The Aging Readiness & Competitiveness Report
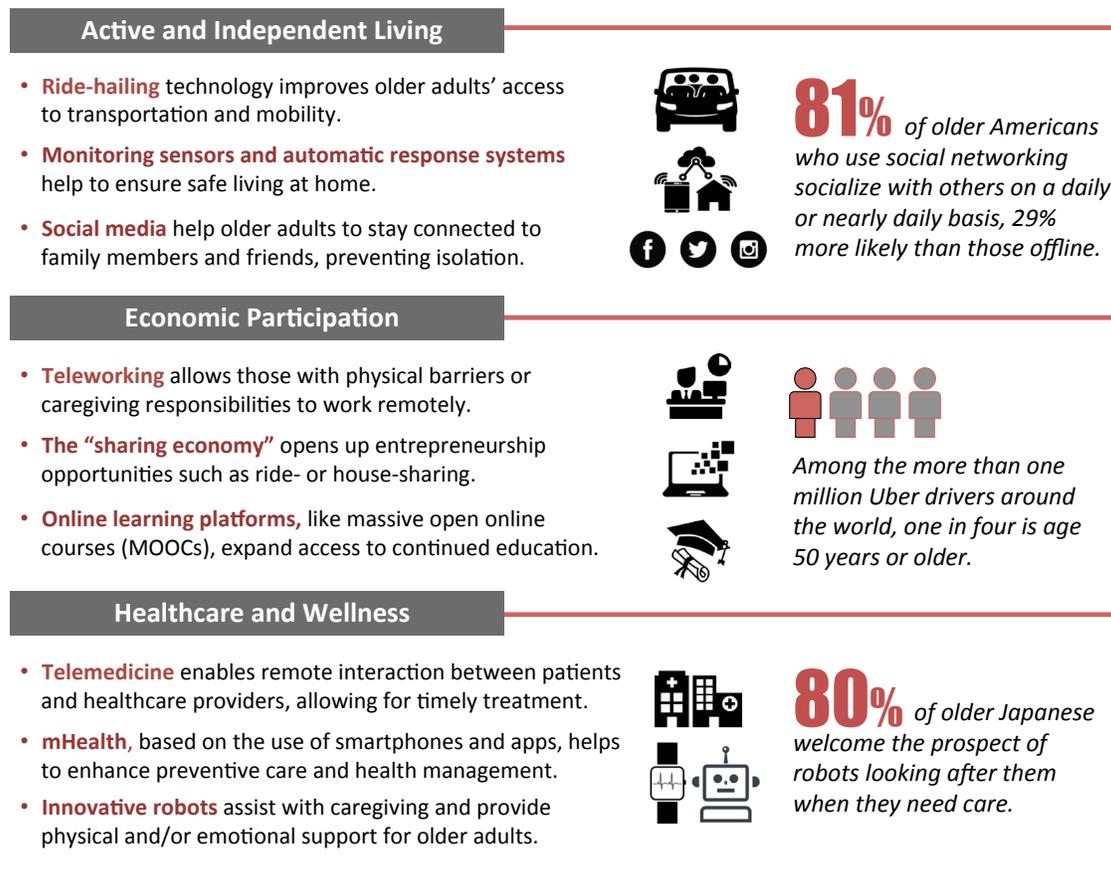
TECHNOLOGICAL ENGAGEMENT

Introduction

Globally, the aging trend is converging with a wave of technological advancements that could transform the economic and social engagement and health of older people – reducing costs, increasing access, and creating a unique opportunity to turn aging into a pathway for growth. However, older adults remain the most vulnerable to digital exclusion. Still relatively small-scale in most countries, work is beginning to close the gap by helping older adults realize the value of technology and promote digital literacy, as well as developing technology-driven products and services for this market, including from the private sector, which has been driving much of its growth.

Fig. 1. *Digital technology can influence every aspect of older people's lives.*

Active and Independent Living

- **Ride-hailing** technology improves older adults' access to transportation and mobility.
- **Monitoring sensors and automatic response systems** help to ensure safe living at home.
- **Social media** help older adults to stay connected to family members and friends, preventing isolation.

81% *of older Americans who use social networking socialize with others on a daily or nearly daily basis, 29% more likely than those offline.*

Economic Participation

- **Teleworking** allows those with physical barriers or caregiving responsibilities to work remotely.
- **The "sharing economy"** opens up entrepreneurship opportunities such as ride- or house-sharing.
- **Online learning platforms,** like massive open online courses (MOOCs), expand access to continued education.

Among the more than one million Uber drivers around the world, one in four is age 50 years or older.

Healthcare and Wellness

- **Telemedicine** enables remote interaction between patients and healthcare providers, allowing for timely treatment.
- **mHealth,** based on the use of smartphones and apps, helps to enhance preventive care and health management.
- **Innovative robots** assist with caregiving and provide physical and/or emotional support for older adults.

80% *of older Japanese welcome the prospect of robots looking after them when they need care.*

(Sources: OECD; Pew Research; Neumann, D.; FP Analytics)

The Promise of Digital Transformation

The world is entering the era of digital technology with rapidly expanding connectivity and disruptive technological advancement. Today, almost half (48 percent) of the global population is using the internet – six times greater than that at the beginning of this century.[1] This upsurge has been predominantly driven by the dramatic growth in access to mobile networks and devices

(Fig. 2). The transition from 2G to 3G and higher-quality mobile networks, coupled with increasing prevalence of smartphones, tablets, and other smart devices, has further facilitated effective delivery of internet services.[2] Meanwhile, the latest technology advances – increasingly featuring the coordinated use of sensors, data, automation,

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[1] ITU Statistics. Accessed December 2017.

[2] International Telecommunication Union. (2017). *Measuring the information society report 2017 – volume 1*. Geneva, Switzerland.

Fig. 2. *The global subscriptions of mobile phones have doubled over the past decade, while subscriptions of fixed-telephones have shrunk, and active mobile-broadband penetration has surged, substantially outpacing fixed-broadband.*

Subscriptions per 100 persons
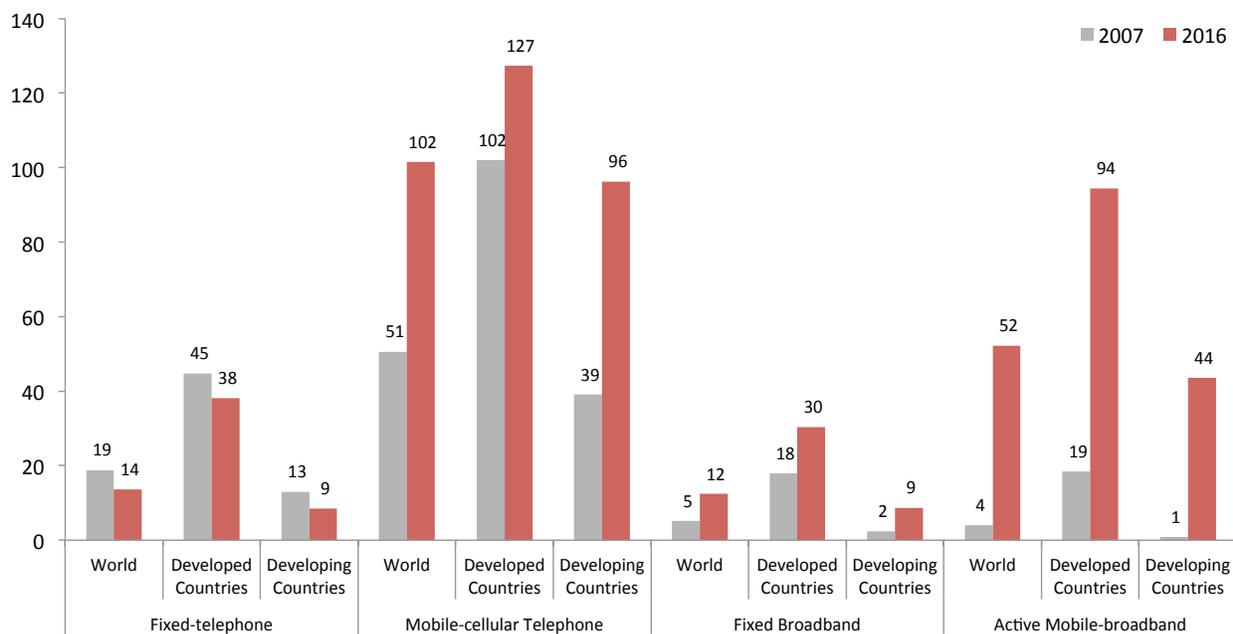
(Sources: ITU Statistics; FP Analytics)

computation, software, and networking – have opened manifold possibilities to the ways in which people live, work, and communicate.

Digital technology has the potential to be a power force multiplier for all aspects of older adults' lives, ranging from assisting their independent living, to advancing economic participation, and to improving access to and quality of health and social care services (Fig. 1[3]). The tremendous underlying market opportunity and social benefits have drawn increasing interest from the private sector – particularly technology startups – and governments of aged societies, with Japan leading the pack as it seeks effective practices to integrate

[3] OECD. (2015). *Promoting active ageing in the digital economy: inclusion, adaptation and innovation*. Pew Research Center. (2014). *Older adults and technology use*. Neumann, D. (2016). *Human assistant robotics in Japan: challenges and opportunities for European companies*.

Box 1. Japan to Build "Smart Platinum Society"

A global leader in information and communication technology (ICT), Japan is pioneering the promotion of an ICT-enabled society, or what it calls "smart platinum society," to support its independent, active, and healthy older population through the use of robots, big data, and the Internet of Things. One innovative project experimenting with mainstreaming ICT is found in Otsuki, a small city that is located near Mount Fuji – around 50 miles from Tokyo. Thirty-five percent of the local population is age 65 or older, and many are engaged in farming. The project was launched in 2014 by the municipality, in collaboration with NTT DoCoMo and Waseda University, and consists three components:

- **E-Agriculture** connects the local farming industry with people residing in urban areas, like Tokyo, through digital technology. People residing in Tokyo can rent farming fields in Otsuki, and by using sensors, the internet, and digital cameras, they monitor the fields remotely and communicate with local farmers who are entrusted with daily maintenance;

- **E-Tourism** aims to attract tourists to visit the city on their way to Mount Fuji through online campaigns that promote scenery photos and tourism information, with the help of Tourism Agency in Tokyo;

- **E-Health** uses digital networks to enable local people, including seniors, to use a digital device to monitor health status and send data to medical care providers.

While pilot funding provided by the central government ended in 2016 as planned, the local government has continued with the program in recognition of tangible benefits achieved during the pilot phase.

digital technology into every possible aspect of its super-aged society (Box 1).

However, the digital transformation has yet to live up to its potential. While older adults are among those who could benefit the most from technological advancements, they have lagged on the adoption of technology. Closing this gap and unlocking the potential requires the promotion of digital inclusion among older adults and engagement from the private sector to provide products and services that meet older adults' interests and needs.

Digital Inclusion

Realizing the potential of digital transformation will require breaking through the digital divide. Older adults have proven to be eager adopters of technologies that offer clear benefits, but they are often unaware of these benefits or lack the skills and confidence to access them. Relatively small-scale efforts around the world are experimenting with ways to best overcome these obstacles and are demonstrating the potential of relatively low-cost, tailored training.

The Digital Divide

While adoption of digital technology has been growing across age groups, a significant and stubborn divide persists between older and younger populations. As of 2016, the internet usage among people ages 65 through 74 was 63 percent on average across OECD countries, but still only three-quarters of the general population. There has been heartening progress in the last decade. Across OECD countries, internet users as a percentage of people ages 65 to 74 has more than doubled over the last decade, and the differential in internet usage between this group and the general population (ages 16 through 74) has shrunk by nearly 30 percent.[4]

ARC countries are no exception (Fig. 3). In every country, older adults are notably lagging the general population in internet usage. In Japan, which boasts one of the highest internet penetrations in the OECD, the percentage of people ages 60 through 69 using the internet was one-fifth lower than that of the population ages 16 or older. Meanwhile, in China, which has the largest digital divide among the ARC countries, the percentage of people age 60 or older using the internet was less than one-quarter of that of the total population as of 2016.

Depending on socio-economic and cultural contexts, a number of factors can explain the digital divide, ranging from low income and educational attainment levels to social isolation and psychological barriers.[5] To close the adoption gap, a primary challenge is enabling older adults to understand the benefits, coupled with tailored training to build the confidence and skills to use new technological tools.

Demonstrating the Value of Technology

Contrary to the common perception that attributes the digital divide to older adults' resistance to trying new things, they are actually eager adopters of technology

[4] OECD Science, Technology and Industry Scoreboard 2017.

[5] International Telecommunication Union. (2016). Measuring the information society report 2016. Geneva, Switzerland.

Fig. 3. *Consistently, older adults are lagging the general population in using the internet, while the gap varies significantly by country.*

Internet Users as a Percentage of Population, by Age Group (2015 or nearest)[6]

■ Ages 16–74   ◆ Ages 55–74
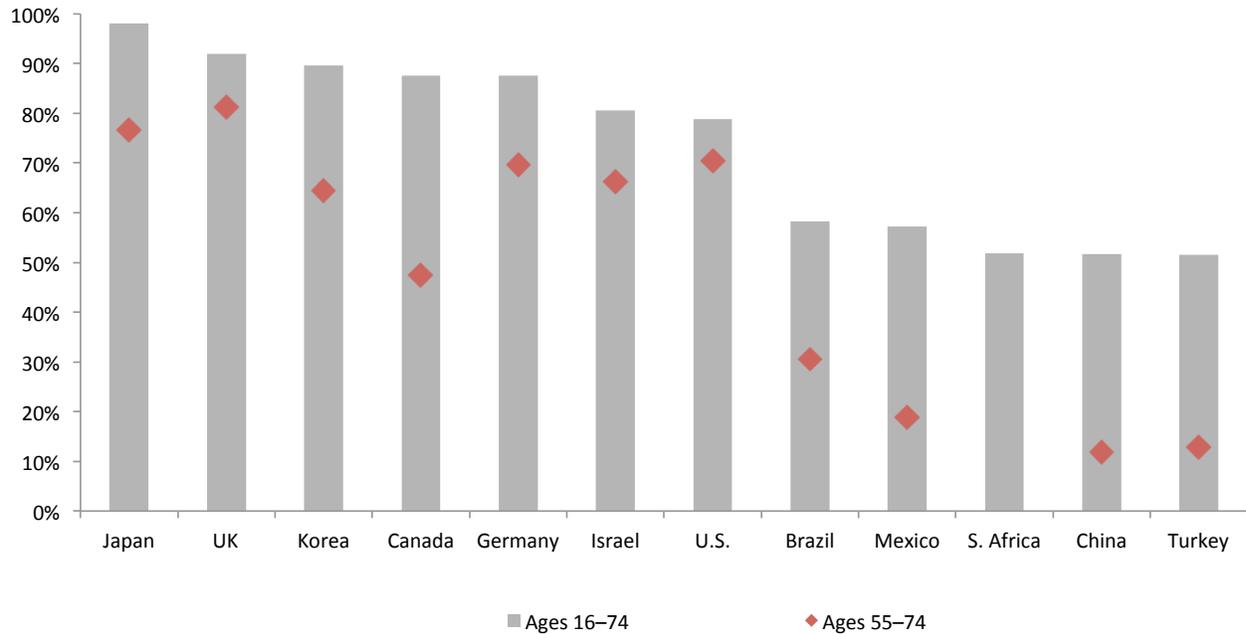
(Sources: OECD;[7] CNNIC; FP Analytics)

[6] Notes: 1) For Canada, data refer to 2012, as well as people ages 16 and over (instead of ages 16 through 74) and ages 65 and over (instead of ages 55 through 74), which could underestimate the country's actual adoption levels compared with the other countries. 2) For Japan, data refer to people ages 15-69 and ages 60 through 69. 3) For South Africa, data for ages 55 through 74 are missing. 4) For China, data refer to the status as of June 2016 as well as to the total population and people ages 60 and over. 5) Internet users are defined for a recall period of 12 months for Japan and Canada, and three months for the other countries except China and South Africa, for which no time period is specified.
[7] OECD Science, Technology and Industry Scoreboard 2017.

when they see its clear benefits to their lives. This was repeatedly stressed by experts working on the ground directly with older adults. In Canada, as observed by Azi Boloorchi, Director of Innovative and Strategic Partnerships at Revera (a company focused on older-age care), "older people tend to have some resistance when first introduced to the technology, but once they recognize the benefit, particularly of technology that is very easy to use and adaptable, they are very eager to use the devices and services that improve comfort and quality of life." In Turkey, Kuzeyhan Ozdemir, former president of the Turkish Seniors Association, echoed that although many older adults show little interest in learning complex computer skills, "they are eager to learn how to use the internet and

video chat, as they help them to keep in close touch with their children and grandchildren."

These expert observations are reflected in the relative success of social media and other digital tools in enabling communication among older adults, which in turn have acted as gateways to other digital technologies. Since 2011, over 90 percent of OECD countries with data available have seen the growth in online social networking usage outstrip that in internet usage among the population age 55 through 74.[8] In the U.S., which has the smallest digital

divide among the ARC countries, older adults who obtain news on social media engage with news on these platforms at similar rates as those of ages 18 through 29.[9] The growing popularity of social media also boosts the use of smartphones. As observed in Korea, the percentage of people age 65 or older who use smartphones and other smart devices surged by nearly two-thirds to 25 percent during the period from 2014 through 2015. According to a 2015 study by the Korea Internet and Security Agency, many older adults now access the internet primarily through their

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[8] OECD Dataset: ICT Access and Usage by Households and Individuals. Accessed December 2017.

[9] Pew Research Center. (2017). *Tech adoption climbs among older adults*. Retrieved from: http://www.pewinternet.org/2017/05/17/tech-adoption-climbs-among-older-adults/

Box 2. Senior Planet Exploration Center in the U.S.

Older Adult Technology Services (OATS), a U.S. social-impact organization, launched the Senior Planet Exploration Center in 2013 to use digital technology to help older adults stay connected, work, and live independently in the digital era. The Center is centrally located in Manhattan and outfitted with state-of-the-art digital technology. It not only provides training courses on how to use the internet and devices like PCs and iPads, as traditional training centers do, but also shows older people how to use technology for social engagement. One interesting initiative is "Team Senior Planet," where older adults learn exercise techniques with the assistance of devices such as Fitbit. Through another initiative called "Money Matters," older adults are shown how to do online price comparisons and use resources like e-commerce to save money or earn extra income. The Center has also hosted various events to inspire creativity among older people, such as developing digital art.

The Center, together with its 23 satellite technology labs, serves around 20,000 older residents in New York City each year. It is a comprehensive ecosystem that includes facilities, curriculum, training staff, volunteers, and various local partners. As the program has proven to be so successful, OATS is seeking to replicate and expand this model in other states and outside the U.S. In 2015, it opened a second Senior Planet Exploration Center in Plattsburgh, a town in upstate New York. OATS is also working with the government of Israel to develop a model that is tailored to the needs of older adults in that country.

smartphones, with the main purpose of using social networks, such as the Kakao Talk (an instant messaging app), to communicate with their children and friends.

There is no better way to raise older adults' awareness of the usefulness of technology than to demonstrate it, with direct application to their lives. In Turkey, which has the lowest percentage of older people using the internet within OECD, Turk Telekom, in collaboration with UNDP and a Turkish NGO, launched the "Life Is Simpler with Internet" project in 2013. The initiative provides training to people age 35 or older, demonstrating basic internet use, e-government applications, video communication, online banking, and social media. As of 2016, it had provided workshops in 50 cities to more than 21,000 participants, with the goal of increasing the number to 30,000 in 2017. One of the most innovative programs can be found in New York – the Senior Planet Exploration Center, a pioneering tech-themed community center focused on introducing digital technology to older adults. Claiming to be the first of its kind, the Center provides an effective, replicable model (Box 2).

Improving Digital Literacy

For older adults who are interested in technology, a lack of skills is the primary obstacle across countries, independent of income level. According to the Pew Research Center, 73 percent of older Americans need help using electronic devices, higher

than any of the other age groups.[10] In Brazil, a lack of computer skills is the top reason that older adults do not use the internet, cited by 71 of respondents in a 2016 survey by the Center of Studies on Information and Communication Technologies.[11] Similarly, a 2015 study by the Chinese Wuhan University found that a lack of skills is the most important reason for people age 60 or older not to use the internet.[12]

Access to digital technology is often viewed through the lens of hard infrastructure, and where digital literacy programs exist, they more often target vulnerable groups as a whole, rather than being specifically designed for older adults. This approach has proven to be ineffective in engaging older adults in training. Brazil offers a useful lesson. The government uses public access centers to provide internet access to the general public and, in some cases, to offer computer sessions to communities. A 2013 survey showed that 62 percent of the users of public access centers were ages 16 through 24, while people age 60 and older only accounted for 4 percent. The substantial under-representation of older adults among the beneficiaries is partly attributed to their fear of losing

[10] Pew Research Center. (2017). *Tech adoption climbs among older adults*. Retrieved from: http://www.pewinternet.org/2017/05/17/tech-adoption-climbs-among-older-adults/.
[11] The Center of Studies on Information and Communication Technologies. (2016). *ICT household survey*. Retrieved from http://www.cetic.br/tics/domicilios/2016/individuos/.
[12] jyb.cn. (2015). *Survey report on middle- and older-age people's use of the internet*. Retrieved from: http://www.jyb.cn/china/gnsd/201509/t20150915_637072.html.

dignity in an environment that is dominated by young people and lacking in activities targeted to them.

Training programs that are dedicated to older adults have yielded better results. As older people tend to be apprehensive about new technology, face-to-face assistance or personal instruction is particularly helpful. In addition, a venue exclusively dedicated to older people helps to create a supportive environment and minimize anxiety. Following pioneering organizations – such as SeniorNet, a U.S. NGO that started to specialize in offering digital training to older people in 1980s – efforts to provide tailored training for older adults continue to evolve. The training contents have expanded from computer skills to social media and smart devices usage, and through more diversified formats, such as the aforementioned Senior Planet Exploration Center.

Peer-to-peer training – in which technology-savvy older adults help peers learn digital skills – is a particularly promising model. Germany stands out with the government's elevated efforts in this regard in recent years. Utilizing a "train-the-trainer" approach, the government aims to capitalize on the volunteerism of the older adult community to help provide a feeling of comfort and familiarity for older adults who wish to learn how to use digital technology. Those who are trained function as role models who inspire others to obtain technological training and further develop their own skills. Two recent successes are the Senior Technology Ambassadors initiative and Digital Kompass (Box 3).

Box. 3. "Train the Trainer" Initiatives in Germany

The Senior Technology Ambassadors initiative and Digital Kompass are two examples of the German government's successful practices with the "train the trainer" approach. The Senior Technology Ambassador initiative was launched in 2013 with one-year funding. It involved training a total of 367 senior volunteers, who function as "technology ambassadors" to provide personal support to more than 1,400 people ages 50 through 90 and help them gain the skills to use basic technologies. EUR 20,000 was granted to the organizations selected to participate in the training.

In 2015, the government introduced the Digital Kompass program, taking a step further by using the online portal to provide older adults who are hoping to teach others to use technology with easy access to learning materials. The goal of the portal is to have 1,000 internet groups of seniors by 2018, to serve as "multipliers" by working with the many small senior groups in Germany that are focused on enhancing their digital skills. Since May of 2016, there have been 750 subscribers to the Digital Kompass newsletter and 12,000 visitors to the portal. BAGSO has an evaluation scheduled for 2018 as initial funding is only set to last for three years. BAGSO plans to use this to develop new, similar projects that capitalize on the strengths of Digital Kompass and improve upon whatever weaknesses are identified.

Private-Sector Engagement

The private sector is beginning to recognize the tremendous potential of digital products to meet the needs of older consumers, although this has been limited to markets with high-income consumers. Early efforts have been made to prompt companies to participate in building the aging-related technology market by helping address challenges they may face, ranging from funding to product design and marketing.

Growing Enthusiasm

Globally, the number of older adults is growing faster than the populations of any other age group,[13] and their spending power is projected to total USD 15 trillion by 2020.[14] Among the ARC countries, people age 65 or older in all industrialized economies (except Korea), as well as China and Brazil, are on average spending more than those ages 25 through 64 (Fig 4). As people with higher educational attainment and digital literacy continue to migrate into the older population, they are becoming increasingly attractive as consumers.

Efforts to develop technology-enabled products and services to tap into the old-age market are growing, and telecommunication and health are two areas that have seen the most movement thus far. As the telecom market is increasingly saturated and facing declining growth in subscriptions, telecom companies start to focus on the rapidly growing older consumer market. In Japan, NTT DoCoMo launched a *Raku-Raku* smartphone in 2013, targeting consumers age 60 and older, who account for nearly one-quarter of its customers. The smartphone has large fonts and icons with simplified steps for sending e-mails, and is pre-installed with apps that are designed for an aging user's lifestyle. In South Africa, where the number of mobile subscriptions per 100 persons has exceeded 150 – the highest among the ARC countries, Vodacom recently released a phone specifically designed for older customers who are experiencing vision loss and for those with limited hand functionality. Key features of the phone include general compatibility with hearing aids, a noise-cancellation feature, a voice-reminder feature, and an SOS key alert function.

Health-related technology, ranging from digital devices that monitor users' physi-

[13] United Nations, Department of Economic and Social Affairs, Population Division. (2015). *World Population Ageing 2015* (ST/ESA/SER.A/390).
[14] Euromonitor. (2012). *Boomers as consumers*. Available at: http://www.euromonitor.com/boomers-as-consumers/report.
OECD. (2015). *Promoting active ageing in the digital economy: inclusion, adaptation and innovation*. Retrieved from: http://www.oecd.org/sti/ieconomy/OECD_GCOA%20Report%202015.pdf.

Fig. 4. *Older adults demonstrate stronger consumption power than younger people in high-income countries – with the exception of Korea, which has the highest older-age poverty rate among OECD countries – and the leading upper-middle-income countries, including China and Brazil.*

Per Capita Consumption Ratio of Age 65 or Older to Ages 25 through 64
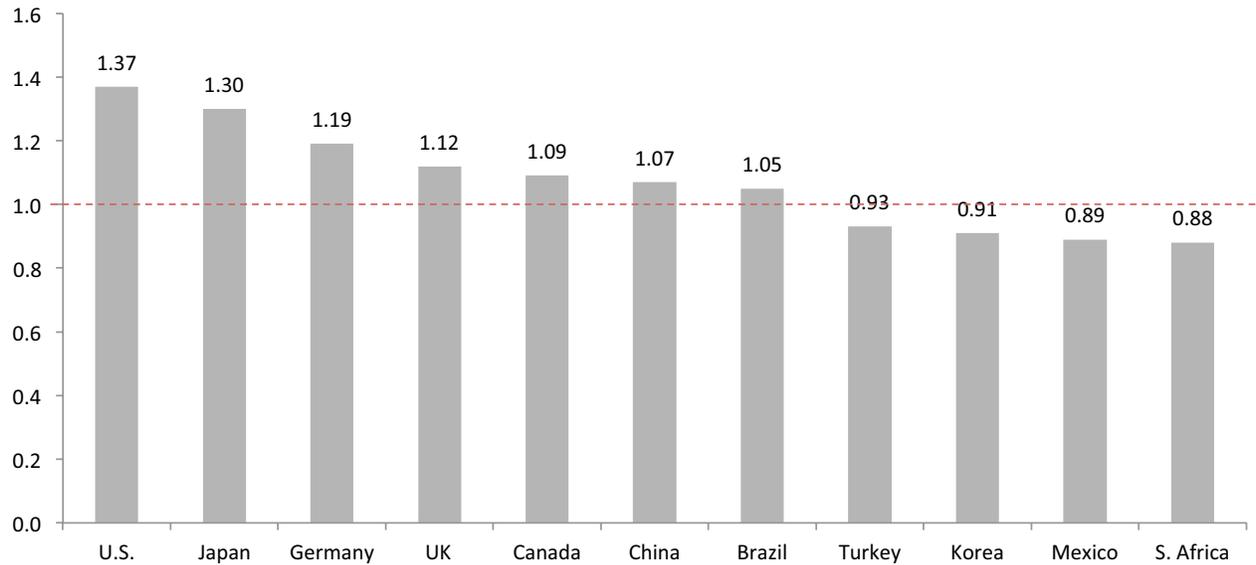
Note: Data for Israel are not available.

(Sources: National Transfer Accounts, 2016 Data Sheet; FP Analytics)

cal and mental health and safety to apps that promote healthy behaviors and mobility, is another area that has seen rapid growth. Globally, over the period from 2010 through 2015, more than half of VC, PE, and corporate funds invested into health-related technology and 47 percent of the investment deals were focused on products and services that could be used by those age 50 or older. The annual funds invested to target this 50-and-older segment rose five-fold, and the annual deal number tripled. As of June 2016, this 50-and-older digital health segment had drawn in nearly USD 14 billion in funding through more

than 1,300 deals.[15] Care guidance, physical fitness, and social engagement are the three most popular fields, which together accounted for more than half of investment deals as of the first quarter of 2016.[16]

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[15] The Longevity Network. (2016). *Startup health insights – digital health funding rankings 2016 midyear report*. Retrieved from: https://www.longevitynetwork.org/resources/insights/. FP Analytics calculation.

[16] The Longevity Network. (2016). *Startup health insights – digital health funding rankings Q1 2016*. Retrieved from: https://www.longevitynetwork.org/resources/insights/. FP Analytics calculation.

Promoting Engagement

Despite growing enthusiasm, furthering private-sector engagement in this market faces three barriers. Risk aversion prevents companies from making bold moves and rapidly responding to this still nascent market opportunity. For those, particularly startups, that are eager to enter the market, funding and commercialization challenges, as well as a lack of familiarity of the older consumer segment, are the main obstacles to the development and marketing of technologies that suit older adults' needs and interests.

Outside of markets with high-income older consumers, the private sector has been slow to invest in developing technology for older adults. This is particularly an issue in markets where the population remains relatively young, or where current older populations feature low levels of income or educational attainment – as observed in Korea (Box 4). As a result, industries in these markets could fall short on serving a rising generation of older consumers who are wealthier and digitally savvy, and lag behind competitors from other countries in international markets.

Among emerging-market economies, China stands out for its success in growing its aging-related technology market, thanks to a strong policy push in recent years. Since 2013, the central government has introduced a rash of major policies to support aging in place and cultivate older-age care industries. With a focus on leveraging digital technology to develop innovative products and services, the government offers a range of incentives ranging from subsidies to preferential taxes. The government further incorporated the development of the

Box 4. Rising Silver Market in Korea

In Korea, the private sector has yet to make a substantial move into the rapidly growing "silver market," deterred by low digital technology penetration and limited consumption power of the current generation of older people. According to a 2015 survey by the Korea Chamber of Commerce and Industry, only 11 percent of Korean companies have entered the "silver market" and 24 percent are planning to, while nearly 65 percent have no plans to do so in the near future. But this reticence portends a soon-to-be underserved older population, with the aging of Korea's baby boom generation, who are not just better educated but also possess greater economic and consumption capabilities than previous generations. As of 2013, the first-generation baby boomers had an average net worth nearly 30 percent higher than that of current retirees, and the second-generation baby boomers, who will retire approximately one decade later, have already accumulated an average net worth nearly 90 percent of that of current retirees. As a result, the silver market size is expected to more than double from approximately USD 23 billion in 2012 to more than USD 61 billion by 2020, representing tremendous market potential for digital technology businesses.

Box 5. AGE-WELL Network in Canada

The Canadian government is elevating efforts to fill in the gap between technology R&D and commercial deployment faced by innovators. The government launched the AGE-WELL Network in 2015, with a fund of CAD 36.6 million (nearly USD 27 million) for five years, with the goal of building upon emerging and advanced technologies to create products and services that benefit older adults and caregivers. AGE-WELL has adopted a multi-pronged model to accomplish its objectives, which cover the entire spectrum of research and development, commercialization, and knowledge transfer. It provides funding for world-class research in technologies for healthy aging; provides training and workshops on the impacts and implications of aging-assistive technologies; and connects researchers with public and private stakeholders that focus on commercialization. It has provided funding and learning opportunities for more than 200 researchers in technology and aging since its establishment.

Through its Strategic Investment Program, AGE-WELL is also funding startups to facilitate the deployment of their technologies. Recipients receive up to CAD 25,000 (around USD 18,310) for one year. Three latest beneficiaries include: Winterlight Labs, a company that is commercializing a tablet-based speech-assessment technology that can identify Alzheimer's and Parkinson's diseases with high accuracy; Braze Mobility, which is commercializing a system that can convert any commercial wheelchair into a "smart" wheelchair to prevent collisions; and Steadiwear Inc., which is commercializing a smart glove that reduces hand tremors.

smart older-age care sector into the national digital strategy – "Internet+" Action Plan – launched in July 2015.

According to VCBeat Research, as of early 2016, 75 percent of startups in China that specialize in providing ICT-enabled products and services to older adults were established from 2013 through 2015. These companies cover an extensive range of products and services: 21 percent provide smart home-based or institution-based care systems, 18 percent provide older-age care services, and the rest focus on hardware, software, and e-business services, among others.

Across markets, startups have been the leading force driving growth of the niche technology market targeting older adults, but they are often faced with funding and commercialization challenges. In Brazil, while startups are the most active players, this sector is still at an early stage, and neither industry nor investors are particularly interested, especially beyond the health sector. This challenge is not exclusive to middle-income markets. In Canada, innovators report that they are facing a significant gap between technology R&D and commercial deployment, mainly as a result of a less supportive financing environment, risk aversion among investors, and a smaller

market (compared with the U.S.) that makes pilot and commercialization projects more difficult. To fill in this gap, the Canadian government has recently introduced an innovative program that provides an extensive scope of support for innovators and early movers (Box 5). The governments of Germany, Israel, and Brazil have also set aside funds to support technological innovation that assists independent living or benefits older adults, but action in this emergent area is still relatively embryonic.

Private-sector entities are leading the effort in promoting technology development for older adults in countries where government involvement is limited. In the U.S., the AARP and JPMorgan launched a USD 40 million AARP Innovation Fund to invest in early-to late-stage innovation-focused companies whose mission is to improve the lives of older adults. Another interesting private-sector model is Aging 2.0, a tech accelerator that just started in the U.S. in 2013, but has built footprints in more than 20 countries since then. Through its global network and tech competition events, Aging 2.0 connects start-ups with investors and corporate partners and bridges funding and commercialization gaps, and also takes a 5 to 7 percent equity stake in the startups.[17]

Companies that are eager to tap into the aging-related technology market are still working to crack the code on how to design and market products and services that best meet older adults' needs and interests. This is partly a result of tech companies' general unfamiliarity with older consumers, as the industry emerged catering to young consumers and the demographic of their employees – in the U.S., nearly three-quarters of tech companies have an average age of employees below 40 years old.[18] As a result, tech companies may not be able to intuitively understand the unique qualities and interests of older consumers.

For example, while age-friendly features adapted to older people's physical conditions are important to facilitate their usage, incorporating them in inclusive design for all, rather than designing products specifically for older adults have been shown to receive better market responses.[19] Similarly, older consumers do not necessarily embrace products that are marketed specifically for them, as they feel stigmatized. As such, marketing those products to everyone, but with a focus on simplicity and ease of use, could make them more appealing to older consumers.

[17] Gustke, C. (2015, October 12). *Top VCs target $7 trillion senior-care market*. CNBC.com. Retrieved from: https://www.cnbc.com/2015/10/12/top-vcs-target-7-trillion-senior-care-market.html

[18] Indeed.com. (2017). *Report: ageism in the tech industry*. Retrieved from: http://blog.indeed.com/2017/10/19/tech-ageism-report/.

[19] Independent Age. (2010). *Older people, technology and community: the potential of technology to help older people renew or develop social contacts and to actively engage in their communities*. Retrieved from: https://www.cisco.com/c/dam/en_us/about/ac79/docs/wp/ps/Report.pdf.

Involving older consumers in product design and marketing planning processes presents an effective solution. In the U.S., which sees a high level of engagement from the business community in the space of aging-related technology, notable partnerships have been formed between companies and NGOs in an attempt to overcome these challenges. One such effort has been undertaken at Avenidas, a nonprofit organization that serves multiple communities in the San Francisco Bay Area. In 2016, Avenidas launched the Generations Lab initiative, which takes advantage of its proximity to Silicon Valley tech hubs and creates a space where older adults can increase their familiarity and comfort with new technologies through focus groups and pilot testing. While helping the older adults become more adept with new technologies, this lab helps companies refine their products and develop technologies targeted toward seniors.

Key Takeaways

Digital technologies not only have the promise to improve the lives of older adults around the world – facilitating social and productive engagement and delivering improved health outcomes – but also significant economic gains, both in more efficient and lower-cost services, and opening up new market opportunities. However, significant gaps exist between the benefits technology can deliver and the extent to which older adults realize and use them, and between the products and services older adults demand and what the private sector actually provides. Governments, businesses, and other stakeholders can all play important roles in bridging these gaps, by:

- Eliminating digital exclusion by raising older adults' awareness of the usefulness of technology and providing tailored training opportunities;

- Facilitating companies' entry into this market through a strong policy push and funding and commercialization support;

- Connecting innovators, product developers, and service providers with older consumers to enhance their understanding of the group and ability to serve its needs.