

Policy Sharing on Digital Inclusion for the Elderly

APEC Telecommunications and Information Working Group

August 2026



**Asia-Pacific
Economic Cooperation**



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1. Introduction

The aging population is one of the major challenges in the APEC region. The population aged over 65 in the APEC region almost doubled from 1990 to 2025, and it is expected to accelerate in the coming years (APEC 2025). According to ESCAP, the number of older persons in Asia and the Pacific will increase to 1.3 billion by 2050. Although aging as a trend is more pronounced in developed economies, rapid aging has emerged as a policy challenge for developing economies as well. In ASEAN, for example, it is predicted that populations will be aging twice as fast as in the OECD on average (OECD/ERIA 2025).

[Table 1] APEC Population Shares by Age Group, 1990-2025

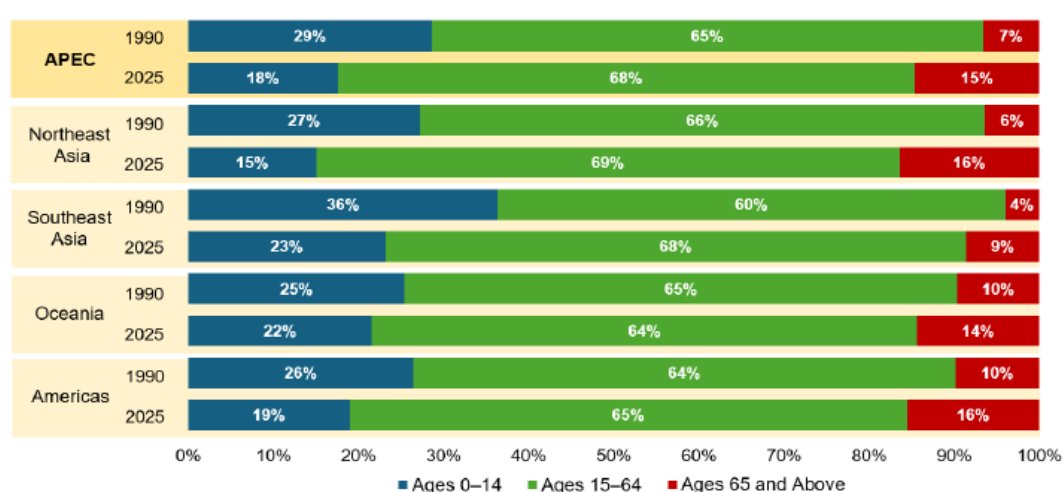


Figure 2. APEC population shares by age group, 1990–2025

Note: Northeast Asia = China; Hong Kong, China; Japan; Korea; Russia; and Chinese Taipei. Southeast Asia = Brunei Darussalam; Indonesia; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam. Oceania = Australia; New Zealand; and Papua New Guinea. Americas = Canada; Chile; Mexico; Peru; and the United States.

Source: UN WPP.

Source: APEC (2025)

An aging population requires coordinated and comprehensive responses across fiscal, labor, and social policy domains. This demographic change may threaten long-term fiscal sustainability through rising pension and healthcare expenditures and a shrinking tax base as the working-age population declines. Especially, increasing per capita health and long-term care costs place additional pressure on welfare systems (Emmanuel A. San Adres and Chelsea She Jiaqi, 2025).

Digital technologies can be useful tools to address these policy challenges and support economic and social progress when used inclusively (UNDP 2024). In particular, digital technologies offer opportunities to complement physical and cognitive limitations, while enhancing economic empowerment, social participation, and subjective well-being among older adults. However, older individuals are the most vulnerable in the digital environment. For example, ensuring online safety for older adults has become a key policy priority, particularly

in addressing risks such as online scams and fraud, false and misleading information, and concerns related to privacy and personal data protection.

As the host of APEC 2025, Korea highlighted demographic shift as priority agenda in the region and adopted the APEC Collaborative Framework for Demographic Changes along with the Leaders' Gyeongju Declaration in November. The Framework reaffirms its commitment to respond to demographic changes in the region by building a resilient system in response to demographic changes; modernizing human resources development; advancing quality, patient-centered, and technology-supported health care systems; promoting the economic empowerment and participation of all; and strengthening regional dialogue and cooperation.¹

In this background, this project aims to provide an overview of the state of digital inclusion in the APEC region, and delve into the specific policies or initiatives focusing on the ageing population in the APEC economies.

1.1 What is Digital Inclusion?

As digital transformation accelerates, digital inclusion has emerged as a critical pillar of an inclusive digital society. As digital technologies and activities become increasingly embedded in everyday life, access to and effective use of digital tools are no longer optional but constitute a fundamental enabler of social and economic participation. Ensuring digital inclusion is therefore essential to mitigating digital risks that may otherwise exacerbate existing inequalities and social disparities.

While the definition of digital inclusion may vary, there is common understanding that digital inclusion refers to access and use of the digital technologies, and capability to benefit from it. For example, the UN Office of Digital and Emerging Technology (ODET) defines digital inclusion as “equitable, meaningful, and safe access to use, lead, and design of digital technologies, services, and associated opportunities for everyone, everywhere” (UN DESA, 2024). Similarly, ITU frames digital inclusion as enabling all people—regardless of age, gender, ability, or location—to equitably access and meaningfully use ICTs in order to participate fully in digital society and the digital economy.²

Studies on digital inclusion highlight the key components of digital inclusion and examine their impacts and relationship with the digital divide. Early studies were more focused on material access to ICT and adopted a binary approach- the ‘have’ and the ‘have not.’ Recently, attention has increasingly focused on various dimensions of digital inclusion, including digital literacy, online safety, and digital rights. Ragnedda et al (2022) introduces the concept of “digital behavior,” which comprises of two components: a) digital access and b) digital competencies.

¹ <https://www.apec.org>

² International Telecommunication Union (ITU), *Digital Inclusion*, <https://www.itu.int/itu-d/sites/digital-inclusion>

The notion of digital competencies is drawn from the European Digital Competence Framework for Citizens (DigComp) and includes: a) information and data literacy, b) communication and collaboration, c) digital content creation, d) safety, and e) problem-solving.

International organizations provide operational approaches that reflect diverse dimensions of digital inclusion. The UN has been a leading organization dealing with digital inclusion for older people contributing and implementing the Madrid International Plan of Action on Aging (MIPPA). The regional bodies of UN such as ESCAP (The Economic and Social Commission for Asia and the Pacific), UNECE (United Nations Economic Commission for Europe), conduct reviews of MIPPA to monitor its progress, and the fourth review was conducted in 2022. The UN developed the Global Digital Compact (GDC), which provides a vision for digital cooperation but not specifically focused on elderly digital inclusion.

As part of the **UN Decade of Healthy Aging (2021–2030)**, ITU has taken a leading role in promoting digital inclusion for older people through awareness-raising, policy guidance, capacity building, and the sharing of good practices. ITU's publication **Aging in a Digital World – From Vulnerable to Valuable** provides concrete guidance, including recommendations as below:

- Revise ICT policies and legislation to promote accessibility;
- Consult older adults in strategy development;
- Adopt accessibility and quality-of-service standards;
- Integrate older persons into universal service frameworks;
- Establish multi-stakeholder mechanisms and age-friendly digital programmes;
- Promote intergenerational learning and digital confidence.

The **United Nations Development Programme (UNDP)** emphasizes the multidimensional nature of digital inclusion and defines it through the following characteristics: a) access and affordability of hardware and connectivity, b) opportunities for learning and skill acquisition, c) meaningful participation in the digital economy, d) engagement in civic life and public policy, e) confidence and trust in digital environment. The **United Nations Economic Commission for Europe (UNECE)**, a European regional body of the UN, proposed a checklist for aging in the digital era, covering four areas: access to goods and services, digital literacy, benefits of digital technology, and human rights. Regarding human rights, the checklist highlights dignity and autonomy, privacy, participation in decision-making, and free and informed consent.

The OECD Going Digital Integrated Policy Framework serves as one of the most comprehensive roadmaps for promoting economic prosperity and social well-being in the digital era. Within this framework, digital inclusion is treated as a cross-cutting policy priority, recognizing that the benefits of digital transformation must be shared by all segments of society. In light of rapid demographic aging, the OECD has called for greater policy attention to the safety and well-being of older people in digital environments, noting that this group has historically received less focus than other vulnerable populations. The OECD's work in this area centers on assessing the digital experiences of older persons, particularly with regard to

online risks, digital skills, and well-being outcomes, in order to identify policy gaps and develop evidence-based recommendations for governments and relevant stakeholders. The OECD emphasizes that addressing digital exclusion among older adults requires multilateral and multisectoral cooperation. A coordinated response is needed from governments, the private sector, families, and local communities. Policies should be customized to reflect differences in age, health status, and digital literacy levels among older populations, rather than applying a one-size-fits-all approach. Furthermore, the OECD highlights the importance of changing social perceptions by challenging stereotypes that portray older people as technologically incapable. Encouraging older adults to seek help and engage with digital tools is a key step toward empowerment. Finally, the OECD stresses that digital inclusion policies must be data-driven, calling for the systematic collection of detailed statistics on digital usage, exposure to online harm, and well-being among older persons.

2. Digital Inclusion Policy in the APEC³

This section examines the policy approaches of the APEC economies to promote digital inclusion, and the measurement frameworks, which support evidence-based policymaking. A comprehensive policy framework for digital inclusion addresses both demand- and supply-side factors. Supply-side approaches involve ensuring the availability of accessible, age-friendly digital services, while demand-side approaches focus on building the digital skills, confidence, and motivation of older adults to effectively participate in the digital society.

2.1 Digital Inclusion Policy Approaches in the APEC

Australia

Australia released the **Data and Digital Government Strategy** in 2023, which outlines its vision for delivering simple, secure, and connected public services through the use of data and digital capabilities by 2030.

In order to realize the mission of the Data and Digital Government Strategy ensuring inclusive and accessible services for all people and businesses, **the Digital Inclusion Standard**, which came into effect on 1 January 2025, provides agencies with practical guidance on the definition, scope and application of digital inclusion.

The scope of the Digital Inclusion Standard aligns to “Digital Experience,” referring to the interactions and engagements a user has with a digital service, including usability, design and overall satisfaction.

³ This section is based on survey responses circulated in TELWG in 2025 and a literature review.

We would like to express our sincere appreciation to the seven economies that participated in the survey: Australia; China; Hong Kong, China; Japan; Korea; Malaysia; and Singapore.

The Digital Inclusion Standard is mandatory and applies to digital services that are:

- delivered by non-corporate Commonwealth entities;
- informational (e.g. government agency websites, virtual assistants, e-learning materials) and transactional (e.g. claims, registrations, and tax returns);
- public-facing or internal services used by staff (e.g. intranets, learning and case management systems).

The Standard outlines five criteria:

- Embrace diversity – through co-design from the outset;
- Motivate digital use – by showing value and relevance;
- Protect users – by ensuring safety and dignity online;
- Make it accessible– by meeting and exceeding accessibility standards;
- Provide flexibility and choice– to build trust and confidence.

The first criterion, ‘Embrace diversity,’ emphasizes inclusive design by considering identity, characteristics, and perspectives. It recommends tailoring digital services to consider specific cohorts and user groups such as people with disability, people with low digital ability, First Nations Australians, and persons affected by family and domestic violence.

The Australian Digital Inclusion Index uses data collected biennially from the Australian Internet Usage Survey to measure digital inclusion across three dimensions: Access, Affordability and Digital Ability. The index explores how these dimensions vary geographically and across different social groups.

The definition and scope of each dimension is as follows:

- **Access** considers the opportunity to obtain a reliable internet connection and use various digital devices, alongside the frequency of online access;
- **Affordability** measures the share of a household’s monthly income spent on quality, uninterrupted internet connectivity, based on a defined basket of goods and services. International standard suggest households should spend no more than 2% of their income on internet services to be considered affordable. This dimension also identifies “affordability stress,” where households must spend more than 5% of their income on internet access, often leading them to choose lower-quality connections and devices that limit usage and opportunity;
- **Digital Ability** measures digital skills level such as basic and advanced operational, information navigation, social, creative, and automation skills (e.g. connecting, operating, and managing smart devices and IoT technologies).

According to the index results, overall digital inclusion - including Access, Affordability and Digital Ability - continues to improve locally. However, some population groups such as - First Nation peoples, people with disability, and individuals in the lowest income - remain below the domestic average across one or more dimensions. In particular, digital inclusion remains

closely associated with age given that people aged 75 and older record lower levels in all three dimensions.

China

China announced **Digital China Strategy** in 2023 to promote digital development which encompasses four key areas; strengthening digital infrastructure, promoting digital transformation, advancing technological innovation and security, and enhancing domestic and international governance. China has accelerated the improvement of its digital inclusion policy framework in recent years, and strengthened the government's fundamental and leading role in the development of digital inclusion. To consolidate the foundation for digital inclusion, a series of policy measures have been launched, such as Universal Telecommunication Service, and Digital Rural Development.

In the area of information accessibility, policy documents including Work Plan for Promoting the High-quality Development of Digital Technology Friendly for Aging (2023), Global Development Initiative Digital Inclusion Action Initiative(2025) etc. have been issued, with active efforts made to formulate and implement supporting policies.

The Survey Report on the Development Level of Digital Literacy and Skills for All Citizens (2024), released by the Cyberspace Administration of China, provides an overview of citizens' digital competencies to support evidence-based digital governance. The survey evaluates digital literacy across three core dimensions as follows:

- **digital cognition:** understanding of digital technologies and concepts;
- **digital skills:** practical ability to use digital tools and services;
- **digital thinking:** attitudes, critical awareness, and responsible behavior in digital environments.

The survey results indicate that while a majority of the population has reached at least a basic level of digital literacy, significant disparities persist across age groups, education levels, and regions. In particular, gaps in advanced skills and critical digital awareness highlight the need for targeted capacity-building policies. The report serves as a foundational reference for China's action plan to enhance digital literacy and skills, shifting the focus of digital inclusion from mere access to comprehensive capability development.

Japan

Japan enacted the **Basic Act on Forming a Digital Society** to build and advance a digital society and the first **Priority Plan for the Advancement of a Digital Society** was followed in 2021. The updated Priority Plan was announced in June 2025, outlining concrete policy measures and implementation strategies to create a digital society where no one is left behind, meaning that older adults and other vulnerable groups can enjoy the benefits of digitalization. The Plan outlines five initiatives as below:

- Make full use of AI, digital technologies across the economy-level and local governments, and in administrative procedures;
- Create environments for systems, data and infrastructure to support these initiatives;
- Implement initiatives to improve the convenience of users and facilitate economic growth through the collaboration between relevant parties;
- Implement initiatives to ensure the safe and secure use of technology;
- Strengthen the driving force behind the digitalization of society.

The initiatives include concrete commitments for ensuring accessibility so that everyone, including elderly users and people with disabilities, can access and benefit from digital products and services. Accessibility refers to design features, service interfaces, and inclusive practices that accommodate diverse needs. Though not exclusively labelled for the elderly, this provision supports digital inclusion indirectly by lowering structural barriers faced by aging users. The Priority Plan explicitly promotes improvement of digital literacy by enhancing accurate understanding and effective use of digital technologies, recognizing that people of all ages, including the elderly, need support to benefit from digitalization. This includes efforts to reduce hesitation and anxieties around digital adoption and to expand opportunities for citizens to experience and use digital services more confidently.

Japan conducts the Communications Usage Trend Survey to assess the diffusion and use of ICT among individuals, households, and businesses in Japan. The survey covers five main areas: the penetration of Internet services, ICT usage by individuals, the implementation of remote work, ICT adoption by businesses, and measures related to safety and security. Importantly, the data are disaggregated by age group, enabling a detailed assessment of digital inclusion gaps. The findings show that while Internet usage remains high among those in their 60s, usage rates decline significantly among individuals aged 70 and above, with the lowest levels observed among those aged 80 and over. In addition, older non-users frequently cite lack of perceived necessity, limited digital skills, and concerns about security and fraud as key barriers. These results underscore that digital exclusion among the elderly is driven not only by infrastructure constraints but also by capability and confidence gaps. Notably, Japan's Priority Plan explicitly recognizes low user acceptance and digital literacy as structural barriers to digital transformation.

Korea

As Covid-19 has accelerated the digitalization of the economy and society, the digital divide may exacerbate social and economic inequality and discrimination. Recognizing this, Korea released the **Digital Inclusion Action Plan (2020)**, presenting a vision of “realizing a digital inclusive society that benefits all.” The plan focuses on: 1) equipping all citizens with basic digital skills; 2) enabling vulnerable groups to access digital technologies and services; 3) supporting inclusive digital technologies and supporting social participation and employment for the digitally vulnerable; and 4) building private-public cooperation for digital engagement.

In 2022, Korea introduced **Digital Strategy** as a comprehensive roadmap. Among its five strategies, the third – “Building a Digitally Inclusive Society” includes: 1) establish a comprehensive digital safety network that protect citizens’ lives and wellbeing; 2) provide intelligent care services to ensure the health and safety of elderly individuals living alone; 3) support digital health management for pregnant women, children and middle-aged individuals; 4) ensure the development and distribution of digital devices for vulnerable populations; 5) implement projects to eliminate digital barriers, including senior community centers and schools. The fifth strategy, “Innovating Digital Culture,” proposes laws such as the Digital Inclusion Act, passed in 2024 and effective from 2026.

The Digital Inclusion Act newly defines digital inclusion as equitable access to technology without discrimination, and expanding protection to all who face digital challenges. Key provisions include: 1) establishing digital capacity centers, developing education programs, and building an integrated information system for digital education; 2) requiring kiosk manufacturers and operators to adopt appropriate measures to enhance kiosk accessibility for digitally vulnerable users; and 3) promoting enterprise-driven digital inclusion policy.

The Ministry of Science and ICT of Korea conducts an annual survey to assess the digital divide and provide the evidence base for policymaking. The survey classifies vulnerable groups as the elderly, farmers and fishermen, persons with disabilities, and low-income individuals. It evaluates the digital divide across three dimensions:

- **Digital Access:** Whether individuals own wired or wireless digital devices, and whether they can access the Internet at any time;
- **Digital Skills:** Proficiency in using PCs and mobile devices;
- **Digital Utilization:** Whether individuals use wired or mobile Internet, the range of services they use, and their engagement with advanced online services.

According to the 2024 results, the overall digital informatization index for the four major vulnerable groups stands at 77.5 (with the general population benchmarked at 100), marking a 0.6 percentage point increase from the previous year. Among these groups, the elderly consistently ranked lowest across all indicators, including overall digital informatization (71.4), access (95.3), skills (65.6), and utilization (75.0).

Malaysia

Malaysia incorporated the **MyDIGITAL** in 2021 as a Strategic Change Management Office to coordinate and support the implementation of initiatives under the **Malaysia Digital Economy Blueprint (MDEB)** and the National 4IR Policy. The mission of the MDEB is to drive the digital economy through catalytic, high-impact initiatives, strategic and sustainable investments, and inclusive policies.

Malaysia’s policy direction under the MDEB, particularly “Thrust: Create an Inclusive Digital Society,” aims to narrow the digital divide and ensure that every individual can participate in

and benefit from the digital economy.

The fifth thrust comprises of two strategies:

- Increasing inclusivity of all Malaysians in digital activities;
- Empowering special target groups in society to participate in the digital economy through entrepreneurship.

It outlines four initiatives. Notably, the fourth initiative, “Providing an online platform to facilitate better access for vulnerable groups” aims to enhance digital access and technology adoption, enabling vulnerable groups to become digital entrepreneurs. The second initiative includes the development of the Digital Inclusion Index Malaysia (DIIM), an instrument to measure the domestic’s digital inclusion levels. DIIM aims to consolidate data on vulnerable groups into a single platform, thereby supporting data-driven policy interventions to close the digital divide.

The Internet Users Survey (IUS) conducted by the Malaysian Communications and Multimedia Commission measures the state of digital inclusion in Malaysia by collecting data on internet usage trends, habits, and patterns among Malaysians aged 15 and above through both online and telephone survey methods. The survey covers both internet users and non-users and analyzes usage patterns across demographic and socio-economic groups such as age, income, education, and urban–rural location, helping identify populations that may face barriers to digital access or adoption. It broadly examines several dimensions, including internet access, usage patterns and online activities, digital identity, privacy and security issues, users’ experience and confidence, as well as demographic background variables.

- **Internet Access:** how individuals connect to the internet, including devices used, type of connectivity (fixed or mobile), location of access, and time spent online;
- **Usage Patterns and Online Activities:** how people use the internet, including types of online activities, content sharing, and frequency of engagement with digital services;
- **Digital Identity, Privacy and Security:** awareness of digital identity as well as concerns and experiences related to online security, privacy, cybercrime, and personal data sharing;
- **Experience and Confidence:** how long individuals have used the internet and how confident they feel when using digital technologies.

The survey is voluntary, and the findings provide evidence to support government strategies aimed at strengthening digital inclusion, particularly for potentially vulnerable groups such as older adults, rural communities, and other underserved populations.

Singapore

Singapore launched **Smart Nation** in 2014, the whole-of-the government strategy for digitalization. Marking its 10 years in 2024, **Smart Nation 2.0** was announced with the aim of achieving three goals; Trust, Growth, and Community. On Community, the government

includes strengthening digital inclusion efforts to benefit and uplift all segments of society to build a Smart Nation with the use of technology to help strengthen the unity of the people, and use technology to strengthen the government's partnerships with citizens.

The government recognized digital inclusion as a core element of digitalization, and made progress on it, including with seniors through various initiatives. Singapore's Infocomm Media Development Authority (IMDA) started the SG Digital Office (SDO) in 2020 during the Covid-19 pandemic to enable seniors to acquire digital skills needed for daily living, such as using smartphones, accessing government services, and making online payment, etc. The IMDA's Mobile Access for Seniors (MAS), launched in 2020, also provides subsidized mobile plans and smartphones to low-income seniors.

Singapore published the inaugural Singapore Digital Society Report in 2023 to monitor the progress of digital transformation in three dimensions as follows (IMDA, 2023);

- **Digital access:** having access to the internet and digital devices (i.e., smartphones and/or computers which are defined as desktops, laptops or tablets);
- **Digital skill:** having essential digital skills required for daily life. These skills take reference from international frameworks (e.g., UK's National Standards for Essential Digital Skills, EU's Digital Competence Framework) and learnings from SDO's engagements with seniors;
- **Attitudes and perceptions towards digital technologies:** citizens demonstrating willingness and enthusiasm to embrace and use digital technologies.

The report has shown that Singapore has made progress in terms of digital inclusion for seniors, with the proportion of seniors using e-payments increasing by 45% and using the SingPass app increasing by 26% in 2022 compared to 2020.

Key Takeaways

APEC economies are developing strategies and policy measures to enhance digital inclusion, with particular attention to vulnerable groups including older adults. Beyond initiatives undertaken by the APEC member economies, the concept of digital inclusion is expanding globally to encompass a broader range of issues. For example, the United Kingdom recently released the **Digital Inclusion Action Plan**, which identifies four priority areas: skills, access, access to services, and confidence. The report broadens the discussion of digital inclusion to incorporate issues such as online safety and digital confidence, reflecting the growing recognition that digital transformation introduces new risks that were not sufficiently addressed in earlier policy frameworks.

[Box1] UK's Evolving Approach to Digital Inclusion

The most recent **Digital Inclusion Action Plan (2025)** defines digital inclusion as “ensuring

that everyone has the access, skills, support and confidence to participate in and benefit from our modern society, whatever their circumstances.” The plan focuses on five key demographic groups, including digitally excluded older people, and sets out four priority areas:

- Opening up opportunities through skills – delivering essential training and support;
- Tackling data and device poverty - ensuring affordable and sufficient access to connectivity and devices;
- Breaking down barriers to digital services – making digital services more accessible;
- Building confidence – empowering individuals to engage with digital tools and services.

Other economies have been engaging in new approaches to address digital inclusion of older adults, via various initiatives with increasing focus on access, skills, participation and safety. On connectivity, programs like the Philippines’ Barangay demonstrate how local infrastructure and targeted support can close access gaps. Beyond access, meaningful participation involves equipping seniors with the skills and confidence to engage with digital tools in ways that enhance their daily lives—from mobile banking to telemedicine. Initiatives such as Singapore’s SG Digital Office’s Senior Go Digital programme and the intergenerational “Smart Millennials” campaign in the Philippines illustrate efforts to build trust and skills through community-based learning. Some initiatives are more focused on economic and social empowerment. Thailand’s MEDEE program and the Philippine Skills Framework show how lifelong learning can be made accessible and relevant to senior workers and entrepreneurs. Digital resilience, especially protection from scams and misinformation, is another core concern. Initiatives like Indonesia’s Tular Nalar and Singapore’s Lions Befrienders Service Association ‘Say No to Scams’ game shows that digital literacy efforts go beyond basic technical skills by equipping older adults with practical competencies to navigate the online environment safely and critically. ‘Be Connected’ initiative of Australia aims to enhance online safety by capacity building for all Australians aged 50 years and older, the programs range from basics of technology to various online activities such as shopping, banking, accessing government services and using social media, etc. Hong Kong, China has multiple measures under a ‘Smart Silver’ initiative, which encompass the ‘Smart Silver’ Digital Inclusion Programme for Elders, the ICT Outreach Programme, the Enriched ICT Training Programme, and the IT Learning Portal⁴.

3. From Policy to Practice: Innovative Solutions for Older Adults

Digital technologies hold significant potential to promote inclusion among older adults by enhancing their access to services, social and economic participation, etc. For example, digital platforms can enable seniors to access essential services such as healthcare, banking, and government services without physical constraints. Telemedicine and remote monitoring tools,

⁴ www.it2.gov.hk

can improve healthcare accessibility and continuity for those with mobility limitations. Communications tools—such as messaging apps and video calls—can help reduce social isolation by allowing older adults to stay connected with family, friends, and communities. This is especially important in aging societies, where loneliness and social exclusion are growing concerns.

This section introduces use cases of technology-enabled innovative solutions such as AI speakers and care robots for older adults in Korea.⁵

Case1. AI Care Call Service - Clova CareCall

Clova CareCall is a generative AI-based care phone service developed by NAVER Cloud to check the safety of users and to address the challenges of social isolation among older adults living alone in Korea. Launched in 2021, the service uses large language models to conduct regular, natural conversations via ordinary phone calls, requiring no additional devices and ensuring accessibility for older users. Through personalized dialogue that remembers past interactions, CareCall monitors emotional well-being, daily routines, health conditions, and potential safety risks, while automatically generating reports for local governments and welfare institutions. Pilots and large-scale deployments across more than 140 local governments demonstrate high satisfaction rates over 90%, with evidence of reduced loneliness and improved emotional stability. According to NAVER, the estimated social value generated by CareCall in 2025 was approximately KRW 34 billion⁶. In regions where Clova CareCall was introduced, the rate of solitary deaths decreased by 44.2% compared to regions without the service, while emergency room visits declined by 9.2%. In contrast, hospital visits increased by 1.5%, which is interpreted as a result of AI detecting early signs of health abnormalities during routine check-in calls and prompting preventive action before conditions escalate into emergencies. This demonstrates that CareCall not only complements traditional labor-intensive care systems but also improves administrative efficiency.

By integrating AI technology with public welfare systems, CLOVA CareCall is an excellent example of how digital innovation can strengthen social safety nets and advance digital inclusion for aging societies. CareCall has since evolved to include daily life and health monitoring, as well as personalized conversations through natural language processing. The service aims to expand into personalized healthcare support, including assistance with doctor appointments, mental health, and general well-being, ultimately providing an integrated care platform. Furthermore, Clova CareCall is planning to expand the service globally, and recently started provision of its services in the city of Izumo, Japan, with the cooperation of the local government.⁷

⁵ This section is based on the workshop held in 2025 August in Korea.

⁶ <https://oecd.ai/en/incidents/2026-03-19-1cc9>

⁷ <https://koreajoongangdaily.joins.com/news/2025-06-23/business/tech/Naver-Cloud-to-install-AI->

Case2. The Companion Robot - Hyodol

Hyodol is an AI companion robot specifically designed for the elderly, which was first released in 2017. Hyodol is an AI-based socially assistive robot that builds emotional rapport with older adults and supports medication adherence, regular meals, physical activity, and cognitive engagement through a personalized, behavior-activation approach (Jung, H. W., et al., 2026). As of late 2025, over 12,000 Hyodol robots have been distributed across Korea—mostly through public welfare programs to seniors living alone—with roughly another ~1,000 units purchased privately by families (Rest of World, 2025). In collaboration with academic partners, Hyodol has conducted several studies indicating that Hyodol has improved the social wellbeing of older people. Most of the findings highlight that robots can provide relevant emotional support and enhance social connections. Hyodol not only helps reduce isolation and promotes independent living but also relieves the burden of caring. The study also found that participants experienced reduced loneliness and notable improvements in depressive symptoms. Specifically, the proportion of individuals classified as high-risk for depression declined by 45%, and overall satisfaction levels exceeded 70% of the maximum possible score (Jung et al., 2026). Some studies have focused on the work of caregivers, and the findings indicate that the robot transformed the composition of caregivers' tasks into diverse forms—hands-on, digital, in-person, and remote, rather than its displacement (Heesun Shin & Othelia EunKyoung Lee, 2024).

Case3. Educational and Entertainment Programs - ESTsoft

ESTsoft has various solutions that utilize AI to address senior care challenges, including social isolation, mental well-being, as well as the shortfall of caregivers. Major solutions are AI edutainment content and AI Companion. AI edutainment content combines education and entertainment via AI avatars, offering diverse content such as singing, traditional music, physical activities, and cognitive exercises. Developed in collaborations with universities and healthcare institutions, it has proven to be successful in real-world use cases. The other solution is AI Companion, which provides personalized conversational AI avatar companionship as below:

- AI Senior Care App 'Joeun': A pilot R&D project (2023-2025) with the Ministry of Health and Welfare, offering personalized 1:1 care for physical and emotional health;
- AI Healthcare Zone: Deployed in 36 Smart Senior Centers in Gimhae city, providing 1:1 personalized, 24/7 remote health checks (blood pressure, body composition);
- Proven Effectiveness: Studies confirm AI Human's effectiveness in enhancing senior life, providing physical, emotional, and social benefits;
- Global Expansion: ESTsoft is expanding AI Human into Japan, developing "AI

Nonomura" as Japan's Senior AI Companion, showcased at the Japan Local Government DX Strategy Seminar in September 2024.

Regarding the senior care content developed by ESTsoft, the study monitored user acceptance and its impacts. Participants in the study experienced improvements in physical, mental, and social well-being, which led them to recommend the program to others. In particular, the study highlighted the importance of ease of use and the role of intermediaries in enhancing technology acceptance.

Key Takeaways

In response to the aging society, innovative solutions enabled by emerging technology such as AI and robotics have received much public attention. While still in the early stage of adoption, these solutions demonstrate a positive impact on the social wellbeing of older adults and effectiveness of service delivery. Research shows that these technologies function positively in the reduction of depression and improvement in cognitive ability. There is not much research carried out from the perspective of caregiver, but it is expected that AI and robotics enabled services will reduce the burden of caregivers, transform elderly care management and ultimately increase the effectiveness of the welfare system.

As discussed above, three services were scaled and disseminated through collaboration with a wide range of stakeholders, including local governments, private sector and academia. In the case of ESTsoft, educational programs were delivered through community centers, while Clova CareCall and Hyodol services were mostly provided in collaboration with local governments and coordinated within existing care systems. These use cases demonstrate the importance of collaboration and cooperation among the stakeholders which greatly improve the effectiveness and sustainability of social programs for the elderly.

Despite the promising outcomes demonstrated by AI and robotic technologies in elderly care, policy challenges remain. It is important to keep in mind that technology acceptance among older adults varies considerably depending on digital literacy levels, physical and cognitive conditions, and geographic location. In particular, older adults in rural areas or those with limited prior experience with digital devices may face significant barriers to access and use.

4. Conclusion

Digital technologies are widely embedded in daily life and have become essential tools for accessing public services such as healthcare, financial services, etc. As populations in APEC economies have aged rapidly over the past decades, digital inclusion of older adults is essential for digital transformation that benefits all. As shown in the previous chapters, many APEC economies are developing or have already implemented digital inclusion strategies and policies as well as practical initiatives to drive innovation that focuses on digital inclusion of older adults.

Advances in digital technologies, particularly AI, hold significant potential to enhance the

digital inclusion of older adults by enabling innovative solutions such as AI-powered chatbots, communication tools, companion robots, and edutainment content. Against this backdrop, integrating older adults into digital policy and related initiatives is essential for economic and social progress.

Key policy recommendations for advancing digital inclusion of older adults are as follows.

- **Encourage engagement with older adults in policy making:** Older adults are encouraged to be actively involved in policy formulation and decision-making processes to ensure that interventions reflect their needs and preferences. Also, policies are encouraged to take into account the diverse characteristics of older adults—including income, education, gender, and regional contexts—to support equity and effectiveness.
- **Adapt policies to keep pace with technological advancement:** Emerging technologies such as AI are rapidly becoming embedded across a wide range of products and services. Policies may need to reflect evolving technological developments while balancing the benefits of these technologies with the need to address potential risks, including those related to trust and privacy.
- **Promote whole-of-the-government approaches:** Policy initiatives across multiple sectors—including health, finance, ICT, and social welfare—are needed to create integrated frameworks that maximize impact.
- **Foster Public-Private Partnerships (PPP):** Public-Private Partnerships can be a viable option to adopt and diffuse innovative solutions for older people considering challenges such as lack of funding, skills, and financial viability of the projects. While private-sector innovation drives technological solutions, government interventions are essential to ensure scalability, sustainability, and equitable access.
- **Encourage cooperation and collaboration within and beyond APEC:** Innovative initiatives have been adopted—from intergenerational digital capacity-building programs that foster mutual learning between youth and seniors, to community-based digital literacy networks that empower older citizens. These experiences provide valuable lessons that can be replicated and scaled.

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