware that every culture is an extraordinary reference of learning and creativity. There is a need to be both specific and generic in our design approaches. We need to think small and local but with scalability in mind. Design should enable and empower.

We should be aware that innovation without access is useless. The easily measureable should not be the sole driver of design. Hard to quantify human responses (such as fear, pride, affection) must be consciously factored into the process. We must search out the groups that are scantily considered.

**The Longevity Revolution**

Two people in the world celebrate their 60th birthday every second.\(^1\) By 2050, 30% of the populations of 64 countries will be aged 60 and over.\(^ii\) It will create a global pool of more than 2 billion older people and it will surpass the number of children under 15 years of age.\(^iii\) Already, there are more human beings in the world over the age of 60 than below the age of five.\(^iv\)

\[^i\] The Longevity Revolution has generated predictions of dire economic and social consequences based on an assumption that older persons constitute a growing burden for the rest of society. Recent analyses however, reveal that the fast-moving demographic transformations do not signal macro-economic catastrophe but that there must be an urgent rethinking of outdated perceptions about older adulthood and the life-course trajectory itself.\(^v\) The gift of longer life is one of civilization’s finest achievements and it generates almost limitless potential for overall human development.

The social construct of adolescence was largely a creation of the baby boom generation. Prior to the 1940s, there was an abrupt transition from childhood to adulthood. Gerontolescence or late middle age, a contemporary transitional phase delineated more by attitudinal and functional markers than chronological age, is now emerging.\(^vi\) It represents a unique and unprecedented stage of human development and embodies distinct features. Gerontolescents are reinventing how their stage of life is lived and viewed - in the same way that they did in their youth.

"In what world do we want to grow old?"  
Loïc Garçon

"It is unimaginable that this generation will experience older age like previous ones."  
Alexandre Kalache

"When I was born, life expectancy at birth in Brazil was 43 years. Today it is approaching 76. This is revolutionary."  
Alexandre Kalache

"We cannot create tomorrow as if it was a copy of today."  
Loïc Garçon

"Inclusive design is better design."  
Gabriel Patrocínio
Active Ageing Concept
Population ageing is coinciding with other converging and inter-dependent global trends that together are shaping our collective future. These dynamic forces impact every aspect of each individual life at all ages - creating an enormous range of opportunities as well as a long list of risks that cannot be considered in isolation.

The components of health, life-long learning, participation and security are fundamental "pillars" for effective strategic action on age-friendly design. The Active Ageing concept captures these key features in a positive and holistic vision of ageing in a rapidly changing world. Both as an individual aspiration and as a social goal, Active Ageing is framed within the current theoretical perspective of resilience - defined as “having access to the required reserves to adapt to, endure, or grow from, the challenges encountered in life". Its intention is to enable people to realize their potential for physical, social and mental well-being throughout the entirety of their life course and to participate in society according to their needs, desires and capacities - while simultaneously providing them with adequate protection, security and care when required.

The Active Ageing philosophy has found its most cogent and widespread expression in the worldwide Age-friendly Cities movement. It forms a significant part of the design response to the two defining demographic trends of the 21st century - widespread population ageing and urbanization.

The Fourth Industrial Revolution
The Fourth Industrial Revolution is producing profound, ultra-fast systemic shocks that require imaginative and continually adaptive human responses. Characterized by a hyper-connectivity between a vast range of components, the Fourth Industrial

“Old age belongs to all of us.” Marta Pessoa

"Resilience can be designed and built.”
Alexandre Kalache

“The urban space is as much about the psycho-social as the physical.”
Andrea Holz Pfützenreuter

“The two major reasons why the age-friendly cities project is so sensible - it is based on the principle of active ageing and the policy recommendations were developed bottom up, by listening to the voices of older people.” Sir Michael Marmot*

“Knowledge was the key asset for the 20th century, imagination is the key asset for the 21st.” Anthony Hilton**
Revolution is creating an unprecedented fusion of seemingly disparate new technologies across the digital, physical and biological domains.

These highly innovative collaborations, informed by unique real-time insights derived from an easy segregation, analysis and compression of data/mega-data, power the current Industrial Revolution. It is opening a wide door to many new drivers of change and much greater opportunities for the customization of products and services. It also signals a shift from "ownership" to "access", which in turn, is reconfiguring service delivery, dramatically reducing transaction/friction costs and producing a radical transformation in the nature of employment (e.g. Uber and Airbnb). It has been estimated that 60% of the occupations to be performed by the next generation do not yet exist. At the same time, it is predicted that 47% of present day jobs in developed countries could be at risk within the next two decades.

The speed and depth of the changes, the increased job insecurity, the imposed mobility, the growing need for multiple identities and the uneven ownership of the technologies necessitates that much more attention is given to the human and cultural disruptions. More than ever, there is a need for inclusive design approaches that enhance resilience, emotional intelligence, self-reflection, well-being and empathy.

**How to innovate on ageing**

Genuinely listening to the voices of real older persons in their context must be at the very core of the design process. "Design with us, not for us". Good design must open spaces for fresh protagonisms, challenge stereotypes, resist formulaic approaches, strengthen capacity for critical reconsideration (particularly in regard to linear and closed processes) and reflect on the use, value and inclusiveness of technologies. It must reach well beyond traditional partnerships.
Age-friendly Design Process

Older Persons as Protagonists: More real people (fewer averages or personas); recognition of vast heterogeneity in older age; pathways to inclusion; communication enhancement; respect for privacy/dignity; and greater ownership of design and own data.

Context: Gender; culture; physical setting; social integration/exclusion; cognitive and physical capacity; level of independence/autonomy; life history; social status; sexuality; emotional resilience; education; regulatory frameworks; human rights, inter alia.

Collaboration: Emphasis on trans-disciplinary (as opposed to inter-disciplinary) approaches; user-led rather than user-centered; identification of partners across a wide range; transcendence beyond specific skill sets; embrace of appropriate integrative technologies; valuing of low tech; building sustainable support networks.

Expertise: Openness; accessible language/vocabulary; emphasis on dissemination; awareness raising; sharing of ownership; ethics.

Process: Open structures; critical reflection on design methods and the use of technologies; constant re-evaluation, deconstruction and refutation; sharing of best practice, intergenerational perspectives; agile governance; measurement.

Enabling Actions: Effectiveness; simplification; scalability; resistance to "over-design"; interoperability; stimulate positive emotional outcomes.

Questions to consider

- How to identify and give voice to those with limited capacity to express?
- How to build an ethic that designs safety into lives without imposition and intrusion?
- How to avoid distortions based on on-line information that is still largely youth generated?
- How to avoid cognitive overload?
- How to devise regulation and legal frameworks in a world of exponential change when we are often only afterwards aware of the risks?
- How to be true protagonists of age-friendly design when the frontiers of technology are moving so fast?
- How to design today for an imagined future based on the experiences of the past?
- How to safe-guard human rights?
- How to ensure that age-friendly innovation brings generations and communities closer?
- How to resist the impulse to focus on radical change for its own sake?
- How to promote dialogues to enable creative actions out of simple elements within the context of complex situations?
- How to engineer societies where the mass of people retain feelings of self-worth, control and purpose?
Conclusion
There is a strong need to genuinely democratize and to spread the ownership of design. Opportunities for greater inclusiveness of population sub groups, more permeable process and more tailored products and services and more peer-to-peer solutions are presented by intelligent processes, the efficient collection/collation of segregated data/mega-data, inter-connectivity and the new technology-enabled platforms.

Real older people in the context of their lived experience should be the starting point and the driving force of all age-friendly design. The new technologies have the capability to offer all individuals instant call-up expertise and the potential for choice at every stage of the design continuum.

There must be full recognition of the enormous heterogeneity of older persons. Older people tend to be less like each other than younger people are to each other, as they have had more time to accumulate differences. In addition, the emerging cohorts of older persons differ significantly from their antecedents.

Human emotion must be placed at the core of age-friendly design. Much more design focus should be given to the human trauma caused by radical and exponential change. We must concentrate on enhancing markers of well-being (such as resilience, emotional intelligence and sense of control) across the entirety of the life course. We must develop ways to strengthen through design such quintessential human qualities as self-reflection, well-being, empathy, compassion and a global culture of care.

We need to stimulate solidarity between the technology-rich and the technology-poor to avoid greater class, inter-generational and international fragmentation. Digital exclusion must be addressed in all settings. We should give consideration to a type of Marshall Plan to technology-poor communities and countries to enable them to harness appropriate design and to leapfrog development.

"It is not only learning about computers, it is about learning to overcome difficulties." Tom Kamber

"We have to put genuine power back into the user’s hands." John Mathers

"Everyone has intuition and should make full and total use of it." Gabriel Patrocínio

"A robot may not give love but it may give autonomy to those who can afford it." Ina Voelcker

"If you design better for older people, you design better for all." John Mathers

"Ethical action is not inherent in technology." Luiz Alberto Oliveira

"Share, empower and monitor." Tom Kamber
We must move beyond a rigidly commercial model of design (e.g. look to such concepts as an Uber model for volunteerism). We must focus on technologies that stimulate imagination, creative process and meaningful social interaction across all ages.

The role of age-friendly design should not be to design ageing away. There should be recognition that there is intrinsic value, essence and experience at all stages of life. There must be room for many levels of decision-making about what enhances or diminishes our humanity.

**Age-friendly design should be built on the four converging fundamentals of health, life-long learning, participation and security across the entirety of the life-course.**

**Health:** Technology is changing virtually every aspect of the healthcare continuum. From immersive virtual reality for pain relief, videogames to treat ADHD and depression to big-data analytics, gene editing, nanotechnology, 3D printing of live tissue and the hacking of cancers. While new medtech is changing some cost structures and extending some reach across groups (e.g. emerging mobile devices that can reduce the cost of an ultrasound from $80 to $2\(^x\)), the real health needs of the majority of the world’s older population remains woefully under-considered. Inadequate design is excluding entire sections of the population from the benefits of technology.

**Life-long Learning:** Increasingly rapid obsolescence means that everyone at all stages of the life-course must reprogram themselves for constant adaption and renewal. On-going health literacy is essential for self-care, on-going financial literacy is necessary to manage income and expenses and on-going technological literacy is required to maintain relevance. The OECD considers continuous learning to be one of the most important components of human capital in an ageing world.xii It is not only access to information that is important but the acquired skills to discern, evaluate and translate that information.

**Participation:** Age-friendly design must promote engagement in any social, civic, recreational, cultural, intellectual or spiritual pursuit that brings a sense of meaning, fulfilment and belonging. The active involvement of all citizens at all levels of decision-making keeps democracy robust, makes policies more relevant/responsive and empowers individuals. Engaged individuals create social capital that is consistently associated with health/well-being and higher labour participation contributes to collective prosperity.

**Security:** Security is the most fundamental of human needs (and rights) at all ages. We cannot fully develop our potential in the
absence of it. Insecurity has a corrosive effect on individual physical health and emotional well-being as well as the collective social fabric. Age-friendly design must engage with the protection of older adults and facilitate the emergence of an authentic global culture of care. Care-giving must be reconfigured as a shared responsibility.

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*** Klaus Schwab, Founder/Executive Chairman of the World Economic Forum.

**** Sheila Sen Jasanoff, Founder/Director of the Program on Science, Technology & Society, Harvard University.

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ii Ibid.


iv Ibid.


vi Kalache A, The Longevity Revolution; Creating a Community for all Ages, Government of South Australia; Department of the Premier, SA; 2013.


viii Ibid.

ix Arturo Bris, World Competitive Centre, IMD Business School, Switzerland; 2016.


xi Qualcomm & Trice Imaging; 2016.

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