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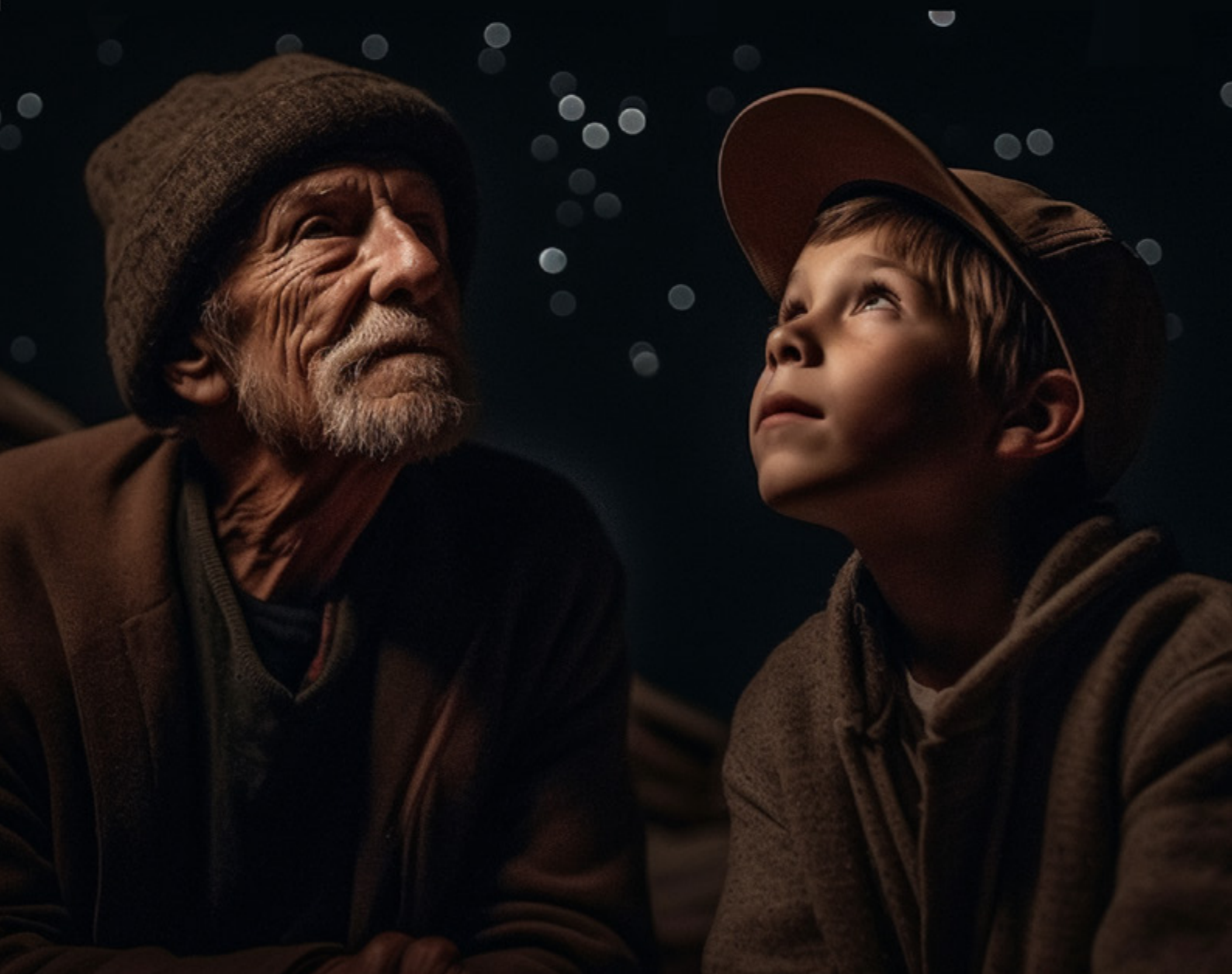
Living Beyond Limits:

The Age of Healthy Longevity



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The Age of Healthy Longevity

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Foreword

During the transformative breakout session of the Ecosystems 2030 Summit, which took place on 04 May 2023, led by Jeroen Tas, Associate Partner at IMPROVED Corporate Finance and Former Chief Innovation & Strategy Officer at Royal Philips, the profound impact of extended human lifespan and ageing societies emerged as a pivotal theme for our times.

The session, generously sponsored by IMPROVED Corporate Finance, was filled with an impressive cohort of over 100 leaders and visionaries. C-level executives and experts from some of the world's most influential organisations (including Google, Siemens, Microsoft, Airbus, Toshiba, SAP, PepsiCo, among others) came together with their diverse perspectives and deep wells of knowledge to engage in a conversation about a future defined by extended human life. What emerged from this dynamic exchange of ideas was a clear vision of the opportunities and challenges we face as we stand on the cusp of this transformative era. This report is a testament to that vision. It synthesises the wisdom, insights, and innovative ideas generated during the session into a cohesive narrative, weaving a roadmap for the future where longer, healthier lives are the norm.

We are entering an era characterised by ageing populations and a significant extension of the human lifespan, thanks to rapid advancements in healthcare, technology, and our understanding of human biology. This is not the stuff of science fiction. It is a reality we are collectively crafting, one that promises immense opportunities while at the same time posing significant challenges.

This report dives into the realities of extended lifespan, exploring its implications across multiple facets of our lives. From healthcare systems to financial planning, family structures to communities and social structures, and retail consumption to housing and mobility needs, this report seeks to understand how a demographic shift of this magnitude will reshape our societal norms and systems.

At the heart of this report is the concept of 'healthspan' – a term reflecting not only the length of life but the healthy life, aiming at adding quality to those additional years. As we delve into this theme, we will examine how our current healthcare systems must adapt and innovate to focus on proactive health optimisation rather than reactive disease management.

The narrative that unfolds is one of change and adaptation but also enormous potential. We highlight the need for multigenerational communities that nurture interaction and support across age groups, the shift to multi-stage life models that accommodate extended participation in the workforce and redefine retirement, and the crucial role technology will play in this new paradigm.

This report is a call to action for all stakeholders – policymakers, healthcare providers, financial institutions, technologists, urban planners, educators, and individuals – to look beyond the immediate horizon and prepare for a future defined by longer, healthier lives. Our challenges are complex, yet the vision of a society that manages and thrives amidst such change is compelling.

As you embark on this journey through the report, we invite you to contemplate the diverse aspects of this impending reality, reflect on its implications, and actively participate in the conversation about our shared extended future. We encourage you to join the discussion in our LinkedIn Group 'Living Beyond Limits: The Age of Healthy Longevity (ES2030)' where you can connect with others who share your interest in this topic, engage in stimulating conversations, and exchange ideas and insights.

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Introduction

According to projections, children born from 2019 onwards are expected to live approximately a decade longer than Millennials.[1] With the relentless pace of technological advancement, particularly in converging areas like biotechnology and artificial intelligence (AI), we can expect lifespan to be further extended. However, as societies grow wealthier and female participation in the labor force continues to rise, populations in many countries, including Japan,[2] China,[3] and some European countries,[4] record a substantial fall in birth rates.[5] In mostly rich countries, populations will fall by 1% or more between now and 2050.[6] At the same time, the divide is widening between those that live long and happy lives and those less fortunate. Significant life expectancy differences exist across different geographical locations, even within individual cities and nighbourhoods, already causing marked socioeconomic tension within societies.

In this context, it is critical to promote extended healthspan, ensuring individuals live healthier lives for longer periods. Concurrently, the productive period of individuals – their work spans – should also expand. When life, physical and mental health, education, and work span converge harmoniously, it will help us address the impending socioeconomic, pension, and care crisis. This begs a thorough rethinking of our societies to address significant changes required in education, work, housing, healthcare, social care, pensions, finance, and wealth management. We must reimagine our communities in a world where we live longer and the elderly represent a substantially larger share of society.

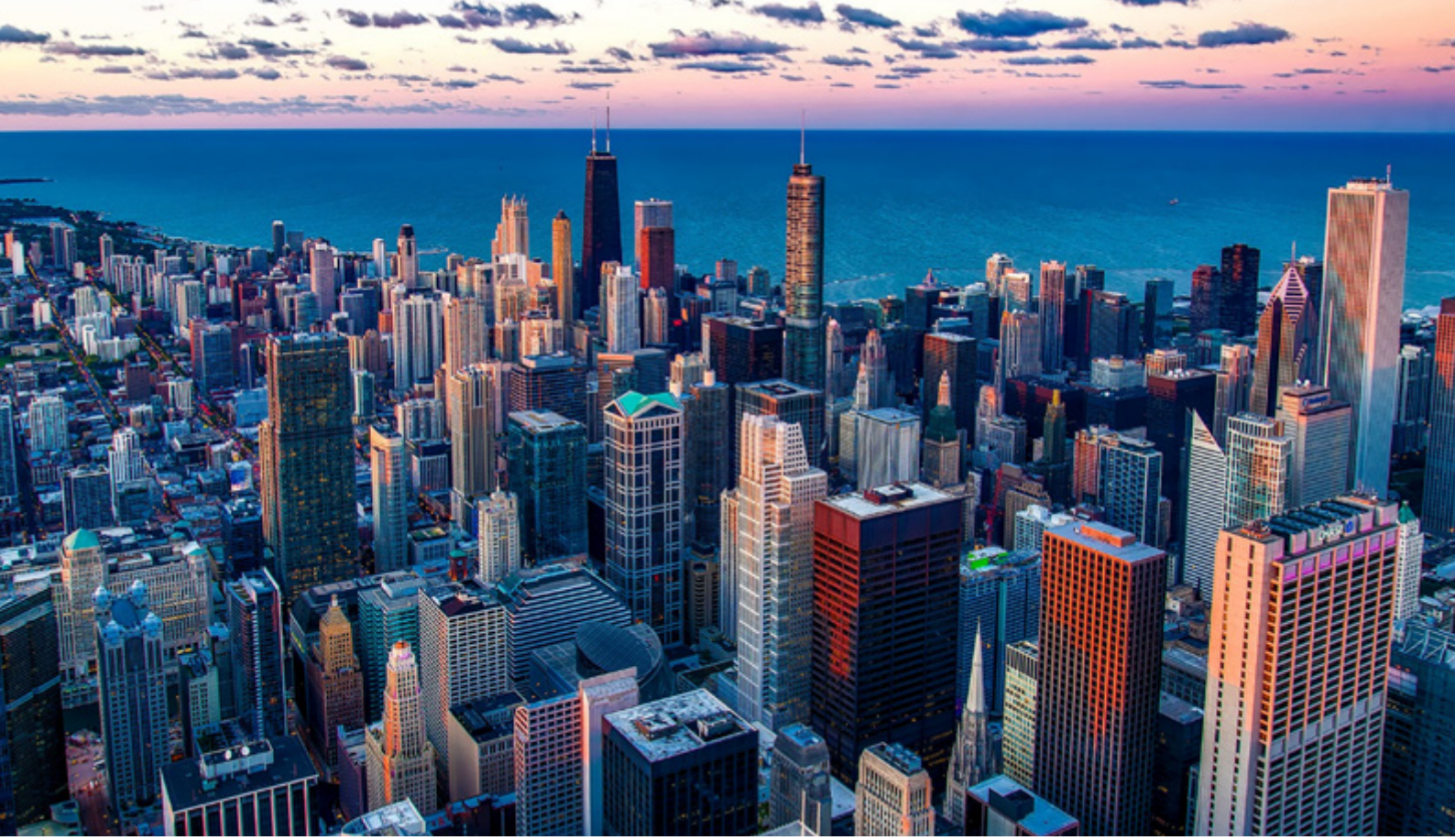
Technology and digital ecosystems offer opportunities to support individuals leading long and fulfilling lives. We will explore what initiatives can be taken to better understand the implications of those trends and how to address the associated challenges and opportunities.

1

What are the big demographic shifts?

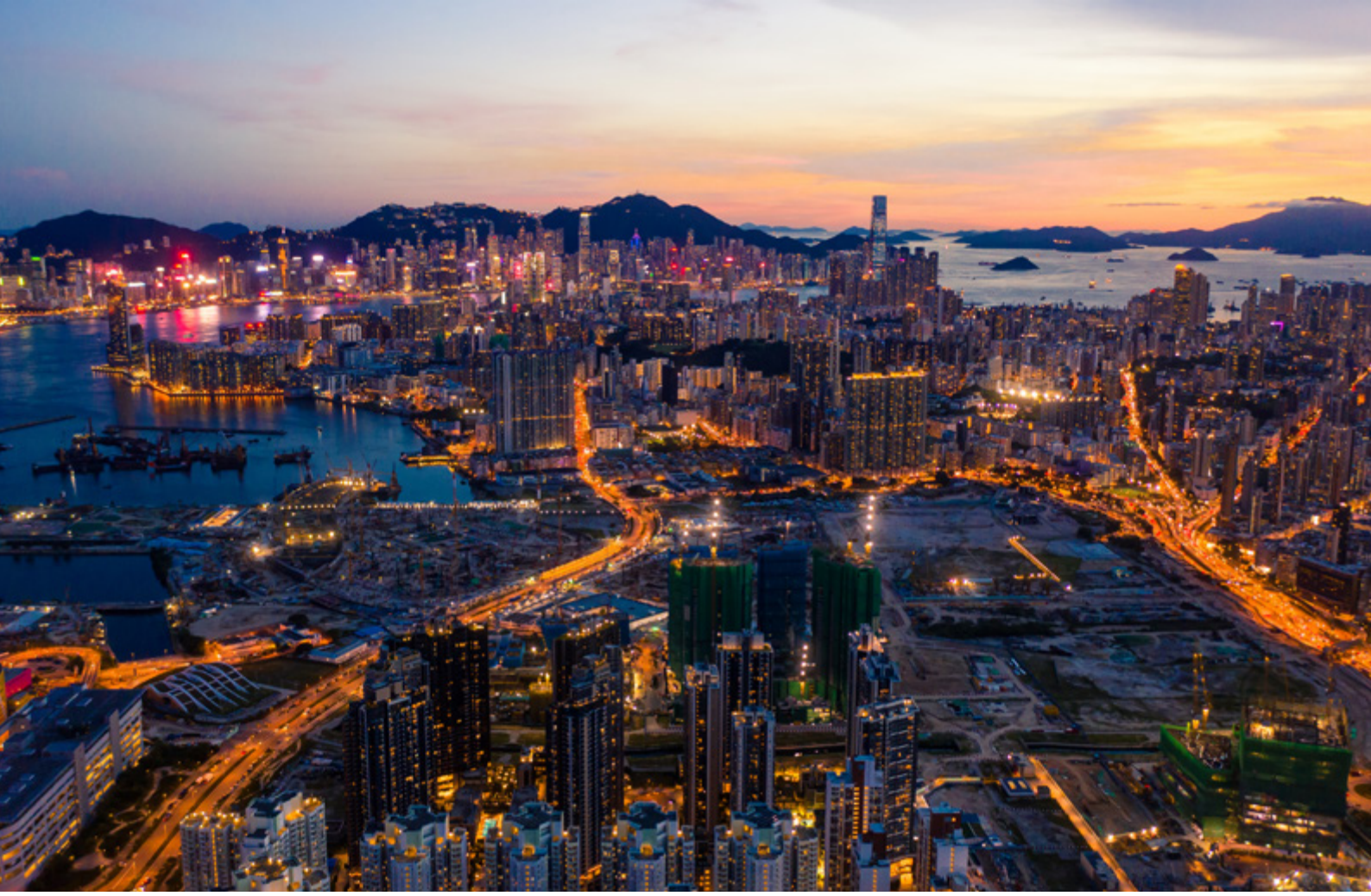
In April 2023, India's population reached 1.4 billion, surpassing China's.[7] India has a relatively young society, while China's population has started to decline. Despite the record numbers in population, both India and China's birth rates have fallen below the replacement level of 2.1 children per woman, which is required to maintain a constant population level.[8] The average woman in India is expected to have 2.0 children in her lifetime versus 1.6 in China.[9] In China, the growth rate has slowed down in recent years and women are having fewer children than their mothers had, especially in regions where women's labour participation and education are relatively high. In other countries, such as Japan,[10] and some European countries,[11] birth rates have also fallen below the replacement level.

Two-thirds of the world's people live in countries where the population is flattening or falling and where the total fertility rate is below the replacement level. As of 2000, the global fertility rate was documented at 2.7 births per woman, a figure sufficiently above the stability threshold. Today, this fertility rate has dropped to 2.3, exhibiting a trend of continuous decline.[12]



In 61 mostly rich countries, populations are expected to shrink by 1% or more between now and 2050.[13] About half the world's projected population growth between 2022 and 2050 will occur in just eight countries; five are in Africa (Congo, Egypt, Ethiopia, Nigeria, and Tanzania) and three are in Asia (India, Pakistan, and the Philippines).[14] The U.S. Census Bureau estimates that by 2060, the number of people 85-plus will have tripled compared with 2017, and the country will have half a million centenarians.[15]

"THE CURRENT DEMOGRAPHIC TRENDS ARE LEADING US INTO A FUTURE CHARACTERISED BY SLOW POPULATION GROWTH, DECLINING FERTILITY RATES, AND AN ACCELERATED SHIFT TOWARD AN AGEING GLOBAL POPULATION."



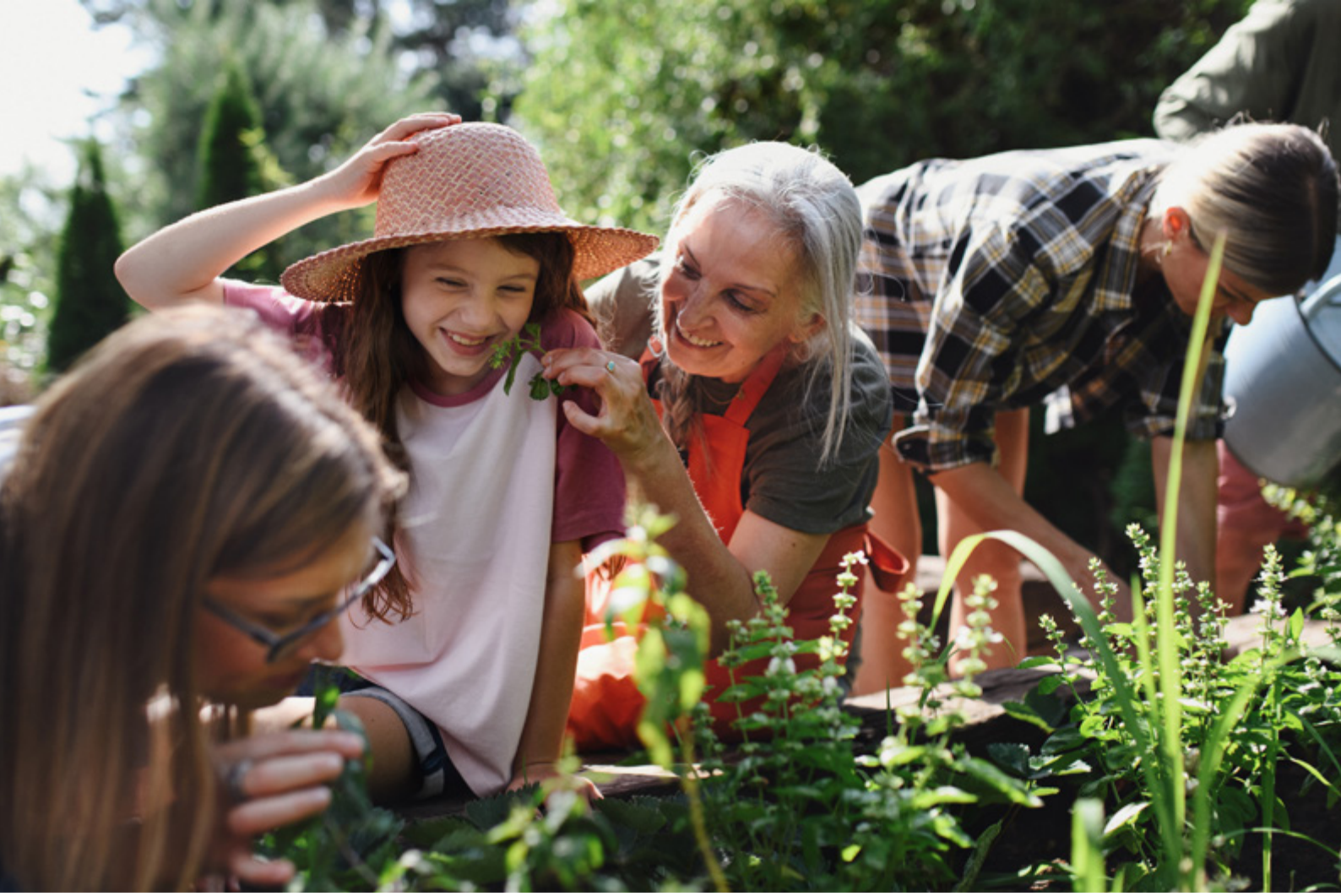
The current demographic trends are leading us into a future characterised by slow population growth, declining fertility rates, and an accelerated shift toward an ageing global population. These demographic changes will have significant implications for societies worldwide. With fewer children being born and people living longer, we will see a growing ageing population requiring care but fewer people to support the shift. On current course and speed, most Western economies will need to increase active participation in the workforce to sustain economic growth and stability and contend with a pressing demand for comprehensive healthcare and social services to support their populations. With healthcare costs rising, set to surpass 10% of GDP in many western economies by 2030, and presently outpacing GDP growth, We are clearly heading into unchartered waters. As we enter a much older world, we must address the socioeconomic challenges and opportunities that will arise.

To that end, we invite you to participate in the dialogue through our dedicated LinkedIn group 'Living Beyond Limits: The Age of Healthy Longevity (ES2030)' where we will discuss the challenges and opportunities presented by these demographic shifts, share insights, and collaboratively develop strategies to navigate the evolving landscape. Your input will be invaluable in shaping a comprehensive and proactive approach to managing these unprecedented changes, ensuring a sustainable and vibrant future for all.

2

How has global life expectancy changed, and what does the future hold?

According to data from the United Nations, there has been a significant increase in average global life expectancy over the past several decades. In 1960, the average life expectancy was 51.2 years; by 2023, this figure has risen to 73.16 years.[17] Projections estimate that by 2045, the global life expectancy could reach 76.8 years.[18] With recent breakthroughs in various technologies, pioneering healthcare approaches, and cutting-edge longevity research, the future holds the potential for human lifespans to extend well beyond the projected 76.8 years. A child born in the West today has a more than 50% chance of living over 100.[19]



Longevity is influenced by genetics, education, socioeconomic status, lifestyle, healthcare, and environmental factors. As these factors differ from place to place, life expectancy differs substantially between countries, regions, and city nighbourhoods. There is an 18-year gap in average life expectancy between low- and high-income countries and a 30-year gap between the lowest and highest life expectancy worldwide.[20]

The adage, "Your zip code is a better predictor than genetic code", rings true. There are vast disparities in life expectancy in the US from zip code to zip code. In 56 of the 500 largest US cities, a lifespan variation of over 20 years can be observed between different nighbourhoods.[21] Healthcare inequity potentially amplifies the divide.[22] The US spends around $4.3 trillion on healthcare,[23] of which 20-25% is waste,[24] and around 27 million people remain uninsured.[25] Alarmingly, US life expectancy fell from roughly 79 years in 2019 to 76 years in 2021.[26] COVID-19, drug overdoses, gun violence, suicides, car accidents, poor diet and access to nutritious food, and stress contribute to this decline. The implications of these disparities extend beyond the US to other Western countries.

For example, in the UK, the House of Lords reported that "The health of a 40-year-old Pakistani or Bangladeshi person [living in the UK] is equivalent to that of a 70 or 80-year-old white British person", further underscoring global health inequalities and the pressing need to address them.[27]

"IF WE LIVE LONGER, IT WILL BE ESSENTIAL TO LIVE HEALTHIER – WE NOW HAVE THE WEALTH, TECHNOLOGY, CAPACITY, AND COLLECTIVE KNOWLEDGE TO SET AND PURSUE A BOLDER VISION FOR OUR HEALTH."

While the past 60 years have seen a surge in longevity, we are yet to see this translate to a corresponding decline in the proportion of individuals living in moderate and poor health. According to McKinsey, people on average spend about 50 percent of their lives in less-than-good health, including 12 percent in poor health.[28] Numerous threats to human health remain insufficiently addressed: infectious diseases, mental health conditions, the rise in chronic diseases, and the effects of climate change, among many others. Consequently, we must emphasise promoting healthspan, the years of life spent in good health, rather than simply focusing on extending lifespan.

If we live longer, it will be essential to live healthier – we now have the wealth, technology, capacity, and collective knowledge to set and pursue a bolder vision for our health. We can extend our healthspan over the next decade – and add roughly 45 billion additional years of higher-quality life, averaging to about six years per person.[29] This extension can help manage the future strain on pension, social, and healthcare systems, enabling us to thrive in an increasingly ageing world.

3

How can we improve current healthcare systems?

"The future is already here - it's just not evenly distributed."[30] McKinsey reports that using interventions that exist today, including prevention and lifestyle modification, the global disease burden could be reduced by about 40 percent over the next two decades.[31] Reimagining health could bring tremendous benefits: an average 65-year-old in 2040 could be as healthy as a 55-year-old today. Better health could add $12 trillion to global GDP in 2040.[32] A significant upgrade to healthcare systems may well be the highest impact intervention to deal with the dramatic changes in demographics and longevity.

There are opportunities for substantial improvements in health outcomes, even without the tremendous clinical innovations in the pipeline (see next section). Increasing access to proven clinical practices and deploying digital services will positively impact health. Transitioning from a reactive to a more preventative

approach will help people proactively address health risks. Infectious disease will continue to decrease while chronic disease will become prevalent.

Strong communities and healthy behaviors tend to increase healthspan. In 2008 a National Geographic expedition to uncover the secrets of longevity led to the discovery of five places around the world where people consistently live longer, healthier and happier lives, dubbed the Blue Zones.[33] It confirms that highly active people are less likely to die prematurely. One in five deaths globally is linked to having a poor diet, and an unhealthy dietary pattern is associated with several chronic conditions, such as heart disease, type 2 diabetes, obesity, and certain cancers. Having a high sense of purpose may help, while stress-related disorders vastly increase the risk of all-cause mortality. Strong social connections and close community ties promote longevity. Individuals with stronger social relationships are 50% more likely to live longer than those without. We should step up the science of health and disease drivers that individual behaviors can influence. There is substantial evidence that policies that promote health can have deep impacts. A good example is the anti-smoking campaigns and regulations. The Journal of Public Health Management and Practice reported, "The effect sizes for demand reduction policies indicate the potential for substantial reductions in smoking prevalence, as much as 60%".[34] Similar approaches could be taken for unhealthy food and drinks.

In most Western countries, the healthcare system is fragmented and provider-centred rather than organised around patients. Bound by policies and regulations, their consults, procedures, and prescription are reimbursed by healthcare payers (insurers) without explicit incentives to improve patient outcomes. Healthcare providers wait for patients to show up with their health issues. Care is organised around medical disciplines and primarily delivered in brick-and-mortar practices, clinics, and hospitals with multiple hand- offs and limited feedback. There is no such thing as patient-centric care orchestration, let alone a health continuum that embraces prevention and healthy behaviors.

"HEALTHCARE SYSTEMS MUST EVOLVE FROM A REACTIVE STANCE TO A PROACTIVE APPROACH, WITH AN EMPHASIS ON PREVENTION AND THE PROMOTION OF HOLISTIC WELL-BEING."

While the quality of treatment and care has dramatically improved since our current system was designed mid-last century, this is primarily the result of diagnostic and therapeutic innovations. The system hasn't structurally changed. Michael Porter of Harvard Business School has been promoting "value-based" approaches to organising care that is widely touted as critical to improving the health outcomes of patients worldwide and controlling runaway healthcare costs. Value-based health care's (VBHC) central tenet is that the overarching principle in redesigning health care delivery systems must be value for patients. Value is defined as the outcomes that matter to patients and the costs to achieve those outcomes.[35] This requires overhauling most healthcare reimbursement systems that deliver input-based, fee-for-services. An outcome-oriented system pays for outcomes, for instance, successful surgery with quick recovery or control of chronic disease without unnecessary exacerbations.

VBHC promotes population health management, which addresses the health needs of different population cohorts, fully recognising the risks, urgency, complexity, and constraints associated with disease, and the socioeconomic determinants and behavioral aspects that impact outcomes and cost-to-serve. Low- complexity care will increasingly be automated and consumer self-directed on digital channels; the mid- complex will be provider-assisted, while complex care will remain fully provider-directed. This is not a new concept. The financial services started automating

routine banking decades ago while keeping face-to-face engagement, supported by technology, for more complex matters.

Reducing the age gradient for comorbidities has a measurable impact on healthspan.[36] It requires a health system based on prevention rather than just intervention. Globally, expenditure on preventative healthcare is low. In the EU, for example, only around 2.8% of health spending is allocated to prevention activities,[37] signaling that a substantial reallocation of expenditure is needed. However, simply reallocating funds may not be sufficient. To truly make a difference in improving healthspan, there is also a need for increased investment in preventive healthcare. While we have historically invested heavily in education and innovation, it is vital that we extend similar financial support to preventive measures. Increased funding will enable the development and implementation of more robust and far-reaching preventive initiatives. Preventive health requires a "life course" approach, identifying key stages at which interventions are most likely to support healthy ageing—e.g., prenatal, puberty, and middle age. A balanced combination of reallocation and increased investment in these critical stages will significantly contribute to the extension of healthspan, and it is this dual approach that is essential for achieving lasting improvements in the overall health of populations.

A digital health ecosystem approach anticipates these changes with data-driven insights. It applies three levers for optimisation: the cost of low and mid-complex care will decrease over time because of higher efficiency through data insights. There is substantial scope for automation of care administration, orchestration/referrals, triage, and reimbursement. Secondly, the availability of a larger care capacity pool, inherent in virtualisation, will enable timely and more efficient resource allocation. The third big lever is the preventive, longitudinal approach for chronic diseases. The health continuum approach aims at prevention, timely interventions, eliminating unnecessary tests and procedures, and reducing downstream care costs. Chronic disease today represents around 85% of healthcare spending in the Western world.[38] A digital ecosystem approach can create a substantially better patient experience and outcomes because of the personalised, 24⁄7 availability of the right expertise at the right time.

Outcome-focused and human-centric care models can only work if the underlying digital infrastructure is fit-for-purpose and can be deployed at a large scale, including "last-mile touchpoints" to people wherever they are.[39] This ecosystem is data-driven and designed for orchestration towards better outcomes in a concerted health delivery ecosystem. It aims to change public health by applying population health management and deploying the primary building blocks for human-centric, value-based care and related healthcare performance transparency and benchmarking.

In addressing the broader aspects of health, it is imperative to recognize the significance of mental health as an integral part of the preventive approach. According to the World Health Organization, mental health is as essential as physical health in the tapestry of holistic care, especially in our era where mental conditions like stress, anxiety, and depression are escalating.[40]

Furthermore, a comprehensive digital health ecosystem must also accommodate mental health services and interventions. Digital tools like teletherapy and online mental health resources play a crucial role. A longitudinal approach is essential for mental health, similar to chronic physical diseases, enabling the early identification and mitigation of potential issues.[41]

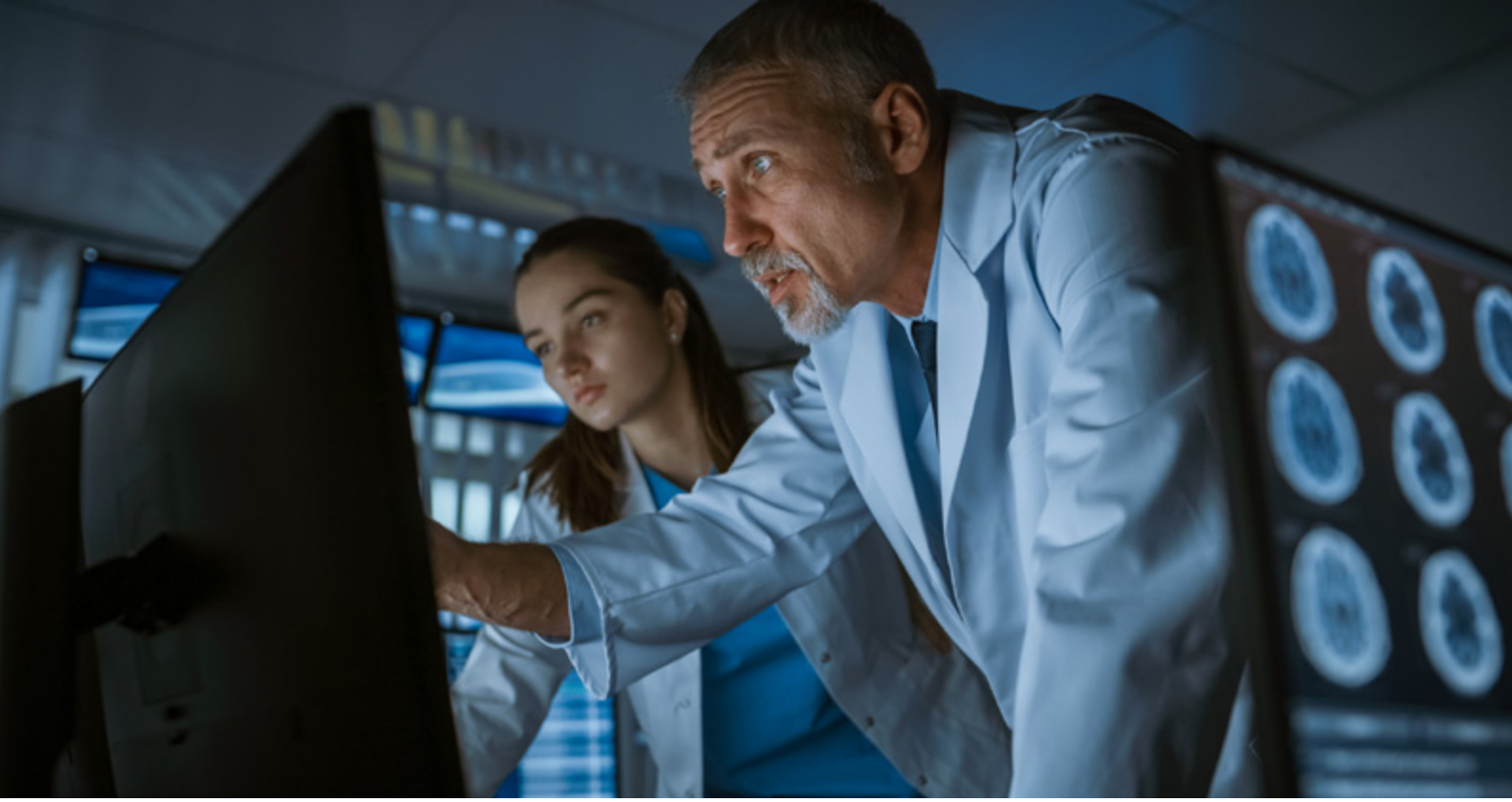
The association between strong community bonds and mental well-being is evident in the "Blue Zones" findings.[42] Such community engagements not only promote longevity but also provide a safeguard against mental health disorders.

Addressing mental health needs is pivotal in the evolution towards value-based healthcare.[43] By uniting both mental and physical health domains, we can cultivate a healthcare paradigm that truly fosters healthy aging and optimal outcomes. Moreover, the intricate link between mental and physical health cannot be overemphasized. Individuals with mental health disorders are at a heightened risk of developing chronic physical conditions.[44] As the healthcare industry pivots towards a more preventive model, this connection warrants paramount attention.

4

What role will advancements in science, technology, and medicine play in extending our healthspan?

According to McKinsey, health innovations in the visible pipeline could cut the disease burden by 6 to 10 percent by 2040.[45] Numerous technologies, scientific fields, and medical disciplines contribute to extending the human lifespan and overall well-being. Rapid advancements in technologies including AI and machine learning, 3D printing, robotics, and nanotechnology are combined with genetic engineering, regenerative medicine, precision diagnostics, pharmacology, and personalised healthcare to achieve this. Technology will be pivotal in lengthening human lifespans and enhancing healthspans. Furthermore, current longevity



research delves into various interventions that promise to extend both lifespan and healthspan to even greater extents. These innovative approaches include senolytics,[46] telomere extension and maintenance techniques,[47] and therapies to address the fundamental aspects of ageing. Cutting-edge technologies and research directions indicate that human lifespans and healthspans may ultimately exceed present expectations, leading to a future of longer, healthier lives.

"CUTTING-EDGE TECHNOLOGIES AND RESEARCH DIRECTIONS INDICATE THAT HUMAN LIFESPANS AND HEALTHSPANS MAY ULTIMATELY EXCEED PRESENT EXPECTATIONS, LEADING TO A FUTURE OF LONGER, HEALTHIER LIVES."

Personalised medicine is an approach to healthcare that uses an individual's genetic, environmental, and lifestyle information to tailor treatments and preventative measures to their specific needs. Personalised medicine can be used in various areas of healthcare, such as cancer treatment, pharmacogenomics, risk prediction, and prevention, nutrigenomics, and immunotherapy.[48] This precision approach increases the effectiveness of treatment while minimising side effects and improving the overall health outcomes for patients. With more and more advances in genetics and technology, personalised medicine is becoming increasingly accessible and is expected to play a major role in the future of healthcare.[49] For example, genetic testing can be used to identify specific genetic mutations in a patient's cancer cells, and then tailor the treatment to target those specific mutations. This can help to increase the effectiveness of treatment while minimising side effects. Personalised medicine can also be used to improve the effectiveness of medication by considering an individual's genetic makeup. For example, certain genetic variations can affect how a person metabolises a particular drug, and this information can be used to adjust the dosage or choose a different medication.

Other areas showing tremendous progress are molecular technologies, cellular therapy, regenerative medicine, harnessing the immune system's power, and applying laboratory-developed monoclonal antibodies.[50] With molecular technologies, including genome editing and proteomics, new medicines and diagnostics are created by harnessing molecules' power at a subcellular level. Cellular therapy and regenerative medicine focus on biological products derived from living

cells.These are used for therapeutic purposes to replace or repair damaged cells or tissue. Regenerative medicine will decrease reliance on organ transplantation. There is a growing interest in using the body's own immune system to fight diseases, such as cancer and autoimmune disorders. The development of therapies such as CAR-T cell therapy, which modifies a patient's immune cells to target cancer cells, show promising results. Monoclonal antibodies are created in a lab and mimic the immune system's natural ability to fight off pathogens.

Digital ecosystems could be relevant to address these shifts as they can integrate all the unique offerings around longevity needs for populations. There are already many well-funded start-ups. Recently, Sam Altman, CEO of OpenAI, invested $180M in Retro Biosciences, which has a mission to add 10 years to the average human lifespan.[51]

Advancements in science, technology, and medicine play a crucial role in extending our healthspan by providing a comprehensive understanding of the ageing process and its underlying biological mechanisms. These advancements enable the development of targeted interventions and treatments that can mitigate or delay the onset of age-related diseases and conditions, contributing to an overall improvement in healthspan.

The implications of extending our healthspan on science, technology, and medicine are multifaceted. On the one hand, it will lead to an increased demand for research and innovation in the fields of ageing and age-related diseases. Scientists, technologists, and medical professionals will need to work collaboratively to develop new interventions and treatments that can further extend healthspan. On the other hand, extending healthspan may also result in an ageing population, which can pose challenges to healthcare systems and social support structures. As people live longer and healthier lives, there will be a need to address the unique healthcare and social needs of an ageing population.

Furthermore, the ethical implications of extending healthspan must also be considered. As we continue to explore ways to extend healthspan, it is essential to balance the benefits of longer, healthier lives with the potential societal and ethical implications. Researchers, policymakers, and stakeholders should work together to establish guidelines and frameworks that ensure the responsible and equitable development and implementation of interventions and treatments aimed at extending healthspan.

5

What are the socioeconomic impacts of increased longevity and healthspans?

Increased longevity and healthspans, or the ability to live longer and healthier lives, offers a potential counterbalance to the challenges of shrinking and ageing populations. However, without meaningful interventions and significant course corrections, we risk facing substantial difficulties. Healthcare, social services, and pensions, on their current trajectories, are unsustainable. Moreover, the emergence of a divided society, bifurcated into those that work and those that don't, will result in rising tensions and social discord.

As populations age the demand for healthcare services will continue to increase, leading to higher healthcare costs. In Western societies, healthcare spending has exceeded GDP growth for the past decades. Most of the costs are related to chronic conditions such as heart disease, diabetes, cancer, and long-term care.

An ageing population also puts pressure on pension and social security systems. As people live longer, they must rely on these systems for extended periods. This leads to increased costs for governments and employers and potential changes to these systems to ensure their sustainability. An ageing population may also have an impact on productivity: a decrease in the size of the workforce and reduced innovation and productivity. As the proportion of older people increases, the dependency ratio increases. This means that there are fewer working-age people to support the elderly, which can put a strain on the economy and public finances. An ageing population may also put pressure on public finances, as older people are more likely to receive public benefits such as pensions, healthcare, and long-term care. Governments must find ways to pay for these benefits, which may lead to increased taxes or decreased government spending on other programs. The demand for social services, such as elderly care, healthcare, and transportation, will increase. This could pressure the government and the private sector to provide these services, increasing costs for individuals and society.

However, we see opportunities for a sustainable approach if we can ensure that healthspan increases proportionately with the lifespan of populations. As an ageing population gains both more years of life and years of healthy living, productivity could see an upswing. As people live longer and healthier, they can work for longer periods, potentially leading to a stronger and more experienced workforce. Technologies like AI and robotics are poised to redefine the nature of work, which could develop in a way that enables individuals to remain productive for longer. As we age, our cognitive capabilities change and complement the abilities of younger generations, calling for multigenerational teams. The collective wisdom and experience older generations can offer could benefit society, cultivating an environment of multigenerational learning and innovation. Embracing these demographic and technological changes effectively will be key to creating a more inclusive and prosperous future in this new era.

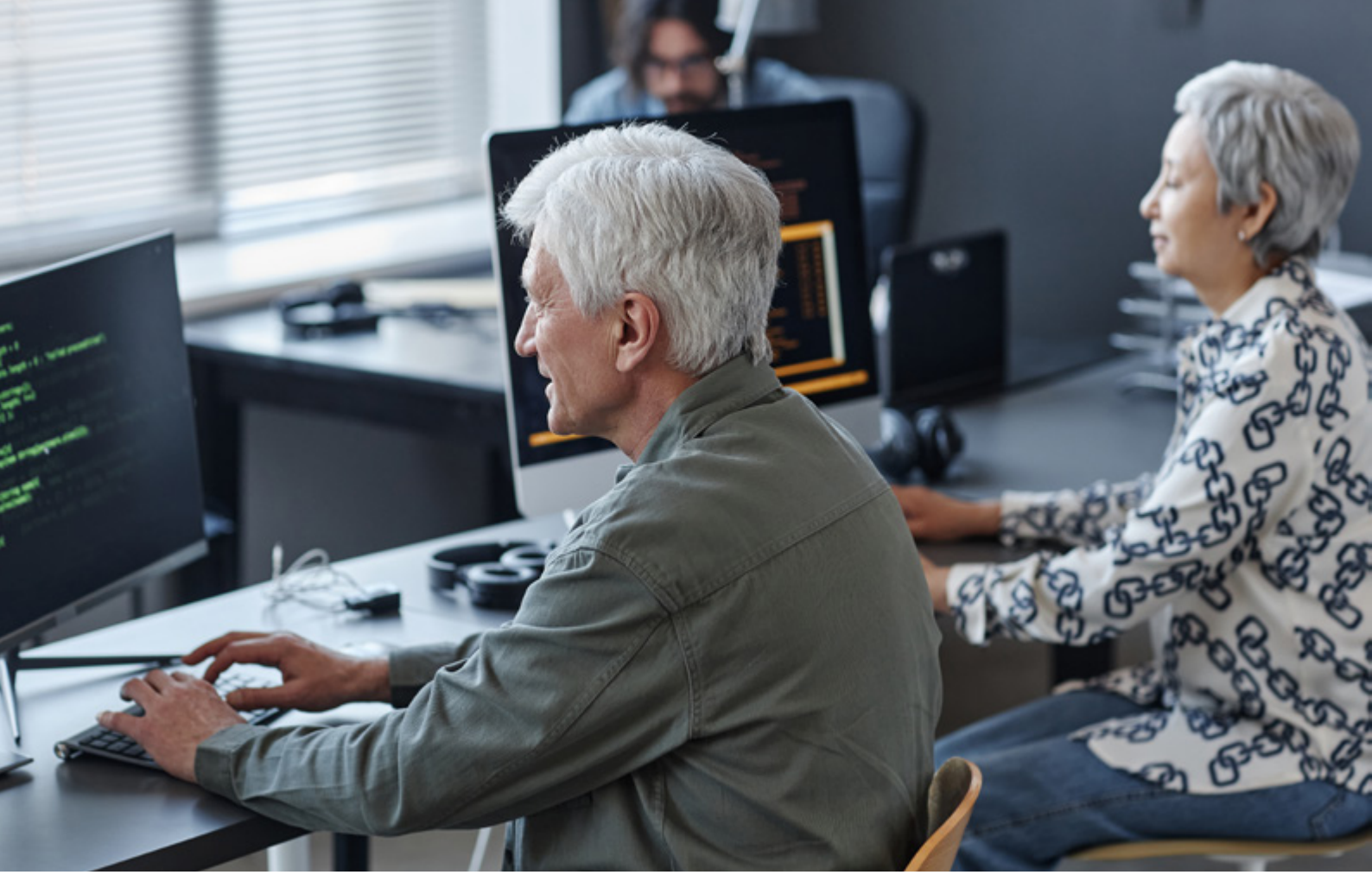
“AS AN AGEING POPULATION GAINS BOTH MORE YEARS OF LIFE AND YEARS OF HEALTHY LIVING, PRODUCTIVITY COULD SEE AN UPSWING.”

The traditional three-stage life of 'education – career – retirement' must be revised to continuous education and evolving professional engagement. As the authors of 'The Hundred Year Life'[52] observe:

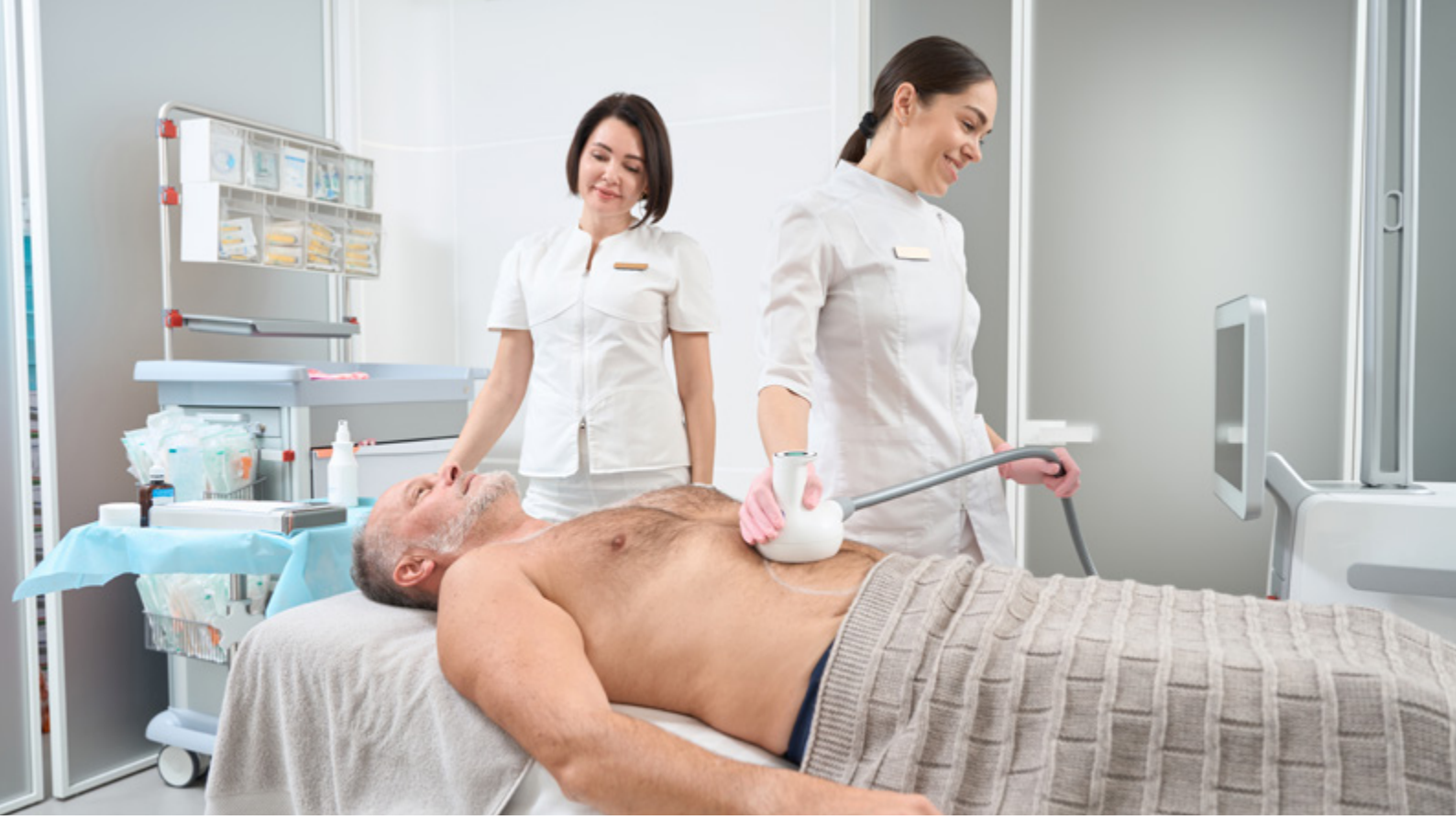
"If you work into your 70s or 80s in a rapidly changing job market, then maintaining productivity is no longer about brushing up on knowledge – it is about setting time aside to make fundamental investments in re-learning and re-skilling. Being flexible, acquiring new knowledge, exploring new ways of thinking, seeing the world from a different perspective, coming to terms with changes in power, letting go of old associates and building new networks. These transformational skills call for a potentially huge shift in perspective and require real foresight. With more transitions and new stages comes the need to invest: in shifting identity so you can take on a new role, in creating a different lifestyle, or in developing new skills. The gift of a longer life with more time creates space for investment. 'Age' is not a 'stage' any longer, and these new stages will be increasingly age-agnostic."

Rethinking education should include early-age education on how to live a fulfilling, healthy, and wealthy life. This includes understanding the importance of saving early to create financial independence later in life and the health behaviors that will pay dividends. Education should focus on foundational aspects of social skills, critical thinking, conceptual and analytical skills, problem-solving, risk management, and planning. While understanding sciences and technology will be increasingly important as it will be an integral part of our future lives, the humanities are equally important: understanding history, psychological and social drivers, creativity, and imagination will be required to shape our future societies. During our lifetimes, we should invest substantial time to reskill.

"THE COLLECTIVE WISDOM AND EXPERIENCE OLDER GENERATIONS CAN OFFER COULD BENEFIT SOCIETY, CULTIVATING AN ENVIRONMENT OF MULTIGENERATIONAL LEARNING AND INNOVATION."



A growing population with increased life and health expectancy could catalyze economic growth, leading to higher incomes and prosperity. As our workforces expand and become richer in experience, they could stimulate greater economic activity, leading to higher income and prosperity. Increased longevity has the potential to improve the quality of life in older age, allowing people to enjoy more years of good health and independence. The prospect of living longer and healthier will give individuals opportunities to engage in new experiences and contribute to the workforce and their communities in unique ways. With more years of life, people may be more socially active, able to form deeper connections, and gain a greater sense of purpose within their communities – another leading factor that supports healthy ageing in older populations.[51] We see an opportunity to reshape communities to blend work and leisure with a more multigenerational and multi-social mix of people. Interventions may be needed for zoning regulation to stimulate these communities. Contributions to communities by individuals should be rewarded to promote interpersonal connections and shared responsibilities.



An ageing population with more years of life and good health may lead to greater intergenerational support. The additional years could empower older individuals to offer more support and assistance to their children and grandchildren, helping to strengthen family ties and social cohesion. Additionally, with extra years of life to spend in good health and with greater independence to maintain daily routines and other activities, the physical, emotional, and financial burdens that family members and caregivers may experience when caring for elderly family members or individuals could be eased. Communities, too, can benefit from older generations remaining independent and active for longer in the workforce, volunteering, or participating in civic and cultural activities. Contribution to communities should be recognised and rewarded.

Increased longevity also has the potential to lead to enhanced care for older people, as older people will have more years of life to spend in good health and independence, which can help to reduce costs associated with long-term care. This is not to say that the need for elder care will disappear entirely, but the nature of that care could be fundamentally transformed. Services can be redesigned to focus on promoting ongoing health and independence rather than managing chronic illnesses or disabilities. The potential shift towards preventive, wellness-oriented care strategies opens new avenues for innovation in the healthcare sector, ultimately promoting a more proactive and empowering approach to elderly care.

Enjoying a longer and healthier life could also act as a catalyst for financial security. With the potential to participate in the workforce for an extended period, individuals have a broader duration to save more for later stages of life and make more investments, which can help fortify their financial futures. Having more time, however, will not necessarily translate into greater financial security. It is here that implementing interventions that promote financial literacy and life-long planning becomes critical. Equipping individuals with the knowledge and tools they need to plan their financial futures will ensure populations make the most of extended life and healthspans.

Overall, increased longevity can bring many benefits, including increased productivity and economic growth, improved quality of life, and more significant social and family support. It is essential to consider these potential benefits and take steps to promote healthy ageing and extend the human lifespan.

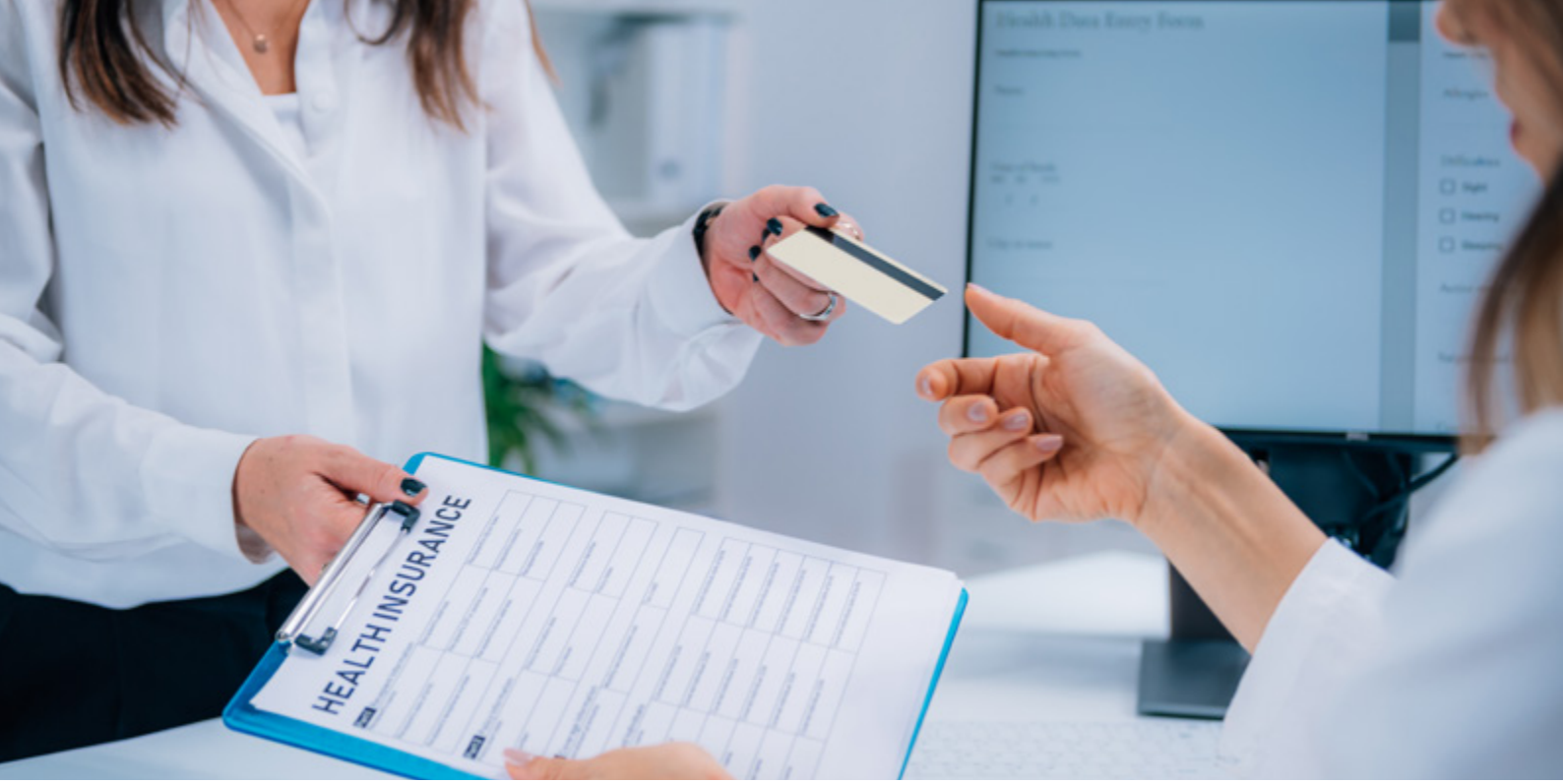
Several social, political, and economic counterforces may prevent societies from living longer and healthier lives, despite our advancements in extending human lifespan and healthspan. One of the main political counterforces is the desire to return to "how things were", a common theme among populist politicians who want to stop change and maintain the status quo, despite the pressing need to adapt to a fast-changing future. Another counterforce is the lifestyle factors and socioeconomic differences contributing to the average age and health decline. Life expectancy and healthspan improvements have stalled in many high- income countries and even declined for those in the poorest societal groups, reflecting widening inequalities across a broad spectrum of factors. There are profound differences among socioeconomic cohorts in many societies. To address these challenges, there is a need for policies that promote social justice, reduce inequality, and support healthy ageing. This includes policies that ensure access to healthy food, physical activity, and healthcare services. In addition, these policies should support health equity, social cohesion, employment, secure housing, lifelong learning, and training opportunities. Immigration is a controversial topic in many Western societies. However, some countries may have to revise their policies and approaches to maintain a vibrant economy in this new era and find new ways to integrate newcomers into the society.

6

What challenges and opportunities do extended human lifespans and healthspans present for sectors?

Extended human lifespans and healthspans present unique challenges and opportunities for industry, government, and society worldwide. Think of how we will live and work together, how we will consume healthcare services, how education will change, how we will sustain a growing economy with fewer and older people, and how we will deal with ever-growing gaps (between emerging and mature economies, between regions or within cities).

More years of life expectancy will require more retirement planning and savings. This may increase demand for financial products and services such as annuities and long-term care insurance. Longevity puts pressure on pension and social security systems.



As people live longer, they will need to rely on these systems for longer periods of time. This can lead to increased costs for governments and employers and potential changes to these systems to ensure sustainability. Extended work spans will be necessary to sustain those services into the future. As we focus on healthcare instead of just “sickcare”, there will be an increasing need for health savings accounts and long-term care insurance. Financial institutions and governments must anticipate these changes and take steps to adapt to them.

An increase in longevity and healthspans will lead to how people consume entertainment, travel, and leisure activities. It will impact the retail industry. It may lead to changes in consumer preferences, product design, home goods and furniture, e-commerce, and delivery and demand for health and wellness products. Retailers must anticipate these changes and adapt their products and services accordingly.

Some big shifts may be expected in housing and mobility. Instead of traditional retirement homes, communities may be designed around multigenerational housing with support services for the elderly. The Washington Post reports that “research has shown that older and younger adults need one another: Mixed- age interactions make seniors feel more purposeful, and young people benefit from their elders’ guidance and problem-solving skills.”[52] Mixed-age communities benefit their residents by cultivating purpose. Many people prefer socialising with their same-age peers, but age matters less if individuals share a common purpose. These mixed-age setups foster a sense of belonging and keep older people active when inspired by the vigor of youth. In some communities, the generational glue is professional.

"INTERGENERATIONAL COMMUNITIES, WHERE THE YOUNG AND OLD LIVE TOGETHER, HAVE SHOWN TO MAKE SENIORS FEEL MORE PURPOSEFUL, WHILE YOUNG PEOPLE BENEFIT FROM THE ELDERS' GUIDANCE."

In the Netherlands, several projects have shown positive results in cultivating intergenerational synergies. For instance, in the town of Houten, an innovative program places elderly women and young women with children experiencing social issues together in an assisted living environment.[55] The program provides housing in a building located in the city center, making it easier for seniors and young women to access goods and services. The seniors live on the ground floor, while the upper apartments are reserved for young women. The rooftop terrace, collective meeting spaces, and consulting rooms create spaces that encourage meeting and intermingling.

Carlo Ratti of MIT proposes a create a playground city. A healthy city makes space for the rich and poor, young and old alike.[56] The project aims to generate positive interactions among people of all income levels and ages by providing accessible, beautiful, and free or low-cost public and private spaces, including plentiful and affordable housing. He suggests repurposing empty office space in cities like New York:

"Modern office towers have deep floor plans meant to maximise square footage, but units in residential buildings need windows and their natural ventilation and daylight. To achieve conversion at scale, we must therefore look past the architecture of the traditional apartment. Deep-core office buildings could be converted into new kinds of spaces optimised for co-living and co-working. Bedrooms, with windows, could line the perimeter while common areas for cooking, laundry, work, exercise, and socialising could fill the middle. Such arrangements could also help meet one of the social challenges of our time: loneliness."

Recently, longevity enthusiasts have been crafting ambitious plans to form an autonomous region, with their sights set on Rhode Island. They have drawn inspiration from 'Zuzalu', a temporary urban establishment in Montenegro.[57] This pop-up city has become a haven for individuals keen on creating a new jurisdiction specifically designed to promote biohacking and expedite the development and approval of drugs that could decelerate or even reverse ageing.

McKinsey sees the elderly ecosystem as comprised of offerings around the needs of seniors, including finances and retirement, everyday activities, and health and wellness. The elderly is a large, growing, and valuable segment representing a USD ~21 trillion opportunity by 2030. Trends in both supply and demand set the stage for end-to-end omnichannel ecosystem solutions: unmet needs are still numerous, while digital adoption of the segment has been increasing. The market is fragmented and served by several players who have the opportunity for disruption, especially as challenges arise in areas such as elder care. Traditional players (e.g., nursing homes and financial institutions) have existing offerings addressing specific parts of the elderly ecosystem, but few observed players have done so holistically and seamlessly. The opportunity is promising for ecosystem building. The next big winner of the space will be players successfully implementing an end-to-end solution. Ecosystems create value in different ways, depending partly on the maturity of the offering.

7

What themes need to be addressed to prepare for the future?

As argued, the most important intervention to deal with the challenges of demographics and longevity is to increase people's healthspan. This requires profound changes to healthcare systems designed in the fifties and sixties in completely different circumstances.

According to the McKinsey Health Institute, six shifts will be needed to reach the full potential of human health and longevity.[58] The first is to change to a system that enables the prevention and promotion of optimal health rather than episodic sick care. This requires investment in value-based healthcare models. Secondly, we need a better understanding of health and disease drivers. A reorientation towards data-driven population health with the application of data science to the complex factors that can guide an extended healthspan. As mentioned, scaling what works today and providing better access to the associated healthcare services will be significantly impactful. It implies new healthcare reimbursement systems and

better use of technologies like the Cloud, IoT, and AI. There is impressive progress in biotechnology and connected care. However, substantial barriers remain to get from research to widespread market acceptance. We must innovate more and more quickly. Unleashing the full potential of all sectors and recognising the fundamental relevance of health to every business will further promote a focus on a healthy life. Lastly, we will have to empower individuals to steward their own health with the help of technology and experts.

Assuming we can substantially increase healthspan, we must design inclusive, cross-generational communities. We must rethink education, work, and retirement: from three to multi-stage life. We will have to promote contributions to the community and investment in personal health and wealth over time. We should educate ourselves on how to live a healthy, affordable, and fulfilling life.

"IN THE NEW ERA OF LONGEVITY, EDUCATION, WORK, AND RETIREMENT NEED TO TRANSFORM INTO A MULTI-STAGE LIFE INCORPORATING CONTINUOUS LEARNING AND ACTIVE ENGAGEMENT. WE MUST DESIGN INCLUSIVE, CROSS-GENERATIONAL COMMUNITIES, AND ACTIVELY PROMOTE AND REWARD CONTRIBUTIONS TO THE COMMUNITY. WE MUST ALSO ENCOURAGE AND EMPOWER INDIVIDUALS TO INVEST IN PERSONAL HEALTH AND WEALTH OVER TIME."

Actionable Insights

As longevity becomes an increasingly important societal issue, stakeholders must work together to explore its impact and develop innovative solutions to address potential consequences while understanding the many opportunities an extended lifespan and healthspan presents. In the following section, key considerations for health and wellness, finance, retail and e-commerce, infrastructure, education, and work are provided, along with factors to support the development of an overall longevity strategy:

Health and Wellness

1. Advocate for transforming healthcare systems towards prevention and promoting optimal health over a lifetime. Promote value-based healthcare models that are centered on outcomes and patient well-being.

2. Invest in biotechnology and connected care solutions that can support the health and wellness of an ageing population. Overcome barriers to research, innovation and widespread market acceptance for such solutions.

3. Foster partnerships across sectors to leverage technology, data science, and population health strategies to extend the healthspan.

Here are some potential actions to implement these health and wellness strategies focused on extended human lifespan and healthspan:

Policy Advocacy: Advocate for policies encouraging a shift towards prevention-focused, value-based healthcare. This can include lobbying for legislation that incentivises preventative care, funding preventative health programs, and integrating health promotion into all aspects of healthcare delivery. It is also important to develop targeted interventions for different stages of life that can enhance the effectiveness of healthcare services.

Education and Training: Conduct training programs for healthcare providers to enhance their understanding of preventative healthcare and its role in improving patient outcomes. Additionally, educate the public about the importance of preventative health measures and how they can contribute to extending their healthspan.

Addressing Factors Influencing a Happy Life: Implement programs and initiatives promoting a holistic well-being view. This can include promoting physical activities, good sleep, spirituality, healthy eating and drinking habits, mental health awareness, and the importance of financial security. Consider creating communities or forums where individuals can find purpose and social connections.

Collaborate with Health Insurers: Work with health insurance companies to promote value-based insurance design (VBID). VBID encourages healthcare providers to focus on patient outcomes rather than the quantity of services provided.

Funding and Support: Direct funding towards biotechnology research and the development of connected care technologies that can support the health of an ageing population. This could be achieved through grants, low-interest loans, or public-private partnerships.

Regulatory Support: Work with regulators to streamline the approval process for innovative health technologies while still ensuring safety and efficacy.

Promote Collaboration: Foster partnerships between tech companies, research institutions, healthcare providers, and patient advocacy groups to accelerate the development and implementation of new solutions.

Data and AI: Utilise data and artificial intelligence to analyse population health trends, predict health risks, and develop personalised interventions. Ensure the safe and ethical use of data with appropriate privacy measures. Invest in a scalable, secure data infrastructure and promote insights on health drivers and outcomes.

Digital Health Platforms: Invest in developing digital health platforms to facilitate remote patient monitoring, telehealth consultations, health data sharing, and other connected care services. Promote new care innovations based on AI and robotics for personalised assistance.

Intersectoral Collaboration: Foster collaboration between the healthcare sector and other sectors (e.g., technology, education, transportation, housing) to address the social determinants of health and promote overall well-being.

Financial Planning

1. Encourage individuals to start planning and saving for retirement earlier to cope with increased life expectancy. Develop financial products and services that cater to long-term care needs.

2. Engage with governments and pension fund managers to review and adjust the design of social security systems and pensions to ensure they remain sustainable in the face of increasing longevity.

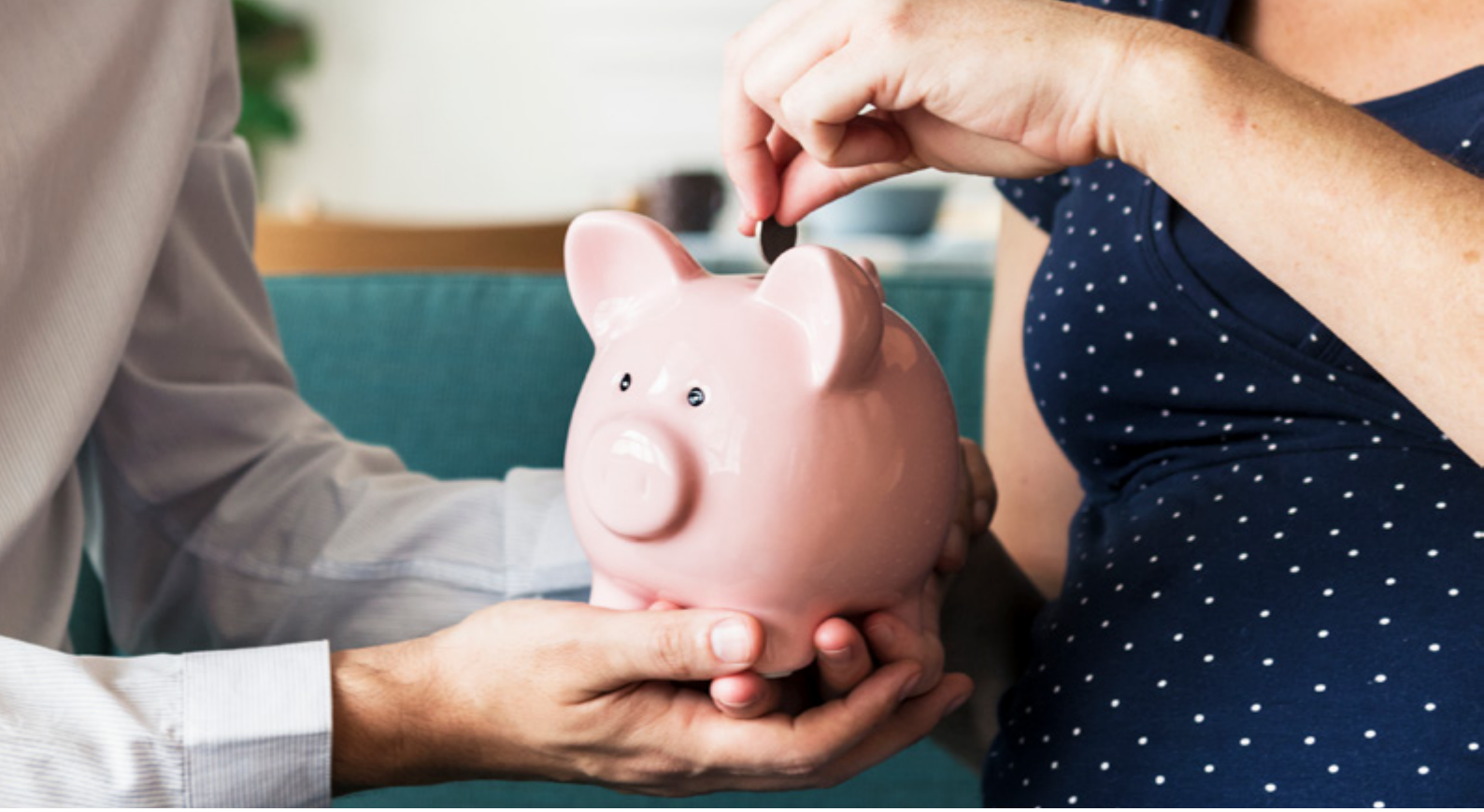
Implementing improved financial planning to cope with increased life expectancy will involve both individual and institutional measures:

- **Financial Education and Awareness:** Raise awareness about the importance of early retirement planning and saving. This could involve financial education programs, retirement planning workshops, or public awareness campaigns. The message should highlight the importance of saving early and regularly for retirement due to the increasing life expectancy.

- **Incentivise Saving:** Governments and financial institutions can offer incentives to encourage people to save more and earlier for their retirement. This could include tax incentives for retirement savings, employer-matching contributions, or even small-scale lottery systems where a percentage of savings is entered into a draw for a larger sum.

- **Create Appropriate Financial Products:** Financial institutions can develop products and services tailored to meet the needs of an ageing population. This could include annuities that provide a guaranteed income for life, long-term care insurance, or savings accounts with favourable interest rates for long-term deposits.

- **Review and Adjust Pension Systems:** Engage with governments and pension fund managers to review the sustainability of current pension systems. This could involve adjusting the retirement age, altering contribution rates, or transitioning from defined-benefit to defined-contribution schemes. The aim should be to ensure that pension systems can support people for a longer retirement period.



- **Regulatory Support:** Regulators can play a crucial role in encouraging long-term financial planning. For example, they can require financial advisors to discuss longevity risk with their clients, or they can make it easier for individuals to purchase annuities or other long-term financial products.

- **Financial Advisory Services:** The role of financial advisors will become even more important. They can help individuals understand the implications of a longer life span on their financial health, provide advice on various financial products, and assist in creating a robust financial plan for the future.

By implementing these strategies, we can ensure individuals are better prepared financially for a longer lifespan, and social security systems and pensions can remain sustainable despite increasing longevity.

Retail and E-commerce

1. Understand changing consumer preferences due to increased longevity. This could lead to changes in product design, home goods, furniture, and a shift towards e-commerce and demand for health and wellness products.

2. Address the needs of seniors in the retail industry. This segment represents a valuable opportunity; adjusting offerings to meet their needs could be a smart business move.

Addressing changing consumer preferences due to increased longevity and catering to the needs of the senior population can be achieved through a series of strategies:

- **Market Research:** Carry out comprehensive market research to understand older consumers' needs, desires, and behaviors. This should encompass product preferences, buying habits, and attitudes toward e- commerce and digital technology. Include qualitative interviews and surveys to gain in-depth insights.

- **Product Design & Innovation:** Use the insights gained from market research to influence product design and innovation. Ensure products are senior-friendly, i.e., easy to use, understand, and physically handle. Products that promote health and wellness are likely to be increasingly popular.

- **Tailored Marketing & Communication:** Develop marketing and communication strategies that resonate with an older demographic. Use appropiate messaging, imagery, and channels that appeal to and are accesible to older consumers.

- **E-commerce & Digital Accessibility:** Make digital platforms more senior-friendly. This can include simplified navigation, larger font sizes, and accessible customer service. Digital literacy training can also help older customers become comfortable with online shopping.

- **Physical Stores:** For brick-and-mortar stores, consider making layouts more navigable for seniors. This can involve clearer signage, easily reachable shelves, and seating areas for rest. Staff training can help ensure older customers feel welcomed and assisted.

- **Partnerships & Collaborations:** Partner with organisations and brands with a strong reputation with seniors. This could be beneficial in building trust and acceptance among the senior consumer population.

- **Inclusive Design Principles:** Adopt inclusive design principles to ensure that products and services are accessible and usable by as many people as possible, regardless of age, ability, or circumstance.

- **Feedback Mechanism:** Implement a robust feedback mechanism to continuously learn from the experiences and expectations of senior customers and adapt your strategies accordingly.

By understanding and addressing the needs of seniors, businesses can tap into a growing and valuable market segment while also providing products and services that enhance the quality of life for older people.

Infrastructure

1. Develop or support building projects that cultivate intergenerational synergies. Design communities around mmultigenerationalal housing with support services for the elderly to avoid generational gaps.

2. Explore options for converting unused spaces, like empty office buildings, into residential or community areas catering to all ages and income levels.

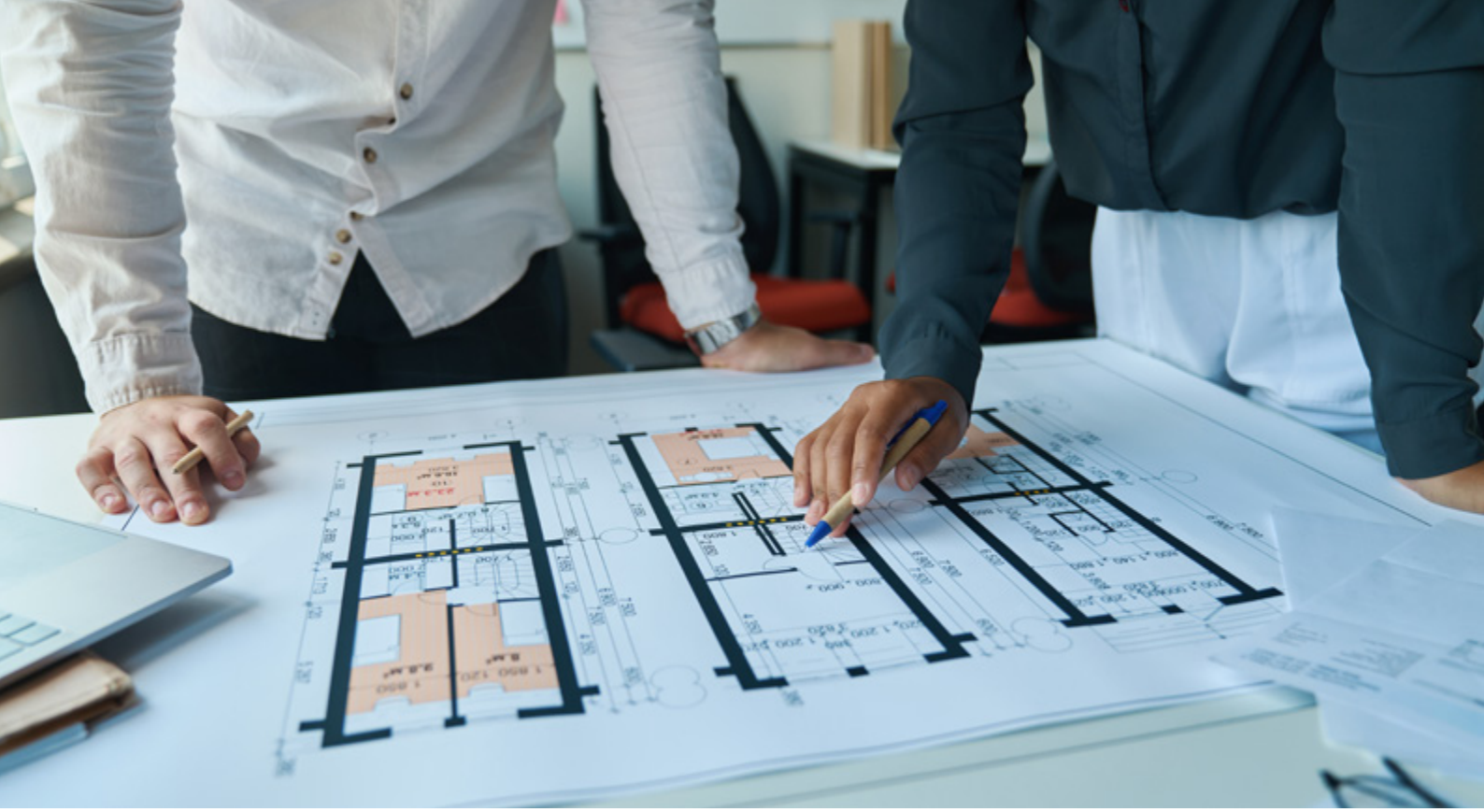
The development and implementation of projects that foster intergenerational synergies and enhance housing and mobility for the ageing population can be undertaken using several strategies:

- **Stakeholder Engagement:** Engage stakeholders from different sectors, including government, urban planners, architects, social services, and community members, to develop comprehensive strategies for creating multigenerational housing communities. Include the elderly in these conversations to understand their needs and concerns.

- **Project Design:** Develop project designs that integrate different generations, promote interaction, and provide support services for the elderly. Consider shared spaces for recreation and socialising, access to services, safety, and the physical needs of the elderly when designing these communities.

- **Urban Planning Policies:** Advocate for changes in urban planning policies to support multigenerational housing and community development. This could involve rezoning, developing financial incentives for developers or modifying building codes to facilitate such developments.

- **Repurposing Unused Spaces:** Identify unused spaces, such as empty offices or factory buildings, that can be converted into residential or community spaces. Work with architects and planners to develop creative solutions for these spaces that meet the needs of all age groups and income levels.



- **Pilot Projects:** Implement pilot projects to test the feasibility and benefits of intergenerational housing and community development. Use the results from these pilots to refine strategies and demonstrate the benefits to gain broader support.

- **Public-Private Partnerships:** Form public-private partnerships to finance and manage these projects. Governments, private developers, and non-profit organisations can each bring unique resources and expertise to such initiatives.

- **Awareness and Education:** Conduct awareness and education campaigns to promote the benefits of intergenerational living to the general public and potential residents.

- **Monitoring and Evaluation:** Establish systems for monitoring and evaluating these initiatives. This could involve tracking social cohesion, health outcomes, and resident satisfaction metrics. Use this data to improve and adapt the projects continually.

These strategies can promote intergenerational living, making the most of the wisdom of older generations while encouraging a more inclusive, caring society.

Education and work

1. Promote a shift from a three-stage life (education, work, retirement) to a multi-stage life incorporating continuous learning, work, and active retirement.

2. Encourage continued community and labor participation among older individuals. This can be achieved by promoting flexible working arrangements, lifelong learning, and engagement opportunities.

The strategies to implement the proposed changes in education and work could involve:

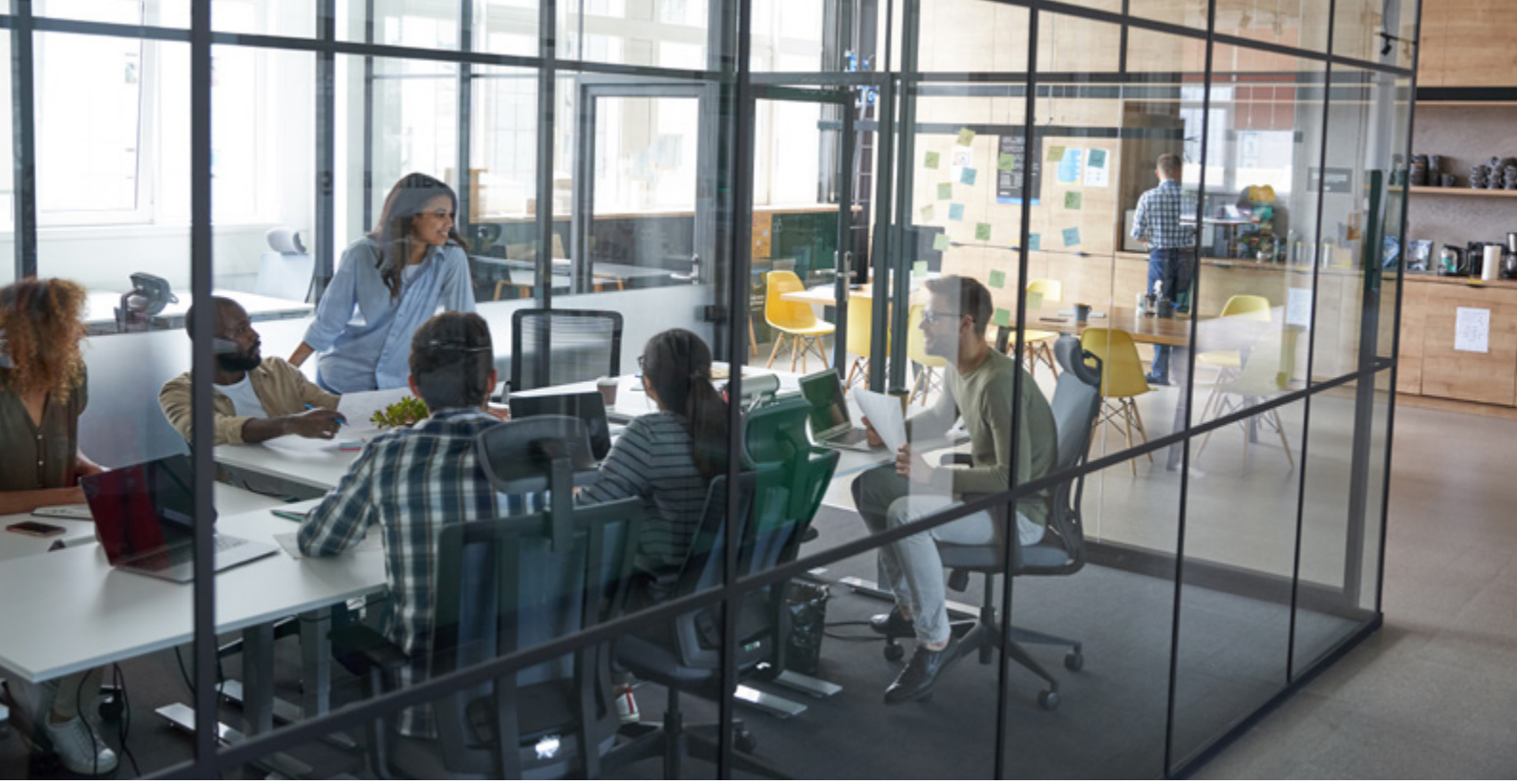
- **Lifelong Learning Programs:** Advocate for and develop programs that promote lifelong learning. This can include adult education classes, professional development courses, and online learning platforms. Encourage partnerships between universities, online learning platforms, and employers to provide accessible and relevant education for all ages.

- **Flexible Work Policies:** Work with businesses and policymakers to develop flexible work policies that accommodate the needs of older workers. This can include part-time work, remote work, job sharing, phased retirement, and other flexible arrangements.

- **Age-Friendly Workplaces:** Advocate for the creation of age-friendly workplaces that value the contributions of older workers and provide opportunities for intergenerational collaboration. This can involve changes to physical workspaces, technology training, mentorship programs, and policies that prevent age discrimination.

- **Policy Advocacy:** Advocate for policies that support a multi-stage life, such as extended working years, social security reform, and tax incentives for continued work and education in later life.

- **Public Awareness Campaigns:** Run public awareness campaigns to shift societal attitudes towards ageing, work, and retirement. Highlight the benefits of a multi-stage life and the contributions of older individuals to society.



- **Skills Update Programs:** Encourage and develop programs that enable older individuals to keep their skills updated. This can help them to remain competitive in the job market and find fulfillment in their work.

- **Career Counselling Services:** Provide career counseling services tailored to older individuals who wish to change careers, start a new job, or explore entrepreneurial opportunities.

- **Community Engagement:** Develop programs encouraging older individuals to engage with their communities. This can involve volunteering, mentorship, and community leadership roles.

- **Rethink retirement:** Delevop needs-based approaches that aim at increasing the work span for those willing and able to contribute to society by applying their expertise and experience in multigenerational and multi-disciplinary teams.

Implementing these strategies will require collaboration among various stakeholders, including government agencies, businesses, educational institutions, community organisations, and individuals. An approach of continuous experimentation, similar to randomised clinical trials, will be required for early identification of what works and what does not, and to finetune programs and policies before rolling them out.

Overall Longevity Strategy

1. Collaboration across sectors and stakeholders is key to addressing the challenges and opportunities presented by increased longevity. Establish partnerships and collaborative initiatives to create holistic solutions.

2. Invest in developing and innovating digital ecosystems that support extended human lifespan and healthspan, targeting unmet needs in areas such as elder care.

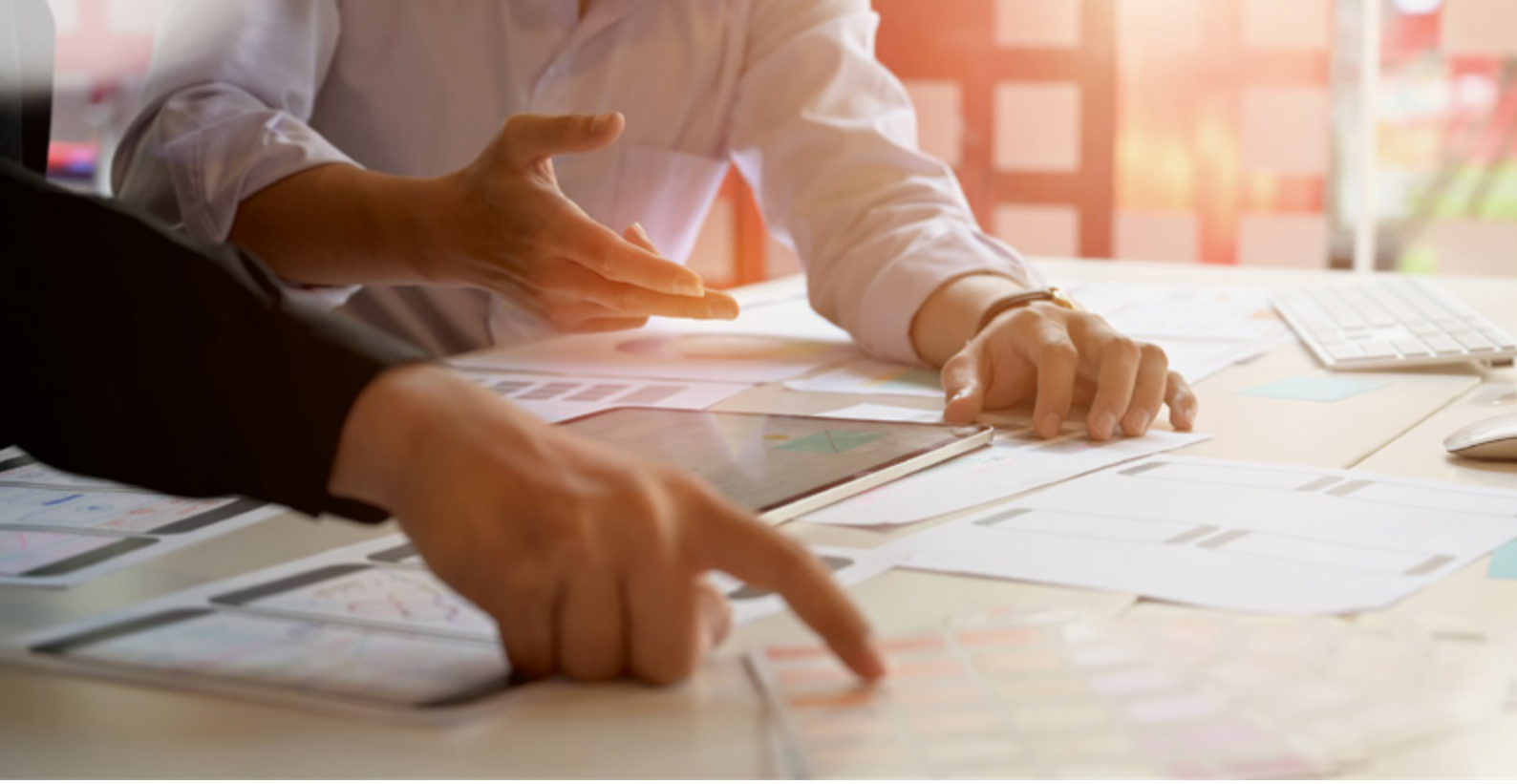
To implement these strategies focused on an overall longevity strategy, consider the following steps:

- **Establish Cross-Sector Partnerships:** This could be accomplished by setting up multi-stakeholder platforms or forums, allowing regular dialogue and cooperation among different sectors. These include government agencies, businesses, educational institutions, healthcare providers, tech companies, non-profit organisations, and community groups. The aim would be to share knowledge, leverage resources, and jointly develop and implement innovative solutions addressing longevity-related challenges and opportunities.

- **Develop Collaboration Frameworks:** Establish clear frameworks for collaboration that outline roles, responsibilities, objectives, and processes for decision-making and conflict resolution. This can help to ensure effective and efficient cooperation among different partners.

- **Promote Innovation Competitions or Challenges:** These could be used to encourage the development of new products, services, technologies, or business models that address the needs of an ageing population. Winners could receive funding, mentorship, or other forms of support to further develop and scale their solutions.

- **Invest in Digital Infrastructure:** Support the development of the digital infrastructure necessary for creating ecosystems that support extended human lifespan. This could include data-sharing platforms, cloud computing services, AI technologies, and telehealth systems.



- **Create a Longevity Innovation Fund:** A specific fund could be established to support start-ups and innovators developing products and services to address the challenges of increased longevity.

- **Implement Pilot Projects:** Test innovative ideas and models through pilot projects before scaling them up. This allows for testing adjustments, fine-tuning strategies based on feedback, and learning from failures in a controlled environment.

- **Advocate for Policy Changes:** Lobby for policy changes that support the development of digital ecosystems for extended human lifespan. This could involve policies related to data privacy and security, telehealth regulations, and incentives for businesses that cater to the needs of older adults.

- **Engage the Public:** Raise public awareness and understanding of the challenges and opportunities of increased longevity. This can help to generate support for relevant initiatives and encourage individuals to take an active role in planning for longer lifespans.

There have been various countries that have adopted policies and strategies in response to an ageing population. These policies often focus on enhancing the health and well-being of the elderly, ensuring financial security, and promoting active ageing. Here are a few examples to consider:

1. Japan: Japan has the highest percentage of elderly citizens of any country globally.[59] The government has implemented numerous measures, including healthcare reforms and community- based programs, to support this demographic. The "Long-Term Care Insurance" system in Japan, introduced in 2000, provides a variety of services to the elderly, including home help, adult day care, and short stay in facilities.[60]

2. Singapore: Singapore has launched the Action Plan for Successful Ageing, $3 billion plan that covers multiple areas such as health and wellness, learning, volunteerism, housing, and retirement adequacy.[61]

3. United Kingdom: The UK government has launched the "Ageing Society Grand Challenge" which aims to ensure that people can enjoy at least five extra healthy, independent years of life by 2035. The strategy includes harnessing innovations in science, technology, and healthcare.[62]

4. Germany: Germany has several strategies to address the needs of an ageing population. This includes a strong focus on pension reform, long-term care insurance, and active ageing.[63]

5. China: China's strategy for dealing with an ageing population has included changing its one-child policy, increasing the retirement age, and implementing new policies on elderly care.[64]

These strategies reflect a growing recognition of the importance of developing comprehensive, long-term approaches to support the health and well-being of an ageing population. They often involve collaborations across different sectors of society, including government, healthcare, business, and community organisations. These collaborations aim to create an environment that not only addresses the needs of older generations but also leverages their skills and experiences to contribute to society.

Conclusion

The journey of this report, born out of an insightful breakout session at the Ecosystems 2030 Summit, has woven a complex tapestry of the opportunities and challenges presented by the extension of the human lifespan. This session hosted an inspired cohort of influential leaders - C-level executives and experts from the world's foremost organisations. The diversity of their perspectives and the richness of their insights have shaped the nuanced understanding of longevity captured in these pages.

Indeed, humanity is on the verge of a major demographic shift: extended human lifespan, a phenomenon set to redefine societal conventions, economic systems, and personal behaviors in the coming decades. As presented throughout this report, such a shift will bring numerous challenges and opportunities that necessitate our immediate attention and strategic action.

The ageing demographic demands a paradigm shift from disease management to health optimisation, emphasising the concept of a healthspan rather than an extended life span. This transition calls for an extensive reevaluation and reconfiguration of current healthcare systems and a change in mindset at an individual and societal level. Prevention, lifestyle modifications, and innovative biotechnologies will take center stage, underpinned by robust data-driven insights.

As our populations age, there is a growing need for financial products and services designed to support extended lifespans. Pension systems, retirement planning, and financial models must adapt to this new reality, ensuring the sustainability of these systems while promoting continued labor force participation.

The expected change in consumption patterns, prompted by increased longevity, will significantly impact the retail, housing, mobility, and leisure sectors. This calls for the design of products, services, and infrastructures that cater to a demographically diverse society. The trend towards multigenerational communities highlights the value of inclusivity, purpose, and intergenerational synergy in our social structures.

Education, work, and retirement models must adapt to a multi-stage life model, one that aligns with the reality of extended lifespan. Lifelong learning and the continued pursuit of purpose and fulfillment must be promoted, and contributions to the community and investment in personal health and wealth should be incentivised over time.

In this new landscape, technology, and innovation have pivotal roles to play. From healthcare to everyday living, the potential to leverage technology and digital ecosystems to support extended lifespans and healthspans is significant. The next frontier of innovation may be optimising health, productivity, and fulfillment for an ageing society.

Preparing for a future of extended human lifespan and ageing societies is an imperative and urgent task. It requires collective action and collaboration among all stakeholders: governments, healthcare providers, financial institutions, technologists, and individuals. The challenges are substantial, but so too are the opportunities. By addressing the themes presented in this report through our dedicated LinkedIn group, 'Living Beyond Limits: The Age of Healthy Longevity (ES2030)', and working proactively, we can enable a future where longevity is about living longer and better.

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Endnotes

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