Future cities, future populations:
Achieving "seamless" mobility for an aging, urban society

Two trends will have an unprecedented impact on 21st century social life: urbanization and rapid aging. At present more than half the world's population lives in urban areas, and a UN report projects that percentage to increase to two-thirds by 2050. But this is also the year when the proportion of the world aged 65 and over is expected to reach twice the current ratio, underscoring how mass migration from rural areas to the cities is occurring alongside rapid aging. By then, the elderly will outnumber children for the first time in human history, and they will be increasingly clustered in the world's megacities. As a natural consequence of these two trends, in the near future we will have evermore cities that are both large and old, and a great many senior citizens with limited mobility will reside in sprawling metropolises that will need to develop according to their needs. To tackle the spate of social problems associated with aging population head-on, these cities will need to be geographically "seamless".

In order to make mobility seamless for seniors in these future cities, it is important to look at how they will use and interact with them. A major portion of urban population growth sweeping the globe is concentrated in Asian cites, and there the speed of aging is more dramatic. Japan thus offers a glimpse into the rest of Asia's future. Reports by the Japanese Ministry of Land, Infrastructure and Transport and other commercial studies including Dai-ichi Life Insurance Company's life design report show that more than 70% of elders leave their homes more than three or four days per week, mainly for household errands like shopping or to go to the bank. A survey by Japan's Cabinet Office further identified that the typical "everyday living area" for seniors is within an approximately 800m to 1km radius from their homes. Their other major activity outside the home is hospital visits. In Japan, more than 61% of senior citizens visit hospitals at least once in a month, as do almost 60% in South Korea. For comparison, nearly one-quarter of American seniors and one-third of their German counterparts make these monthly treks. The secondary hospital service area is designated based on administrative boundaries, but in reality, people choose and travel to the closest large hospital, which is on average 30 to 60 minutes away from home.

This illustrates how important having a seamless urban geography will be by mid-century and beyond. As these metropolises are likely to grow and expand spatially, future mobility within them will have to cater in most cases to the accessibility needs of

relatively local activities, and once in a while a mid-distance trip. These may involve the use of multiple modes of transportation. Aging and the consequent decline in working-age population will bring financial challenges, with less tax revenue worsening the fiscal condition of local governments. Rapid growth tends to turn cities into urban sprawl, which at some point makes the provision of administrative services including public transportation inefficient and financially unsustainable for governments with constrained budgets.

Recent research touches on how mobility will affect the feasibility of trips to stores and hospitals. The University of Tokyo conducted a series of computer simulation studies showing how shops and other facilities may be forced by the rate of population aging to close by 2040; importantly, they found that this was because businesses would lose customers as a result of the lack of adequate senior transportation – not only in Japans remote rural areas but also at the periphery of several urbanized areas. Furthermore, studies from the International University of Health and Welfare calculated the medical capacity of all secondary hospitals in Japan, weighted by the time and distance travelled by potential patients. Due to high population density, hospitals in large cities tend to be overstretched and their services may become untenable in future. To offset the issues posed by future budget constraints and population trends, it is imperative that these services be clustered nearby the mobility-impaired seniors who will increasingly require them. Soon, Japan will need to abandon the provision of "universal" administrative services that it has cherished throughout the modern era. It then should aim instead at providing "seamless" public transport within the condensed area of service that can be covered, thereby supporting the special needs of both physically- and cognitively-challenged seniors.

Since Japan is leading Asia both in terms of urbanization and population aging, lessons from its experience – and its potential solutions – may be applied elsewhere in the future. For example, while other developed countries took between 45 to 115 years to increase their proportion over-65 to under-65 citizens from 7% to 14%, Japan made this leap in only 26 years. It is projected that China, South Korea, India, Indonesia, and other Asian countries will also age as rapidly as Japan. Hopefully a third trend will influence the course of the 21st century: the utilization of technology to improve access to necessities and quality of life in the expanding, rapidly-aging urban megacities.