ITU Podcast Series: Technology for Good
Episode 12 – Healthy ageing in a digital world

Opening soundbites:

Older adults are the lifestyle leaders and indeed in many cases the guinea pigs of what we think we can do with technology, how we can manage, motivate and monitor their lives every day.

Joe Coughlin - MIT AgeLab

The Silver Economy is estimated at 17 billion. This provides an opportunity for ICT industry if they develop specific and adapted products that take into consideration the needs and requirements of the specific end users.

Roxana WIDMER-ILIESCU, Senior Programme Officer - Digital Inclusion, Development Bureau. ITU

Everybody in the world should have the opportunity to experience the optimal level of intrinsic capacity and functional ability. That's our vision for the Decade of Healthy Ageing.

Dr. Jotheeswaran A Thiyagarajan - Epidemiologist, Ageing and Health Unit - World Health Organization, Geneva (Switzerland) - WSIS Hackathon - Aging better with ICTs

VO:
I'm Max Jacobson - Gonzalez from ITU - the United Nations specialized agency for Information and Communication Technologies. Welcome to Technology for Good, a monthly podcast series exploring how technological innovations are contributing to the health and welfare of the planet and all its citizens. In this episode we're taking a close look at how older members of our population can and will benefit from technology and what obstacles and opportunities innovators,

NGO's, governments, international organisations and other major players are facing when stepping up to challenge of addressing this ever-growing part of our population,

We live in an ever-modernising world, in which trends are often led by how the latest generations integrate new technologies into their lives. However, this is all set to change, as ageing becomes a megatrend. Around the world birth rates are declining, while people are living longer, healthier lives. For the first time in human history, people over the age of 60 outnumber those under the age of five. A population predicted to reach 2 billion by the year 2050.

To recognise this fact and prepare for a new reality, the World Health Organization and the United Nations have launched the Decade of Healthy Ageing. From 2021 to 2030, this decade will contain milestones related to the Sustainable Development Goals. Why is such a focus on ageing needed? Already, most of the 1 billion people over the age of 60 live in low- and middle-income countries, many without access to the basic resources required for a dignified life. Technology can have a major part to play in ensuring that this population does not go underserved, but that will only happen if both technology creators and policy makers are aware of and act on this dramatic shift in the global demographic.

We're going to hear from a number of points of view, and to kick this off here's Michael Hodin, CEO of the Global Coalition on Ageing, the world's leading business voice on ageing-related policy and strategy.

Michael Hodin CEO of the Global Coalition on Ageing

We have a megatrend of ageing. Two parts to it. Over the next couple of decades, there will be two billion of us on the planet over 60. Even more profoundly, there will be more old than young as every single country modernizers across the planet. And so, the

importance of a healthy and active ageing is recognized by ITU and WSIS, by the WHO, by the UN itself. Innovation in health care, and particularly with ICTs, is utterly critical for a healthier and more active aging. That itself is essential for economic growth and market development across all of society. The great need for a healthier and more active ageing, from Alzheimer's and neurological challenges to bone health, adult vaccines to cardiovascular. And we also know that there is a critical element with respect to an active ageing. And we know there, as well, that the idea of an active and healthy ageing are interconnected and promoted by technology.

VO:
Roxana Widmer - Iliescu, Senior Programme Officer for Digital Inclusion in the ITU's Telecommunication Development Bureau tells us about how the ITU is approaching the mega trend of Ageing through their most recent report on the subject.

Roxana Widmer - Iliescu, Senior Programme Officer - Digital Inclusion, Telecommunication Development Bureau. ITU

The report is entitled Ageing in a Digital World from Vulnerable to Valuable and is the very first ever report to be produced by ITU that raises awareness on the importance of being prepared to respond to the needs and requirements of ageing population. And highlight the role that ICT can play in building inclusive societies where older adults, if digitally knowledgeable - so, included - are active participants and valuable contributors to social economic development in all countries. The good news is that our world is digital and information and communication technology, if developed in accessible formats that means with the universal design in mind, are not only powerful enablers for empowerment of all people, but also for the creation and building of inclusive and age friendly environments suitable for healthy life condition of today's and tomorrow's older adults.

VO:

Ageing affects all areas of life. But one of the biggest areas of focus for an ageing population is health. We may be living longer, but how can we ensure that older people maintain a high quality of life and health, be that physical or mental. Phyllis Ferrell is the Global Head of External Engagement for Alzheimer's disease and Neurodegeneration at Eli Lilly & Company, an American pharmaceutical company. Here she is addressing the need for innovative technologies within the health industry.

Phyllis Ferrell - Global Head of External Engagement for Alzheimer's disease and Neurodegeneration at Eli Lilly & Company

Aging is success, right? The reason our populations are ageing is because we've managed the diseases that prevented ageing of the past. All of our societies are headed this direction. It's very, very predictable. And we're working very hard for health care solutions, diagnostics and therapeutics, and and quite honestly, we've made amazing scientific breakthroughs. Science is moving so much faster than the healthcare ecosystem is moving. And I scratch my head, as well, to say, are we really that much more complicated in health care than in maybe the entertainment industry or even look at what we've accomplished over the last 12 to 18 months with this pandemic? We know how to move fast. And technology is something that we should be using consumer driven, but we also need to be using it in our health care systems because we are not well prepared to handle this aging society. It's going to cripple our health care systems, our social systems if we don't find a way to take care of our brain health. And actually the science is there, but the technology isn't. Digital health is about digital technologies that could be treatments, but it's also about digital technologies that just help our ecosystem work better so we can take care of people better as they age.

VO:

We'll hear more from Phyllis later, but now, let's hear from Amal Abou Rafeh, the Chief of the Programme on Ageing Unit at the United Nations Department of Economic and Social Affairs, otherwise known as UN DESA. Amal asks the question: who are these older people? Is our image of an older person built on outdated and unhelpful stereotypes? Amal speaks on the diversity that exists within old age and how our current impressions of old age may be failing this growing population.

Amal Abou Rafeh - Chief of Programme on Ageing Unit UN DESA (from WSIS Hackathon - Ageing better with ICTs)

Take a moment to visualize an older person that you know. Who did you see? Was it an older woman sitting on a bench in the park feeding pigeons? Was it a 65 year old retiree who wants to continue to work because he's looking for a sense of self-worth, dignity and fulfillment? Was it an older woman working on food carts on the street because she knows if she doesn't she won't be able to support herself? Was it a bedridden older person in a nursing home who needs help in daily activities? Was it a retired doctor or nurse who ironically are members of an age group that was hardest hit by the pandemic, who led to the call for help during this crisis? To me, it was Lillian Pollack. I met her when she was 100 years old, and I remember her flirting with my boss at the U.N. telling him that she doesn't mind dating a 60-year-old as long as his face is easy to look at. I want you to keep in mind that there's a diversity in old age that we just can't make assumptions about what old age looks like. We have to acknowledge this heterogeneity amongst older people. They have different needs, different capacities, different preferences, different health and social and economic status. And if public policies don't recognize that, we will fail them. Now, covid-19 has amplified digital inclusion issues. I mean, we know this: the telehealth, education, the world of work, social and mental well-being, and many of these changes are here to stay. And we know that digital divide and digital literacy are critical issues across the

barriers to digital inclusion of older people. Older Americans will spend 84 billion dollars on technical products by 2030. But only five percent of the technological images in the public sphere include or reflect older people, and when they do, they often show a younger person doing something that's technological for an older person sitting next to them or teaching them how to do it.

VO:
The World Health Organization is one of the founding partners of the Decade of Healthy Ageing. Dr. Jotheeswaran A Thiyagarajan, an Epidemiologist at the Ageing and Health Unit at WHO, tells us more about how digital technology, and changes in the way we use data, can support our future health.

Dr. Jotheeswaran A Thiyagarajan - Epidemiologist, Ageing and Health Unit - World Health Organization, Geneva (Switzerland)

I think from WHO's side, the most important point is the transformation. From 2000 there was a big shift in the way the healthcare is being organized. For example, when I take my child to a pediatrician, the first thing the pediatrician will do is, OK, how is the weight of the child? How is the height of the child and whether the nutrition parameters are correct? So, the pediatricians looks into how well the child is growing. But when I take my mother to a doctor, the first question is, is your mother have diabetes?
Is your mother have hypertension? You know, that's an important point because the doctors are just seeing older people as someone coming with a ball of disease. So, for WHO, we want to change this paradigm. We want to see older people in the same way we see a child. Why don't we think about how well the person is ageing? Because it's not the same rate in which everybody is ageing. But the doctors don't see this point when you take an older person to see them for medical help. But the key to making this is developing that framework of monitoring. Using a digital technology, you can

actually pull the data that's coming from different sources. I think there are a massive amount of data that's being collected. There are sensor devices that is a mobile GPS information being collected, an iPhone, for example. It copies the number of steps. But the key thing is that we have to bring this data in a more predigested form and give it to the health care practitioners to take actions.

For example, I see my iPhone and I see a number of steps that I can go and do. What can I do about it? What is this telling me? Is it telling me that I will not get older in a healthy fashion or I'm going to get deteriorated in a few month's time. So, there are a wealth of information being collected in digital form. But this is not being put in a framework that's useful for health workers or to help older persons to take actions and take responsibility for their health. Everybody in the world should have the opportunity to experience the optimal level of intrinsic capacity and functionability. That's a vision for the Decade of Healthy Ageing as well.

VO:
As something we may all hope to experience, improving the technology, policies and the quality of life for an ageing population should be something we are all concerned with. Joe Coughlin is the Director of MIT's AgeLab, a caregiving research initiative, tells us more.

Joe Coughlin - MIT AgeLab

There's an underlying assumption that the technologies that we are seeing today and those that we will see in the future are about being, shall we say, helping older adults. Keep in mind, technology never, ever helps us do what we do every day. Technology changes how we live, changes how we provide care, and changes how we see quality of life in the future. As we look at technology to help older people, which, by the way, is probably the only class that all of us aspire to and hope that we will be part of. So as we think about how ICTs will help that, we should very much realize that we

are profoundly changing the trajectory of how we live. Technology is part of an infrastructure that both reflects and reinforces a choice of how we choose to relate to each other, how we provide care, how we receive care and the like. Older adults, if you will, are the lifestyle leaders and indeed in many cases the guinea pigs of what we think we can do with technology, how we can manage, motivate and monitor their lives every day.

VO:
The Global Coalition on Ageing has estimated that the so-called Silver Economy is worth 17 trillion US dollars, and this is only expected grow alongside this upward moving demographic trend. As Joe Coughlin pointed out, this is a demographic we all want to be a part of. And as it is one that will direct much of the next few decade's industries of technology and health, we wanted to hear about some of the latest innovations.

First, let's hear from Kyle Rand, the CEO and Co-founder of Rendever, a virtual reality technology designed to build community and increase care home resident engagement through positive shared experience.

Kyle Rand - CEO and Co-founder of Rendever

15 cigarettes per day. That's the best comparable estimate of the impact that social isolation has on someone's health. In the ageing population that leads to a 50 percent increase in dementia and a 30 percent increase in mortality rates. Loneliness may not be a health issue that the eye can see, but the terrible effects are widespread, and it's devastated the senior care industry for decades. It's something I saw with my own grandmother when she moved into senior living and passed away just a few months later. Since 2016 our mission has been to overcome social isolation through the power of virtual reality experiences. We fundamentally believe that

the basis of all human connection is shared positive experiences. So, our platform is designed specifically to stimulate conversations, build trust and help people develop meaningful relationships. Now, how do we do that? A group of older adults will come together, put on virtual reality headsets, and participate in fully immersive experiences as a group. Once a session begins, a world of endless possibilities opens up to them. They can check off bucket list items like skydiving, tour famous cities and landmarks like the Eiffel Tower, bring family memories to life with a nostalgic visit to their hometown and so much more. They can even stay connected to family living at distance through our family platform, which allows family members to record special events like weddings, graduation ceremonies, birthday parties, and bring their loved one there through VR. They talk about what they're seeing, how they're feeling, memories that remind them of the experience and ultimately build connections with one another in an organic way. We've seen a dramatic decreases in depression, the active experience of pain, reductions in caregiver guilt and improvements in a myriad of quality-of-life scores

VO:
So, virtual Reality can act as a catalyst for conversation, happy memories and even as a way to stay connected. Well, here's an innovation which focuses on the financial health of older adults. Stuart Jay Olshansky, Professor in the School of Public Health at the University of Illinois, tells us more.

Stuart Jay Olshansky - University of Illinois

So, in 2018 we had good friends, Shirley and David, both age 65, they sought the counsel of a wealth management adviser for retirement. The adviser ran a computer simulation, advised them both to plan for survival to age 90, told them to buy expensive long term care policies. This kind of advice influenced every aspect of their retirement plan, and variations on this generic, impersonal approach to financial planning is common today. WellSpan financial

partners, of which I'm affiliated, has revolutionized financial planning for people of all ages, which of course needs to be done by both young and older individuals, by creating hyper personalized assessments of health span and lifespan.

We generated for David and Sherry a WellSpan score based on aging science using the mobile device already in their pocket. What did we find? Cherie's lifespan and health span are likely to extend into only her early 80s. She definitely needs long term care insurance. David's lifespan and health span extend into his 90s with a 50 percent greater chance of surviving healthy to age 100 than the general population. No need for long term care insurance for him. Both of our conclusions run counter to the advice given by most advisors.

How did we come to these conclusions? Our analysis assesses the social determinants of health, their biological determinants of survival. We analyzed their genomes and discovered that David carries two genes that make him a likely super-ager. And we deployed machine learning and A.I. to advise them on how to maximize both their health span and their lifespan. We used facial analytics to assess the biomarker of face age, further documenting the likelihood that David will live a long and healthy life all done in under ten minutes using a cell phone.

Simple as that, the consequences of being wrong on financial planning can be catastrophic. The benefits of getting it right changes the face of retirement, the world over. Welcome to the 21st century of financial planning.

VO:
Let's hear again from Phyllis Ferrell, the Global Head of External Engagement for Alzheimer's disease and Neurodegeneration at Eli Lilly & Company, about brain health, and how we need to think differently about our approach to cognitive longevity.

Phyllis Ferrell - Global Head of External Engagement for Alzheimer's disease and Neurodegeneration at Eli Lilly & Company

There is traditional innovation when it comes to therapeutics and medicine. But one of the things we know about brain health and what science has told us, now that we can actually see the pathology, the Alzheimer's pathology in a living brain, we know that the pathology that we believe causes Alzheimer's disease starts 10 to 20 years before symptoms. Now, I just want to pause and for us to think about that right now. That means plaque could be building in our brains 10 to 20 years before symptoms. And there are innovations that allow us to see that pathology. But the most important thing is actually for each of us to know our own brain. And so where we see digital technology becoming incredibly important is in our ability to measure our own brain health, to keep track of our own cognition. You know, we go to the doctor every year and we take our blood pressure and we have blood drawn. We might even have a fasting blood glucose. But when was the last time you actually did a test of the most vital organ in your body? I would say most of us have probably never been to the doctor and had the doctor say, let's do a cognitive test, let's see how you're doing. And let's do that every single year, maybe more times than once a year, because the most powerful data is our own. It's our own longitudinal data. And the beauty of digital technology is it allows that task to be shifted from a very expensive resource and our health care system to something that's much less expensive, whether that be proctored in a health care system. Or even better yet, as consumers, we just take care of our own brains. We self-administer these cognitive tests at home. And digital technology allows us to do that, it allows that data to be put into an electronic medical record, and it allows us to track ourselves and our progress. And it's just really exciting to me that the technology is here and ready. What I think we're struggling with is how do we adopt it into our health care systems, because right now this is just not something that we think about.

VO:

The aim of the Decade of Healthy Ageing is for all ageing persons to be able to live with dignity and equality and in a healthy environment. Digital technologies can dramatically improve the lives of older adults, and as we have heard from our speakers, there is both an awareness of the need to invest in and make accessible such technologies, but also to keep innovating and bringing new ideas to the table that match the pace of growth of the population and the developments of science.

Now for some final words on the subject. First, Roxana Widmer- Iliescu, from ITU's Telecommunication Development Bureau brings us some of the incredible statistics around Ageing.

Roxana Widmer- Iliescu, from ITU's Telecommunication Development Bureau

In 2018 life expectancy in Europe, for instance, was 81 years. Babies born in 2000 will have an average lifespan of 100 years. In 2020 there were an estimated 727 million people aged 65 years old in the world. And that number is projected to double to 1.5 billion by 2050. Globally the share of the population aged 65 years or older is projected to raise further to 16% in 2050 when it's expected that 1 in 5 people worldwide will be aged 65 years or older. Building multigenerational workforces and giving older employees greater opportunity to work could raise GDP per capita by 19% over the next three decades.

VO:
Here's WHO's Dr. Jotheeswaran A Thiyagarajan.

Dr. Jotheeswaran A Thiyagarajan - Epidemiologist, Ageing and Health Unit - World Health Organization, Geneva (Switzerland) (from WSIS Hackathon - Aging better with ICTs.)

Many people, when they get older, they don't want to be put in an institution. They want to age in their own home, and they want to have a life they continue throughout their life over time. So, this is very important because at some point of time, the human plasticity has a limit. Beyond that, we cannot stretch it. However much of health care interventions we do, at one point in time we all will experience a decline in our health. But with the help of digital technology, they can still maintain the health. They can still move around. They can get help through digital technology to buy the things that they wanted and they can still remain in their home. So looking into solutions that help the older people to age in place is definitely an important area for WHO to support.

VO:
And finally, Amal Abou Rafeh, the Chief of Programme on Ageing Unit at the United Nations Department of Economic and Social Affairs with a call to action for all of us to recognise the importance of this issue, and to keep our focus on the human rights of older people.

Amal Abou Rafeh - Chief of Programme on Ageing Unit at the United Nations Department of Economic and Social Affairs

Imagine that by 2030, which is the deadline for the Sustainable Development Goals globally, older people are going to outnumber youth. This is the future, and I encourage you all to take part in this to build forward better for older persons. This means that we have to make sure that this work does not stereotype older people. It does not discriminate against older people because of their age. We have to make sure that we not only address the challenges, but also the opportunities that older people bring into this conversation. And most importantly, we have to ensure that digital products, policies and practices comply with human rights standards and protections for older people.

VO:
Well, that's all for this episode. As always, we'd love to hear from you about the subjects you would like us to explore, and what you think about the discussions on each topic we cover. So, write to us at podcasts@itu.int and visit our website at www.itu.int

We look forward to continuing to explore the technology that plays an intrinsic part of our everyday lives and discovering which technological developments can be utilised for good on the road to connectivity for all.

If you've enjoyed listening to this programme, please don't forget to subscribe to ITU podcasts. You can find us on Soundcloud, Spotify, Apple Podcasts, and more, as we try to dig ever deeper into how technology can truly serve the greater good for all the residents of our planet.

For Technology for Good and ITU, I'm Max Jacobson-Gonzalez.

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