Promoting Active Ageing in the Digital Economy: Inclusion, Adaptation and Innovation
1-2 September, 2015

Summary of Main Points

International experts convened on 1-2 September to discuss policy actions to build an inclusive digital economy that keeps people healthy, active and engaged in their workplaces and communities. The consultation co-organised by the OECD and Global Coalition on Aging (GCOA) was hosted by the Harris Manchester College, University of Oxford from 1-2 September 2015. This event is part of a series of OECD-GCOA-Harris Manchester college initiatives to deepen our understanding of the silver economy.

The consultation brought together stakeholders from private sector, academia, finance, law and public policy to map the challenges and opportunities that accompany a rapidly evolving digital economy. The two-day conversation, concluded with five key insights that should inform strategies for addressing the needs of ageing societies through the digital economy and as a pathway to inclusive growth, productivity, wealth creation and social value:

1. The convergence of population ageing and technological innovation is transforming the future of work, enabling and demanding policies that foster new and flexible career models and age-friendly work and living environments.

2. Fostering an inclusive digital economy necessitates public and private incentives for life-long reskilling and the use and refinement of new learning platforms that democratis access to knowledge and skills.

3. Robust privacy and security standards will help increase trust in and use of data sharing tools and services that can improve responses to population ageing.

4. To encourage continued innovation that enables active ageing, companies and governments are forging cross-sector partnerships and exploring payment and reimbursement frameworks that will incentivise innovators to bring scalable digital health and wellness solutions to market and support broad access.

5. Improved research methodologies and coordination between studies are needed for measuring readiness for and progress towards a silver economy.

Businesses and public institutions should collaborate to act on these strategic insights to deliver innovations to benefit individuals – improving quality of life, new work opportunity and mobility as people age. In turn, this innovation can spur economic growth benefitting the broader economy and
society as a whole. This paper focuses specifically on the contributions from the consultation on how information technology and innovation can support active aging in the context of demographic change, recognising that there is a host of other key policies, including employment and social policy, retirement schemes, fiscal policy, health care, public service delivery amongst others, critical to the broader picture of active aging in context of demographic change. Ultimately all relevant policies should be considered in a comprehensive manner to successfully address active aging in the context of demographic change.
Insights from the OECD-GCOA Expert Consultation  
1-2 September 2015

Silver meets digital: Opportunity arises from convergence of two global trends

Rapid digital transformation offers countries a unique opportunity to turn population ageing into a pathway for growth. Through smart uses of information and communication technologies (ICTs) and the Internet, new possibilities open for active, healthy and productive ageing – possibilities that present many opportunities on the personal, familial, and societal levels.

Digital technology – done right – can keep the world’s ageing populations independent, active and working longer than previously possible. Advances in healthcare, tele-health solutions, transportation and urban living are just some of the ways older populations can benefit from the digital economy. More broadly, technology can create an inclusive labor and living environment and help foster a silver economy – an environment in which the over-60 interact and thrive in the workplace, engage in innovative enterprise, and lead healthy and productive lives. Long-term economic growth and sustainability relies on governments, industry and individuals getting this right. Our political and social institutions are, however, still structured around twentieth- and even nineteenth-century ideas of ageing and need to be adapted to the scale of demographic change and the nature of twenty-first century “life-courses”.

The path to success will test our collective ability to evolve conceptions of middle and old age as well as social models and metaphors. In practical terms, this means adapting our approaches to education, work policies, skills development, financial planning, as well as social security systems to exploit the potential of the new ways of working to enhance opportunities for individuals and enterprises alike. It also means adopting a new outlook in which ageing populations are seen as more than just beneficiaries of technology, but also as drivers of technological innovation and economic growth in their own right.

The economic imperative for policy reform and cultural change around population ageing and technology is already evident. There will be 1 billion people over 60 by 2020 due to falling fertility rates and increasing lifespans. The world will increase from 7 billion to 10 billion by 2050 – a third of this increase is due to longevity. In OECD countries, within two years, more people will leave the labour market than enter, which will increase stress on national pension and welfare systems.

But at a time when the global economy needs people working longer, data suggests that technological innovation has driven down the employability of older workers who lack adequate information and communications technology (ICT).
skills. Participation in job-related training by older workers in OECD nations is lower than for adult workers, and once unemployed, older workers face a high risk of either never returning to work or remaining out of work for a long period. New ways of working are becoming more widespread, creating greater flexibility for employers and individuals but at the risk of greater job insecurity. The challenge begs for public-private collaboration and solutions.

**Leading the way for a new vision of ageing**

The Organisation on Economic Co-operation and Development (OECD) has led a multi-year effort to bring public and private sector parties together to articulate the challenges and opportunities of rapid population ageing. This was the impetus for the OECD-APEC Workshop, “Anticipating Special Needs of the 21st Century Silver/Ageing Economy” in September 2012. A wide range of stakeholder groups met in Tokyo, Japan and formally recognised the ageing and innovation opportunity. Likewise, a Global Coalition on Aging (GCOA) roundtable series aimed to strengthen the body of knowledge on the relationship between economic growth and ageing populations in emerging markets.

The OECD partnered with GCOA to convene an expert consultation on 26 June 2014 to further international dialogue on a policy agenda to foster the silver economy as a driver of productivity, wealth creation and social value in ageing societies. With the support of hosting partner, Harris Manchester College, University of Oxford, they engaged policymakers, business leaders, academics and advocacy groups on the ongoing barriers and opportunities, and the strategies and reforms needed to make the silver economy a reality. It concluded that attaining the silver economy as a pathway for growth is possible, but not inevitable. One insight focused on the role technology solutions need to play in empowering the ageing by helping build new markets, supporting new work practices and creating connected communities that respond to their needs.

**Policy, industry experts map strategies to maximise the benefits of the digital economy for all ages**

To continue this conversation and accelerate public-private policy solutions specifically around the role of technology in attaining the silver economy, the OECD again partnered with GCOA and Harris Manchester College, University of Oxford, to convene an expert consultation on active ageing in the digital economy on 1-2 September 2015.

The expert consultation opened with welcoming remarks from Ralph Waller, Principal of Harris Manchester College and Pro-Vice Chancellor elect, University of Oxford. The first day was moderated by Sarah Harper, Professor of Gerontology and Director of the Oxford Institute of Population Ageing on Rethinking Global Ageing.

Her keynote reviewed global population ageing trends, and shined a spotlight on how technology could solve 21st century demographic challenges, including health and retirement as long as access becomes more inclusive across different socio-economic and age groups. She warned, however, that predictions can only take us so far, and that we need to be agile and adapt when our hypotheses diverge from reality: In demography we tend to underestimate what is going to happen, while with technology we
overestimate how quickly change will unfold. We need to account for this inaccuracy when exploring at what pace rapid digital transformation will disrupt traditional approaches to education, business and work.

Dr. Harper set the stage for a deeper discussion on the future of work and learning in the digital economy, the topic of the first two panels of the workshop.

Dr. Douwe Korff, Emeritus Professor of International Law, London Metropolitan University moderated the second day of the consultation which was focused on trust in the Internet of Things and how information sharing, reimbursements and cross-sector partnerships can promote innovation that enables active ageing.

Former Prime Minister of Finland, Esko Aho, was invited to provide insights on public-private cooperation in meeting the challenges of global ageing. He posited that public-private cooperation is needed to construct an ecosystem that supports radical changes in digital innovation, risk-taking capacity and education so that 21st century demography is an economic opportunity not a crisis.

The next sections take a closer look at the overarching insights that emerged from the consultation.

| Characteristics of a competitive ecosystem poised to harness global ageing opportunity: |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|

~Esko Aho, Former Prime Minister of Finland

Key Insights

1. The convergence of population ageing and technological innovation is transforming the future of work, enabling and demanding policies that foster flexible career models and age-friendly work environments. Both will encourage people to work longer and fulfill their individual retirement goals.

2. Fostering an inclusive digital economy necessitates public and private incentives for regular reskilling and the use and refinement of new learning platforms that democratise access to knowledge and skills.

3. Robust privacy, IP regimes and security standards will help increase trust in and use of data sharing tools and services that can improve responses to population ageing.

4. To encourage continued innovation that enables active ageing, companies and governments are forging cross-sector partnerships and exploring payment and reimbursement structures that will incentivise innovators to bring scalable solutions in digital health to market and support broad access.

5. Improved research methodologies and coordination between studies are needed for measuring readiness for and progress towards a silver economy.
Insight 1: The convergence of population ageing and technological innovation is transforming the future of work, enabling and demanding policies that foster new and flexible career models and age-friendly work and living environments.

In OECD countries, within two years, more older workers will leave the labour force than younger workers will enter. This trend is reflected in 2013 OECD data, showing that on average only 20% of people aged 65-69 were employed in OECD countries.4

Simultaneously, the world of work is experiencing significant changes as a result of the rapid development of the digital economy and broad technological change. The new and affordable capacities brought by widespread digitalisation are creating new opportunities for older workers. In the “sharing economy,” where flexible work combines with technological innovation – one thinks of Uber, Airbnb or online shopping and commercial exchange – the 55+ demographic is empowered to work and engage in economic activity. Further, from robotics to assist in home care to the use of technology such as robotic exoskeleton suits, technology is enabling older people to engage in a new way. In the U.S., over 30% of Uber drivers self-report as “retired,” – a fact realised without even asking the question and dramatizing the growing movement underway.

Reskilling programs will however, be needed to help older people benefit from the rapidly evolving digital economy, maintain their employability and gain access to better employment choices. Recent evidence indicates that reskilling has resulted in an increase in employment rates of older people in most G20 countries from 2003-2013. These are positive changes, but wide variation in their implementation and success across G20 countries shows that more must be done to support older employees.5

On average, only 20% of people aged 65-69 were employed in OECD countries in 2013.
We have seen an increase in employment rates of older people in most G20 countries...but more must be done.

The private sector is leading the way. New forms of work are emerging in response to the convergence of population ageing and digitalisation of the economy where the conditions exist for technology to enable alternatives to traditional employment models.

The sharing economy attracts older workers by emphasising flexibility and autonomy: New opportunities for ageing workers are arising for example in companies that are finding cutting-edge ways to use digital technologies. A report released by PricewaterhouseCoopers in 2015 estimated that 7 percent of Americans consider themselves providers in the so-called sharing economy. Of those over age 55, 25 percent do.

A separate PricewaterhouseCoopers report estimated that the sharing economy, which totalled about USD 15 billion in 2014, could grow to USD 335 billion by 2025.

“To participate in the sharing economy, one must have some asset to share, such as a house or a car”. An example of this new trend is Uber technologies – a mobile app platform connecting people who want a ride, with those who want to drive them. It operates in 313 cities and 58 countries, and employs 1 million drivers, 25% of whom are over 50.

Uber drivers in the U.S. over the age of 50 said that they particularly value the flexible work opportunities Uber provides. Flexible schedules and low barriers to entry can make it a comparatively easy first step back into the labour market for those looking to escape the “stickiness” of long-term unemployment or who need to care for loved ones at home.
The sharing economy is both reinforcing and leading the trend in flexible work options. According to the U.S. National Bureau of Labor Statistics, 82% of surveyed independent contractors prefer working the way they were to having a traditional job, defined as one with a salary, fixed hours, a boss, etc.

**Flexible work and phased retirement employment trend of the future:**
New data from the 16th annual Transamerica retirement survey of workers shows a growing trend in the U.S. toward flexible working during a phased retirement. According to the online survey of 4,550 American full-time or part-time workers, aged 18 or older:

- The majority of workers plan to work past 65, with 14% having no plans to retire.

- Among the 60s cohort surveyed, 52% plan to work either full-time or part-time after they officially retire. This is roughly the same as the 20s cohort, with 49% planning to work either full-time or part-time after they officially retire.

- Roughly 40% of respondents across all age cohorts plan on transitioning into retirement by either reducing work hours or by working in a different capacity that is either less demanding and/or brings greater personal satisfaction.

With rising expectations of an extended working life will come greater demand for age-friendly work environments. Guiding Principles for Age-Friendly Businesses were laid out by the World Economic Forum in 2015. In practice, age-friendly employers are distinguished by several attributes:

- Accommodate flexible work schedules and arrangements
- Enable employees to reduce work hours and shift from full-time to part-time
- Enable employees to take positions which are less stressful or demanding
- Offer financial counseling about retirement
- Encourage employees to participate in succession planning, training and mentoring
- Provide seminars and education about transitioning into retirement
- Offer lifestyle and transition planning resources
- Provide information about encore career opportunities

**Age-friendly work environments and communities remain largely untested:** Very few work environments are ready for this shift in part because global institutions have only recently begun to promote them. Since "ageism" or negative perceptions of ageing workers remain prevalent, employers, employees, policymakers and whole communities all have a role in changing this trend.

---

The “Uberization” of the economy and “off balance sheet jobs,” where individuals work only for themselves is off the charts – it is one of the fastest growing trends in town.

–Jeff Schwartz, Deloitte

---

Employers do not seem ready for the changes that are already taking place, while many employees want to and need to continue working past traditional retirement age. Work needs to be done to stimulate an environment where adaptability to change is encouraged; governments, employers, and individuals all have a role to play.

–Mike Mansfield, Aegon Retirement Research
**Employers:** Part of the issue is a lack of pride in supporting older workers on the part of employers. Yet, there is growing evidence that this is changing. For example, in New York City, during the first year of a Sloan Foundation Award for “Age Smart Employers” the number of applicants was limited. However, in just its second year, the growth in interest and focus was extraordinary.

New York City, of course, is home to corporations from BlackRock to Pfizer who are among the global leaders of a healthier and more active aging for the one billion of the over 60. The Age Smart initiative highlighted the small business owner, as the driver of the local economy. According to Age Smart award recipient Jay Parker, a third-generation deli owner from Queens, “I don’t see the fuss [employing older New Yorkers]... it’s just smart!” The Deli’s retention of older employees through constant nimble restructuring and reassigning jobs keeps the restaurant competitive and successful. Their retirement savings plan, unusual in the food industry, also helps to keep employees with them as the age.

New York City is a good example where in just one year there has been a dramatic and positive shift. Employers can continue to benefit from the experience and institutional knowledge of their older talent by offering opportunities, work arrangements and training and tools needed for all employees to be successful, providing greater levels of assistance in planning employee transitions into retirement and allowing workers to phase into retirement.

**Employees:** Another barrier is a lack of awareness on the part of employees on what an age-friendly work environment is and their willingness to stay or engage with employers that are not age-friendly. According to the 2016 Transamerica survey, 23% of workers did not consider their employer to be age-friendly, while 32% were not sure. Yet, even here, new efforts are driving employers to harness the potential of their employees, for example, the small businesses honored as part of the Age Smart Awards and the WEF Guiding Principles for Age-Friendly Businesses, which are now embraced by companies as diverse as Intel Home Instead Senior Care, Deloitte Philips and McGraw Hill Financial.

**Policymakers:** Governments can identify and address any outdated public policy barriers to working longer, retire at an older age and transition into retirement. They can also encourage employers to offer retirement benefits to all employees and especially part-time employees who are less likely to have access to benefits. Policy must also focus on reshaping communities to include seniors who wish to remain in the labour force.

---

**We must rethink the workplace, workforce, the work experience, commute and the nature of the work. I don’t know a single organization that is focusing on the work and social values of the elderly person.**

—Robert McNulty, Livable Communities
Simple steps to reshape communities with a big impact:

- **Rethink zoning laws**: Enact multiple purpose zoning, so we can mix residential areas with business areas and abandon the vehicular commute and strict ideas of work hours.

- **Provide more support for caregivers**: Allow for a dual life in which workers can balance a job with an informal caregiving role at home.

- **Create multi-use facilities for training and care**: Turn the public library into a technology and social media training hub for older workers; open museums and churches to dementia patients and caregivers as places to meet and learn how to become dementia-friendly; incentivise local banks to form partnerships to train financial literacy for low-income and older populations. Good models include the WHO's Age-friendly Cities and Communities program including nearly 300 participating locations and the Dementia Friends scheme first launched in England in 2012.

**ICT adoption makes reforms more critical**: Information and communications technologies (ICTs) could generate some "skill bifurcation": it may eventually raise the skill level of workers in complex jobs whereas it may have a deskilling effect on workers in low-skilled jobs. Nonetheless, available evidence suggests that, on average, ICT adoption generates an increase in the demand for communication and analytical skills. Age-friendly policies will thus become even more important as the costs of ICT go down and their adoption rate increases across industries. Those working in increasingly ICT intensive jobs that have lower ICT skills will benefit from employers and communities willing to invest in training and up-skilling. Older workers are disproportionately impacted by the adoption of ICTs in terms of maintaining or getting a job that requires ICT skills.

---

*Older workers tend to lack the appropriate ICT skills and show a lower degree of adoption of new technology in their private and professional lives.*

---

~Michael Polder, OECD

---

**Percentage of workers whose lack of computer skills have affected their chances of getting a job, promotion or pay raise, by age, 2012 (PIAAC)**

**Percentage of workers who reported lack of computer skills to do their job well, by age, 2012 (PIAAC)**
Insight 2: Fostering an inclusive digital economy necessitates public and private incentives for regular reskilling and the use and refinement of new learning platforms that democratise access to knowledge and skills.

As the cost of ICTs falls and more industries adopt them, it will change the “skill mix” of some traditional occupations and create new ones. The breadth and speed of such changes call for more frequent on-the-job training across the whole work life and higher responsiveness of educational systems to the demand for new skills, including new curricula in formal education. Getting this right is critical to ensuring that all ages are included in the digital economy and older workers, specifically, are able to contribute toward a prospering silver economy.

Incentivising reskilling amongst older workers through public policy solutions: As previously stated, older employees are at heightened risk of being left behind amidst these rapid changes for several reasons: They tend to have lower levels of digital readiness – skills and trust in ICTs and their applications; participation in job-related training by older workers is lower than for adult workers; and once unemployed, older workers face a high risk of either never returning to work or remaining out of work for a long period.

Governments and business can pursue public policy solutions focused on incentivising reskilling of older workers. Some of these approaches include:

- Encouraging increased investment in lifelong learning at mid-career.
- Adapting teaching methods and content to the needs of older workers through, for example, the provision of short, modular courses and the recognition of prior learning and acquired experience.
- Promoting later retirement in order to encourage greater investment in training of older workers by raising the potential return on this investment through longer expected pay-off times.

A number of OECD countries have implemented some of these policies over the past several years, particularly pension reforms to ensure later retirement. Countries like Denmark, France, the Netherlands, Norway, Poland and Switzerland have adopted programs to relate continuous learning more closely to work as an integrated part of age management, and they show promising signs of becoming institutionalised reforms.

New learning platforms at the center of reskilling: Education systems are becoming key partners in private-public sector initiatives to reskill workers. But just as they are being called on to support employers and employees in their changing work environments, they are undergoing rapid transformation themselves. Education is quickly being decoupled from institutions in a phenomenon called “learning off leash.” Today, we have the opportunity to study any subject from...
elementary to college for free because of online seminars and curated teaching sites designed for self-directed learning.

Businesses are already harnessing “unleashed learning” as a means to encourage lifelong and adaptive learning that is highly customised for the individual learner. We are seeing partnerships emerging between digital learning organisations, industry and traditional post-secondary institutions as well as new degrees, credits and certificates to reward positive digital learning outcomes and continuing education efforts.

A number of challenges have yet to be solved for given the rapid pace of experimentation and adaptation in digital learning, which could impact program success rates and outcomes. Some of these include quality assurance, lack of standards and interoperability, trust and privacy, cross-border, patent, copyright restrictions, as well as prohibitive costs and access. For digital learning to succeed, we need to do much more to make it easy for those without digital skills to acquire them or to make the tools so easy to use that the barriers to their use are substantially lowered.

**Examples of business solutions for older customers:** There is also a great deal of learning needed amongst older populations to support their transition into retirement, including for long term financial sustainability and solutions.

- **New information technologies can help customers understand and manage their retirement risk:** Pension systems differ throughout the OECD countries as each system reflects in a certain way a specific institutional arrangement. Still there are some features which most of these systems contain, and similar developments can be observed as many countries are faced with the same general challenges regarding pension sustainability and adequacy. In general, it is useful to distinguish different pension pillars: a public mandatory old-age pension, occupational pensions and private savings plans. Demographic projections imply that the pension costs will increase in the future and hence constitute a strain on the public and private budgets. The financial crisis has further aggravated this situation. It has shown how vulnerable pension schemes based on capitalisation can be. In recent years, we have thus seen the transfer of retirement and pension liabilities from the corporate to the individual balance sheet. Old age risk is increasingly borne by individuals through savings in occupational and private pensions plans. Yet, individuals are not given the tools to understand this responsibility. Financial asset manager BlackRock has developed an investment framework to help individuals better understand and manage their retirement risk to do this, BlackRock has developed a user-friendly application to deliver personal risk profiles by analysing different data points, including asset evaluation and mortality predictions, so people know how to spend based on how much they have and how long they will likely live. Roughly 43% underestimate how long they are going to live by more than 5 years.

**For digital learning to succeed, we need to do much more to make it easy for those without digital skills to acquire them or to make the tools so easy to use that the barriers to their use are substantially lowered.**

---

**Elliot Maxwell, Independent Consultant**

As a society, we have moved the liability side to the individual, but we are not giving individuals the tools to understand this responsibility. Nobody knows what their retirement liability is – it is like having a house and not knowing your mortgage.

---

**Chip Castille, BlackRock**
• **Education partnership and new technologies can help protect clients from their greatest fear – cognitive decline:** Bank of America Merrill Lynch (BAML) is approaching longevity in a unique way in order to respond to the changing needs of its client base. Based on the demographics of its client base, most are thinking about what they are going to do with life after work. Through market research, BAML learned that Americans’ biggest health concern regarding ageing is developing Alzheimer’s disease because it means the loss of freedom and dignity.

In response, BAML partnered with University of Southern California and created a longevity certification program for employees in order to help clients prepare proactively for a longer life and the opportunities and challenges a longevity bonus may present. BAML also has developed an Elder Care program, which is a referral service that directs clients to a provider that can find nursing homes for elders in clients’ families.

Fast-paced change in learning platforms and reskilling needs will necessitate constant adaptation and agility as new models are put to the test by governments, businesses and individuals. From the consultation emerged some additional lessons from the new, complex learning environment:

- **Education and training should focus on strengthening higher level cognitive skills:** Although digital skills for using computers and other digital devices are also important, the past two decades shows that these skills are relatively easy for most adults to learn without much formal instruction once they have reason to do so. In contrast, only a small portion of adults has higher level cognitive skills, such as literacy and numeracy that involve interpretation and problem solving, despite substantial education and training efforts in most countries.

- **New learning approaches can kick-start the next big thing:** Learning opportunities can come through gamification and “edutainment” rather than through traditional, linear cognitive-based skill acquisition. China – the largest silver marketplace in the world – is experimenting with “silver” crowdfunding, hackathons and innovation competitions in the hope of kick-starting the next big thing.

- **Reaching the underserved:** Efforts of financial services institutions are focused on those with sufficient assets, leaving large numbers of 60+ without financial literacy. A policy challenge will be to find ways to provide incentives to reach those who remain underserved.

- **Don’t underestimate people over 60:** Some older cohorts are proving to be tech savvy, with many using technology to create their own businesses. The Cloud has opened a world of opportunities as has social media for transporting old Rolodex networks and expanding them exponentially. It is critical to undo perceptions that the older population is too old to go digital.
Insight 3: Robust privacy and security risk management practices will help increase trust in and use of data sharing tools and services that can improve responses to population ageing.

The proliferation of new technologies connected to the Internet has created an entire network of physical and virtual objects that can collect and exchange data – the Internet of Things (IoT). It is forcing policy debate around whether the challenges that IoT poses can be managed within existing privacy, data protection, security and corporate governance laws and frameworks.

The downside of more data everywhere: Data collection and sharing comes with a number of security and privacy risks that can erode trust and wreak havoc on victims of compromised data. The stakes are particularly high when medical and healthcare data are at risk.

A pressing problem is that security systems are out-of-date and apply to old-fashioned ICTs. These systems do not easily translate to the small devices that the IoT is built around. Creating better security systems for new IoT products and services is expensive, time-consuming and complex. Many companies are opting not to do it. In response, regulators are responding by holding back innovation because of liability concerns.

Take the goldilocks approach: Failure to find a balance between security and privacy on the one hand and innovation and information sharing on the other will result in a huge lost opportunity. Too much regulation risks stalling collaboration and ingenuity that goes into new discoveries. But without some regulation, users will decline to participate in this new market, especially the ageing, who are already apprehensive about adopting data sharing products and services.

- A Federal Communications Commission study from 2010 found that 40% of older non-online adults said they were worried about the "bad things that could happen online", while 50% said it is too easy to have personal information stolen online.
- For older online adults, 38% say safety, security or privacy of personal information keeps them from doing more online, according to a 2015 Hart Research study.

That is why privacy and data protection cannot be seen only as regulation that hampers innovation. Taking users’ trust for granted will kill innovation as effectively as over-regulation. The goalpost should be building fully privacy- and data protection-compliant products and services, designed to be compliant by default as well as robust security risk management practices.⁷

- The private sector’s role is to build and implement these protections. This is no minor ask given that improving and adapting security systems for these new products and services will cost money and make some of them more expensive and less efficient.

- The public sector’s role is to provide clear standards, ensure regulation and trust, coordinate implementation across governments and organisations, and fund skills training and research to prove the effectiveness of the new policies and practices.

Adopting these new roles and fundamentals will take a profound cultural shift, but the benefits are enormous if we strike the right balance.
Insight 4: To encourage continued innovation that enables active ageing, companies and governments are forging cross-sector partnerships and exploring payment and reimbursement structures that will incentivise innovators to bring scalable solutions in digital health to market and support broad access.

The Internet of Things (IoT) has created a new era of innovation, opening up a host of opportunities to build and deliver tools, services and platforms that will keep people connected socially, feeling safe and living independently as they age. These solutions take a number of forms, from wearables and sensors that monitor health indicators to telehealth platforms that allow people to consult with their doctors via technology from the comfort of their homes. This technology enables remote patient monitoring that will lead to better and earlier detection and diagnosis of disease. It will enable aging in place and better care for people of all ages with limited mobility. The greatest promise is of improved chronic disease management and care, improved monitoring and well-being for the growing 60+ population. Harnessing this opportunity in part rests on companies and governments forging diverse partnerships that enable new ways of looking at and using health, behavioural and environmental data to solve practical needs of ageing populations around the world. Products and services emerging from the IoT are showing promising results as they attempt to keep seniors safe, active, connected and independent.

- **MAS Holdings** – South Asia’s largest apparel and textile manufacturing group – is leveraging its expertise in material science, biomechanics and technology integration to assist seniors in sports and fitness and health and wellness. The group’s goal is to create seamlessly integrated apparel solutions that protect, augment, monitor and empower the human body. Through strategic partnerships, they are working to make wearables affordable, simple, convenient and invisible, and a useful engine of self-expression and empowerment. One example is a cardiac monitoring apparel solution developed in partnership with Nanowear.

- **Intel** is using data collected from the IoT to address life challenges facing ageing populations such as loneliness, falls, chronic disease management, hospital readmissions and transportation. Data acquisition and analysis at the city level has enabled Intel to design environmental monitoring systems that provide customised, real-time intelligence and alerts for stakeholders. Its system of “smart” devices communicate wirelessly, enabling remote patient monitoring through wearable devices and predictive analytics. Cross-sector partnerships from a number of fields – neuroscience, design thinking, technology, regulatory, etc. – has been key to success as diversity of expertise helps create more specialised solutions.

> At a moment of unpredictable challenges for health...one trend is certain: the ageing of populations is rapidly accelerating world-wide...the greater costs to society are not expenditures made...but the benefits...missed if we fail to make the appropriate...investments.  
> ~Dr. Margaret Chan, World Health Organization

> The wearable revolution is the design of wearables as useful engines of self-expression and empowerment, yet seamless and invisible to the eye.  
> ~Tehani Renganathan, MAS Holdings

> The proliferation of connected devices driven by the fact that the cost of sensors is in rapid decline and the ability to monitor sensors is increasing is noteworthy.  
> ~David Prendergast, Intel Collaborative Research Institute for Sustainable Connected Cities
- **Philips Lifeline** is evaluating changes in the care ecosystem being driven by digital technologies in order to build a care continuum from healthy living to prevention, diagnosis, treatment, recovery and home care. It analyses this continuum from the perspective of seniors, caregivers, peers and providers in order to improve care coordination and bring a number of products to market, including telehealth solutions that reduce the cost of care, increase medication adherence and decrease hospitalisations.

This is good news for homecare recipients and caregivers as well as professional homecare service providers such as the US-based **Home Instead Senior Care**, which trains caregivers in the latest technologies to provide efficient, cost-effective homecare solutions that lessen the burden of caregiving.

- **GE** is taking a comprehensive approach to population health – one that uses technology and data to create an integrated, connected ecosystem centred on the unique needs of different communities. It builds on the ideas and principles embedded in conventional public health strategies, but applies them across communities to enable healthier ageing and leads to more sustainable communities.

Insights from these innovative solutions can contribute to solving big data challenges that are preventing progress in finding a cure for Alzheimer's and other chronic diseases that increase with age as discussed at the 2013 OECD-GCOA expert consultation. They will also help reduce hospitalisations and inefficiencies in national health systems that are driving up health expenditures and putting in question their long term sustainability and affordability.

**New payment structures needed to incentivise innovation that solve 21st century health challenges:** The development and scaling of innovative digital tools and services will depend on new payment structures and agreements that encourage investment in this cutting-edge field. Demand for new services is expected to rise, in part due to increasing life expectancies and population ageing, but also because today's older people have higher expectations that their needs will be met and that they will have a good quality of life. The 60+ global consumer group will have a projected spending power of USD 15 trillion by 2020. This economic power is unequal across socio-economic lines and geographic boundaries, however, with 80% of older people living in emerging markets by 2050. In countries with limited public care coverage, people are left to face the cost of ageing on their own. Since costs are unpredictable and can be very high, this can lead to financial hardship or needs not being met. The 21st-century demographic phenomenon means that governments around the world will need smart public policies to address inequities in access and affordability.

Our current capabilities with telehealth and other digital solutions are just beginning. We have to be willing to ensure innovators are compensated if we expect continued progress. This is as important for digital technology to enable longer working and active lives as it is for health enablers such as telehealth and telemedicine that can be game-changers for healthy ageing. We are at a critical stage in development – a stage that needs the right public policies that offer incentives for innovations that will yield limitless benefit.
Insight 5. Improved research methodologies and coordination between studies are needed for measuring readiness for and progress towards a silver economy.

Knowing what policies, products and services are helping build a silver economy relies on accurate data and standardized measurements. Rigorous methodologies, longitudinal studies and standardisation are largely absent or subpar in the areas where demography and digital technologies intersect. Setting an international measurement and research agenda for ageing and technology is vital for informing policy design, public and private investment and interventions.

In order to improve the evidence base, governments and organisations need to foster international co-operation and coordination around indicator development, data collection and research programs. Specifically, we need:

- Coordination between studies on demography, health, macro- and labour-economics, privacy and security, and innovation carried out by relevant international organisations and institutions.

- Co-operation between the research/academic and business sectors.

- New legal frameworks for sharing data across national boundaries and research guidelines for ensuring data interoperability.

There are certain gaps in data around ageing and technology that have serious implications for economic performance and creating an inclusive digital economy:

- We currently have poor measures to determine levels of ICT skills or assess how important they are to individual performance in the digital economy. We need to begin tracking digital skills in a serious and systematic way as these skills will constantly need to evolve together with technology.

- We lack systematic information, policy analysis and evaluation, particularly around digital learning and training. This research is necessary to address the skills mismatch and to create personalised learning environments. It remains unclear beyond anecdotes and pilots what actually works and for whom.

- We do not have enough longitudinal data to make informed decisions based on trends. This had led to inaccurate predictions, particularly in regards to the rate of change in both demographic shifts and technological innovation.

- The impact of ICTs on workers by age is largely unknown and the validity of the data around different kinds of skills is at present debatable because of controversial basic assumptions and models.

There is a scarcity of research proving the effectiveness or non-effectiveness of certain policies. The general challenge in the research field is determining if we are using adequate rigour. Randomized control trials are concerning as is our continued obsession with peer-reviewed journals that puts scientific progress behind where it might be. There is a mismatch between peer reviewed and scientific rigour.

~David Glance, University of Western Australia
• New research is needed to measure the impact of home-based technologies on the ability to delay entry into long term care facilities.

• It is difficult in the digital world to evaluate emerging new products and services or to create quality control measures because experimentation is high.

Conclusion

Evidence shows that growing some segments of the 60+ demographic are active participants in the digital economy and are profiting from the benefits it yields. This report has discussed the growing opportunities of the digital economy in ageing societies, to support extended work life, re-skilling and anticipate the care needs of older populations through—telehealth and telemedicine, wearables and sensors, as well as and digital learning platforms including financial planning tools and services.

But there is still far more to be done to ensure engagement in the digital economy becomes the norm across all demographics, old and young. The experts at this consultation raised a number of ongoing challenges: Security, privacy and trust concerns; imperfect digital learning platforms; and the absence of mechanisms to incentivise reskilling and innovation.

The first step toward addressing these challenges and achieving an inclusive, innovative digital economy is wide-scale acceptance—among governments, corporations, individuals and communities—that economic growth in the 21st-century and the inclusion of all ages in the digital economy are inextricably linked. A paradigm shift of this magnitude will create the ecosystem where innovation that enables healthy, active ageing across the life course thrives. The silver economy hangs in the balance.

REFERENCES

5 Ibid., 3.