Introduction

Increasing proportion of the ageing population poses several challenges in terms of ensuring these individuals with adequate resources for maintaining good health and a good quality of life. As families across the globe (especially in urban areas) are increasingly becoming nuclear, several individuals above the age of 65 find themselves living alone little assurance of security or social inclusion. In this context, there is growing evidence that technological support can bring about significant benefits for older people, while at the same time improving the cost-effectiveness of health and social services.

The term "ageing population" can have a negative connotation as it is considered synonymous to health disorders, ailments and disabilities. In this scenario, if globally new ICTs products and services are to be provided to the ageing population, then all sections of this population including healthy senior citizens and others with ailments can live their lives with dignity.

Equality and non-discrimination

ITU has been exploring the concept of smart sustainable cities since 2013. Social inclusion and creating an information society forms an important part of the smart sustainable city transition process, wherein all strata of society, regardless of gender, income and age are provided with accessibility to basic services and ICTs for urban living. Within smart sustainable cities, intelligent sustainable buildings are equip with efficient technologies (including sensors, patient monitors and cameras) to cater to the ageing populations and ensure that they receive adequate healthcare facilities along with the required protection from unsavory elements in society and unwarranted events.

As an international standards developing organization, ITU, through its Telecommunication Standardization Sector, has developed a comprehensive list of key performance indicators for smart sustainable city transitions, together with 15 other UN Agencies and Programmes including UNECE, Convention on Biological Diversity, ECLAC, FAO, UN-Women, UNCCD, United Nations Economic Commissions for Africa, UNEP, UNEP-Finance initiative, UNFCCC, UN-Habitat, UNIDO, UNU-IAS, WMO and WTO (under the United for Smart Sustainable Cities initiative). The main dimensions under which these KPIs are sorted are:

(1) Economy, (2) Environment and (3) Society and Culture

The upliftment and care of the ageing population forms an integral part of the KPIs on integrated building management, which aims to provide these individuals with social care, access to services, health-care and other age-based benefits.

The specific KPIs relating to this is titled "Integrated management in buildings", which falls under the dimension of "Society and Culture". The main aspects of building management (for intelligent sustainable buildings) covered under this KPI include:

(i) Adapting to the comfort of inhabitants: Intelligent sustainable buildings "learn" from inhabitants' behaviour and attempts to maximize their comfort;

(ii) Promoting energy efficiency: Intelligent sustainable buildings can significantly reduce energy consumption and facilitate cost saving;

(iii) Ensuring safety: Intelligent sustainable buildings can detect fire, water and gas leaks, faulty equipment and possible theft. Such building often have a self-diagnostic systems;

(iv) Protecting health: Intelligent sustainable buildings assure that appropriate temperature, light intensity, air condition parameters are maintained etic;

(v) Providing assistance: These buildings can improve the quality of life of the elderly and disabled individuals living alone by provision of homes assistance.

It is important to note that the parameters within (iii), (iv) and (v) are specifically relevant to older generations to ensure that these individuals have a positive living environment, which promotes maintaining social relations and promoting healthy ageing.

Many standards that address at accessibility needs are also useful for the elderly. For example, Recommendation ITU-T F.790 for telecommunications accessibility guidelines for the elderly and persons with disabilities. ITU-T F.790 provides general guidelines for standardizing, planning, developing, designing and distributing all forms of telecommunications equipment and software and associated telecommunications services, to enhance their accessibility for older persons and persons with permanent or temporary disabilities, ensuring accessibility for people with the widest possible range of abilities. Standards for audio-visual media accessibility – such as ITU-T H.702 for accessible IPTV devices – help deaf and hard-of-hearing users identify what are products in the market that better serve them in fulfilling their needs for access to audio-visual content.

Living longer, independently

As the average age of the population increases, the need for care increases dramatically and can represent significant impact for governments and families to care for their elderly. ICTs can significantly contribute to better health outcomes, which are invaluable not only from an economical point-of-view, but also from a quality of life perspective. This is being addressed in a new area referred to as "active assisted living". For example, the personal connected health system specifications in the series of ITU-T H.810 Recommendations specify systems that, inter alia, will allow persons with particular conditions requiring constant monitoring – e.g. diabetes, slight dementia – to live independently for a longer period, instead of having to move into an institution. Nordic countries such as Norway have adopted this standard, which is a transposition at international level of the Continua Design Guidelines, enlarged with consented remote surveillance, "social alarms" and telecare (that facilitate getting the help of emergency services).

Living longer also means that younger persons today take increasingly responsibility for their health decisions towards the future. ITU-T H.810 also assists those interested in the fitness and "quantified self" space, for activities and decisions that will significantly affect how they age.

<u>Neglect, violence and abuse</u>

ITU-T has also developed a Technical Report on "Intelligent sustainable buildings for smart sustainable cities", which outlines the guidelines for creating integrated technological building systems, communications and controls to create a building and its infrastructure which provides the owner, operator and occupant with an environment which is flexible, effective, comfortable and secure. Special attention is given to fire and safety systems to prevent theft and promote security for old persons living in these buildings. These buildings are also equipped with "easy to use" alarm systems (based on ICTs) which can easily be used by ageing individuals when faced with life threatening situations, to call for the required assistance.