



賽馬會齡活城市
Jockey Club Age-friendly City

Thematic Report Series on the Concept of
an Age-friendly City in Hong Kong

**Communication
and Information**



Initiated and funded by:



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賽馬會老年學研究所
CUHK Jockey Club Institute of Ageing



Thematic Report Series on the Concept of **an Age-friendly City** in Hong Kong - **Communication and Information**

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The CUHK Jockey Club Institute of Ageing

In support of its aspiration to overcome the social challenges created by an ageing population, the Chinese University of Hong Kong (CUHK) established The CUHK Jockey Club Institute of Ageing in 2014, with generous support from The Hong Kong Jockey Club Charities Trust.

Since its establishment, the Institute has embarked on collaborative research in gerontechnology, healthy ageing, and community intervention programmes for the promotion of health and the prevention of frailty. An effort to promote messages of active ageing has been made through a dedicated series of TV programmes; announcing the results of the first multidimensional AgeWatch Index of Hong Kong in 2015; development of Hong Kong Elder Quality of Life Index incorporating AgeWatch Index for Hong Kong since 2016-2017; and supporting the implementation of the Jockey Club Age-friendly City Project, initiated and funded by The Hong Kong Jockey Club Charities Trust.

Building on the University's long-standing efforts of ageing research and its partnership with charitable organizations, the Institute will continue to develop its capacity and serve as a platform for ageing-related research, training and community outreach programmes.

Vision

To make Hong Kong an age-friendly city in the world.

Mission

To synergize the research personnel and efforts on ageing across disciplines to promote and implement holistic strategies for active ageing through research, policy advice, community outreach and knowledge transfer.



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Preface by The Hong Kong Jockey Club

Given our city's ageing population, The Hong Kong Jockey Club Charities Trust has since 2015 been implementing the Jockey Club Age-friendly City Project in partnership with four local university gerontology research institutes to support an age-friendly culture in all 18 districts in Hong Kong.

Eight domains of an age-friendly city have been identified by the World Health Organization. The CUHK Jockey Club Institute of Ageing, our project partner, has published a series of thematic reports featuring four of these in the Hong Kong context, including on Communication and Information, Outdoor Spaces and Buildings, Community Support and Health Services, and Transportation.

This thematic report focuses on Communication and Information, specifically how information can be effectively distributed to older adults and prevent social exclusion. It identifies major determinants and hindering factors from the perspective of elderly people. It also provides a review of existing local policies and measures, and identifies room for improvement. The report advocates thoughtful and sensitive planning and execution, not just a focus on innovative technology, to enhance age-friendliness in this regard.

Our support for the Jockey Club Age-friendly City Project is made possible by the Club's unique integrated business model through which racing and wagering generate tax revenue and charity donations. As one of the world's top ten charity donors, we support Hong Kong's advancement as an age-friendly city through collaborative efforts.

I would like to express my sincere gratitude to the CUHK Jockey Club Institute of Ageing for its tremendous efforts in compiling this series of reports. I believe the publications will enhance public awareness of the need for an age-friendly city and serve as a useful resource for all stakeholders involved in advancing age-friendly initiatives.

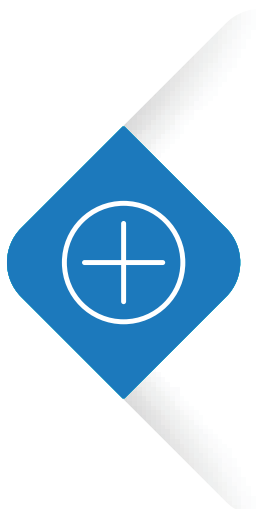
Mr Leong Cheung
Executive Director, Charities and Community
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Executive Summary

This report is one of four thematic reports in a series on the concept of an “Age-friendly City” (AFC) in Hong Kong. Each of the four reports in the series investigates a selected AFC domain by understanding relevant local initiatives as well as worldwide experiences and practices, covering Communication and information, Outdoor spaces and buildings, Community support and health services, and Transportation, respectively.

With the aim of promoting the reader’s awareness of developing an AFC, the report specifies the domain of Communication and Information within the local context of Hong Kong and its importance in the establishment of an AFC. It also discusses the relevant prospects and policy implications for Hong Kong.



行政摘要

本報告為香港「長者及年齡友善城市」專題報告系列的其中一本。在四本專題報告中，每本報告會透過研究香港相關的措施以及海外經驗，分別探討長者及年齡友善城市概念中的四個範疇：信息交流、室外空間和建築、社區與健康服務、以及交通。

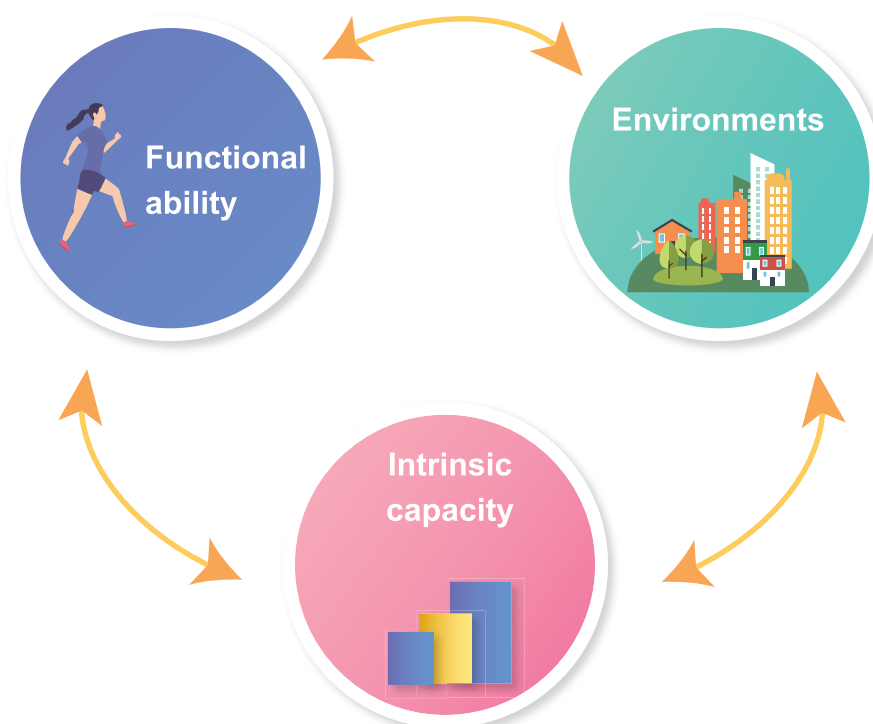
為提高大眾對建立長者及年齡友善城市的關注，本報告闡述香港在「信息交流」範疇的情況，以及此範疇在建立長者及年齡友善城市的重要性，並就其將來的發展以及制定有關未來政策的啟示，作出討論。

1.1. Healthy ageing

Populations around the globe are ageing rapidly, and Hong Kong is no exception to this worldwide phenomenon. According to the Census and Statistics Department (C&SD; 2019a), the proportion of people in Hong Kong aged 65 or above was around 17.7% in 2019, and is estimated to reach almost twice this figure by 2066 (C&SD, 2017). In addition, the life expectancy of Hong Kong people has been constantly increasing over the past few decades (Centre for Health Protection [CHP], 2019). It is therefore of paramount importance for us to make an energetic collective effort to promote active and healthy ageing in our society.

According to the World Health Organization (WHO; 2020), healthy ageing is defined as “the process of developing and maintaining the functional ability that enables well-being in older age”. Healthy ageing consists of three intertwining components (see **Figure 1.1**): functional ability, intrinsic capacity, and environments (WHO, 2017b). In particular, environments are where elderly people live and conduct their lives, and are related to the home, community and broader society, as well as the associated factors within them (WHO, 2020). The key domains of this component include the physical properties of the natural and built environments, products and technology that facilitate daily functioning, support and assistance provided by other people, as well as any relevant services, systems and policies in the broadest terms (WHO, 2001).

Figure 1.1. The three intertwining components of a healthy ageing process



As one of the key determinants of healthy ageing, environments ultimately decide whether elderly people with a given level of intrinsic capacity can engage or participate in activities that matter to them (WHO, 2020). Accordingly, the development of an enabling environment is instrumental for optimizing the functional ability and well-being of the elderly. This, in turn, illustrates the importance of the concept of an Age-friendly City.

1.2. Age-friendly City

The Age-friendly City (AFC) is a conceptual approach initiated and advocated by the WHO (2007), whose aim is to promote active and healthy ageing among urban elderly populations. In rough terms, an AFC is a place that adapts its structures, settings, policies and services to be inclusive of all elderly people with varying needs, resources and capacities, and lifestyle decisions. In order to concretize and operationalize this concept, that is, to identify and have a better understanding of the defining characteristics of an AFC, the WHO (2007) conducted a cross-national focus group study of 1,485 elderly participants from 33 cities around the globe. It concluded that the major constituents of an AFC can be categorized into the following interconnected and mutually reinforcing domains (see **Figure 1.2**): (1) Outdoor spaces and buildings, (2) Transportation, (3) Housing, (4) Social participation, (5) Respect and social inclusion, (6) Civic participation and employment, (7) Communication and information, and (8) Community support and health services.

Figure 1.2. The eight major constituent domains of an AFC



1.3. Importance of Communication and information

Of the eight AFC domains, the present report focuses on Communication and information, which is concerned with assisting elderly people in accessing timely, reliable, relevant, and understandable information through various channels (WHO, 2017a). According to the elderly participants of the aforementioned focus group study, staying connected with events and other people, and getting information for managing life and meeting personal needs are vital for healthy ageing (WHO, 2007). Indeed, the WHO underlined the particular significance of Communication and information among the AFC domains.

Essentially, ageing is a process of continuous adjustments and adaptations, and communication and information can be of tremendous assistance in this transition phase (Public Health Agency of Canada, 2010). For instance, regular communication and interactions with families and friends can help elderly people overcome the sense of loneliness that frequently accompanies the ageing process. In addition, these social exchanges may enable elderly people to establish and maintain social relationships and connectedness, both of which are widely considered a key element of ageing well (Leist, 2013). Furthermore, elderly people may need access to health information regarding ageing-associated diseases and their corresponding diagnoses and treatments, nutrition and diet, health products and supplements, medical services, and healthcare policies (e.g., Wu & Li, 2016) in order to stay healthy both physically and psychologically, and to prevent and tackle frailty.

Notably, Communication and information not only have direct positive implications on the well-being of elderly people, but also serve as the critical catalyst and cornerstone essential to the advancement of other AFC domains. Indeed, sufficient information and awareness are the preconditions for elderly people to capitalize on the capabilities of and benefit from the other age-friendly facilities and policy measures. To put it another way, without the adequate means of propagating information, any age-friendly features will simply be inaccessible to the elderly and will therefore be rendered useless. For instance, while it is admirable for service providers to promote social participation among elderly people by organizing various educational and recreational events and providing them with volunteering opportunities, these efforts will remain futile if the elderly are not well-informed and aware of these activities.

1.4. Age-friendliness assessment of Communication and information

Given the substantial impact of environmental factors on healthy ageing, it is critical to first examine and assess the level of age-friendliness of our society, thereby identifying areas for improvement. To this end, four gerontology research institutes in Hong Kong under the Jockey Club Age-friendly City Project (JCAFC Project) have conducted a baseline assessment in each of the 18 districts, consisting of



a questionnaire survey and focus group interviews, on the eight AFC domains mentioned above (Jockey Club Institute of Ageing, Sau Po Centre on Ageing, Asia-Pacific Institute of Ageing Studies & Institute of Active Ageing, 2019).

As regards the questionnaire survey, a total of 9,785 survey participants responded to 53 items on a 6-point Likert scale (1 = *strongly disagree*; 6 = *strongly agree*) covering all of the eight AFC domains, with a higher score indicating a higher perceived level of age-friendliness. In particular, there were six items in the domain of Communication and information, with examples including “information interesting to elderly people is regularly provided and broadcasted” and “people with less contact with community can get relevant information from someone they trust”. The results showed that the mean score of Communication and information was approximately 4.06 out of 6, which was ranked fourth among the eight AFC domains.

The teams also conducted 91 focus group interviews and 739 participants expressed their views on the strengths and weaknesses of our society in promoting age-friendliness of Communication and information. It was shared that participants were concerned about the unfriendly information dissemination, and they pointed out various types of communication barriers that they frequently encountered in their daily lives. Echoing the questionnaire survey results, the focus group interviews again showed that there was much room for improvement in Communication and information.

It is important to note that many focus group participants also commented on what they considered to be the key constituents of age-friendly communication and information. Interestingly, their views were not necessarily those which many younger people might automatically have assumed them to hold, namely concerns about the development of advanced infrastructures and frontier technology. This raises an important question about whether we genuinely understand what is meant by age-friendly communication and information for the elderly people. If that is not the case, policymakers and service providers may fail to recognize the actual preferences and needs of the elderly, and simply end up allocating unnecessary manpower and resources into inventing irrelevant products and implementing ineffective initiatives.

During 2018-2021, the team conducted final assessments in the 18 districts and collected views from 10,107 questionnaire respondents and conducted 90 focus group interviews. The questionnaire findings showed that the mean score of Communication and information has significantly improved by 0.07 to 4.13 (the score comparison of all items is presented in Table 1.1). This improvement might be explained by provision of more training classes on using smartphones and ability to access information via useful apps through various channels such as the elderly centres and community halls, etc.

However, the interviewees pointed out that some people, especially the old-olds with limited accessibility to information and communications technology (ICT), were left out when information is now primarily delivered through technology. They revealed that the situation was worse during COVID-19 pandemic when offline services and information were limited. They also raised that the over-reliance on ATMs and online banking were unfriendly for those who need person-to-person services. They proposed providing more support for older people with limited access and knowledge in using smart devices, establishing a one-stop platform for accessing public information and providing assistance to people with limited access to information, such as people living in private housing and non-members of the elderly centres.

Table 1.1 Age-friendly scores of Communication and information in Hong Kong

Domains and questionnaire items	Baseline assessment score	Final assessment score	Score difference	Sig.
Communication and information	4.06	4.13	+0.07	**
Information				
1. Information is disseminated in a simple and effective way, which can be accessible by people of different ages.	4.29	4.31	+0.02	
2. Information interesting to elderly people is regularly provided and broadcasted.	4.04	4.17	+0.13	**
3. People with less contact with the community can get relevant information from someone they trust.	3.94	4.05	+0.11	**
4. Wide public access to computers and the Internet free of charge or at minimal charges is available in various public places (e.g. government offices, community centres and libraries).	4.16	4.20	+0.04	*
Use of communication and digital devices				
1. Digital devices (e.g. mobile phones, radios, televisions, automatic teller machines and ticket machines) have large buttons and big font size.	4.20	4.18	-0.02	
2. Telephone answering services give slow and clear instructions, and allow the callers to repeat the messages at any time.	3.73	3.88	+0.15	**

Remarks: ** means statistically significant change at p<0.01; * means statistically significant change at p<0.05; scores are rounded to two decimal places



1.5. Outline of the report

In the hope of rectifying the potential problems, Chapter 2 aims to provide a critical, if not necessarily exhaustive, review scrutinizing the major determinants and hindering factors of age-friendly communication and information from the perspective of elderly people. Extending the focus of Chapter 2, Chapter 3 singles out the technological factors and discusses in greater depth the issues that we should keep in mind in order for technology to serve as a constructive catalyst in this regard. These two chapters comprehensively summarize the key constituents of age-friendly communication and information. While they include numerous down-to-earth and real-life examples for corroborating the ideas, they mostly adopt a theoretical, analytical and argumentative perspective. By contrast, Chapter 4 provides a purely descriptive review of the existing age-friendly policies and measures in Hong Kong, with the aim of clarifying what has been done, and what remains to be done, in promoting age-friendly communication and information. Finally, Chapter 5 concludes the present report and points the way forward.

2.1. Overview

Basically, the issue of age-friendly communication and information can be explored from two major perspectives, namely, (1) communication and information channels, which are concerned with the potential vehicles and means of communication and information dissemination, and (2) message formulation, which is concerned with the concepts and contents delivered through, and the structures and designs of, the designated communication and information channels (Public Health Agency of Canada, 2010). Section 2.2 and Section 2.3 therefore examine the critical constituents of and major barriers to age-friendly communication and information from these two aspects.

While the present report categorizes these factors into several thematic sections with the intention of elaborating them in a more structured and logically appealing manner, in reality such a clear-cut division does not exist. Instead, since these factors are all interrelated, they should be considered on a unified basis. In view of this, and in order to demonstrate a coherent connection between different sections and depict a more comprehensive picture, a case study on the General Out-patient Clinic Telephone Appointment System is included as a concluding example in Section 2.4.

2.2. Communication and information channels

2.2.1. Overreliance on technology

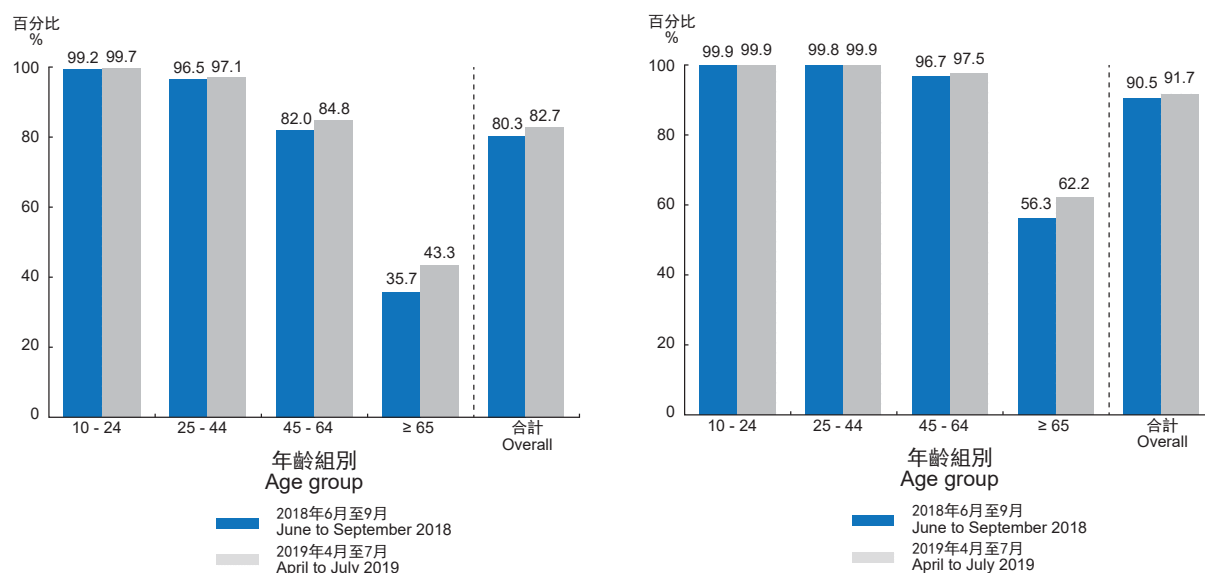
In the modern digital era, information and communications technology (ICT) has experienced unprecedentedly rapid growth and plays an important part in our daily lives. As a consequence, and perhaps also due to the frequent mentioning of such terminology, there is an increasing tendency for the governmental bodies, welfare agencies and business entities in Hong Kong to associate, if not completely equate, communication and information with the use of technology. Accordingly, it is not rare for people to have the impression that the concept of age-friendly communication and information channel is supposed to be realized in the forms of mobile devices, digital tools, automated systems and smart gerontechnology. However, it should be evident that while these innovations may facilitate the information acquisition and communication process for some elderly people, they do not necessarily benefit everyone to an equal extent. For instance, it is unlikely that elderly people who have deteriorated physical conditions, insufficient literacy and cognitive capacities, low acceptance and openness towards technology, and inadequate financial resources and assistance will rely on the Internet for acquiring information, or on instant



messaging apps and social media platforms for communication purposes.

More generally speaking, elderly people have age-specific characteristics, and thus their patterns and behaviors of using technology may not coincide with those of younger people. While there exist numerous communication and information channels on the Internet as well as various types of electronic media and platforms that are extremely popular among the younger generations, many of them may simply be inapplicable and irrelevant from the perspective of elderly people. Indeed, according to a recent thematic household survey report (C&SD, 2020), despite intensive promotion in recent years, the rate of Internet penetration and the use of personal computers and smartphones among elderly people in Hong Kong still lag significantly behind those of other age groups. Specifically, the percentages of survey respondents aged 65 or above who had used a personal computer and the Internet during the 12 months before the enumeration process were only 43.3% and 62.2%, respectively (see **Figure 2.1**), showing that ICT is by no means the only approach adopted by elderly people to seek information and communicate with others. Worse still, we may have overestimated the progress that we can achieve in the foreseeable future, in terms of increasing the ICT take-up rate among elderly people (Audit Commission, 2018), thereby possibly creating a mismatch between the drive of technological development and actual market demands.

Figure 2.1. Percentages of Hong Kong people aged 10 and over who had used a personal computer (left) and the Internet (right) during the 12 months before the enumeration in 2018 and 2019



In view of this, if our society continues to rely excessively on the use of technology, switch and convert every communication and information channels to digital, and phase out other traditional channels with which elderly people are more familiar, then we may end up depriving the elderly of their functional ability in this regard. Consider the recent situations in mainland China as a negative example (Zhang & Xue, 2020);

when the COVID-19 pandemic began, many public and private services were quickly digitalized to stop the spread of the virus, thus rendering it necessary to use QR codes and mobile apps in performing various routine activities that are essential to the elderly. In the absence of more traditional modalities, for instance, making medical appointments by interacting face-to-face with the front desk receptionist in the hospital, elderly people in mainland China have been struggling to adapt themselves to gather information and navigate their ways around the digital world. Although efforts have been made to provide the elderly with ad-hoc technical assistance, their autonomy and independence have been sacrificed in this process, which ultimately undermines their functional ability and defeats the whole purpose of healthy ageing (WHO, 2020).

In conclusion, we should bear in mind that it is not essential for age-friendly communication and information channels to be technology-oriented. In contrast, while non-technological approaches are often criticized for failing to keep abreast of the times, they do have their unique values to the elderly and should not be completely abandoned. In view of this, it is imperative for civil servants, academics and service providers not to blindly follow the prevailing market trends (which are predominantly formed and shaped by the younger generation) and place too much emphasis on the development of technological and digital solutions. Instead, all concerned need to understand and respect the actual preferences and concerns of elderly people, thereby ensuring that communication and information are inclusive to all elderly people with varying competencies and needs.

2.2.2. Diversity

Given the above considerations, it is vital to identify and understand the actual preferences of the elderly in this regard. What are these preferences? To put it simply, it depends. Besides being distinct from other age groups, elderly people are themselves heterogeneous. Therefore, they may choose to use very different approaches for acquiring information and communicating with others, based on their educational backgrounds, personal capacities, needs and preferences, and also on various contextual factors, including the types of information that they are seeking and the targets with which they are communicating. In other words, the preferences of elderly people regarding communication and information channels do exhibit significant within-group variations. In fact, it may not be an exaggeration to claim that the variability within the elderly population is even more noticeable than the between-age-group differences.

Indeed, according to the baseline assessment report on age-friendliness as mentioned in Section 1.4 (Jockey Club Institute of Ageing et al., 2019), the elderly participants indicated that they tend and prefer to access information through a wide array of channels (see **Figure 2.2**), covering: (1) mass media including



television, radio and newspapers, (2) ICT, including the Internet and smartphones, (3) correspondence, including letters, e-mails and newsletters, (4) posters, bills, banners, and notification boards in public housing estates and community areas, and (5) person-to-person interactions with friends, family members, neighbors, and staff and social workers from the elderly centres and district councilor offices.

Figure 2.2. Different types of communication and information channels that the elderly may utilize



Given such a high level of diversity, we should not consider the elderly as a homogeneous group, or lightly assume that there exists a single, definite age-friendly communication and information channel which is universally applicable to all elderly people. Instead, the defining features and canonical examples of age-friendly communication and information channels depend on the specific competencies and needs of the elderly subgroups under consideration. Service providers ought therefore to ensure that a wide range of communication and information channels

remain available (e.g., Age Friendly Ireland, 2020), so that elderly people will not be forced to switch to approaches to which they are unaccustomed. This is especially important given their limited flexibility, adaptability, and openness to new experiences.

Nonetheless, although individual preferences vary markedly, it is also clear that several communication and information channels, notably television, radio, and word-of-mouth communication, are more popular among the elderly than others (Jockey Club Institute of Ageing et al., 2019, see also Chan, Huang, Mark, & Guo, 2017). In particular, word-of-mouth communication is commonly considered an efficient and reliable way for obtaining information, especially on topics and issues associated with the local neighborhood and community affairs. Significantly, none of these channels involve mastery of mobile phone technology. Quite simply, they are the way most people derived information until very recently (say, two decades ago).

2.2.3. Accessibility

Importantly, it should be noted that the maintenance and provision of a wide array of communication and information channels are only the basic and minimal requirements for ensuring age-friendliness in this regard. In order for any channels to achieve the desired functionalities and fulfill the intended purposes, it is not sufficient for them to merely exist. Instead, elderly people need to be granted equal and easy access so that they can conveniently and efficiently utilize these channels.

2.2.3.1. Physical constraints

In reality, there are many factors that may obstruct the elderly from accessing the communication and information channels that they would otherwise want to use. One example of these factors is associated with the issue of physical proximity and environmental constraints. For instance, while many non-governmental organizations (NGOs) may attempt to communicate with the elderly by distributing newsletters, putting up posters, and making announcements through the community centres, these channels may not be very accessible to the private housing elderly residents, since newsletter distributions and posters are usually prohibited in such areas, and private estates are typically located far away from the sources of information dissemination (Jockey Club Institute of Ageing et al., 2019). Similarly, this difficult situation may also apply, perhaps to an even greater extent, to elderly people who reside in remote rural areas. While it is common for various government departments to disseminate official information on governmental issues and welfare policies by means of brochures and leaflets, elderly people may find these publications difficult and inconvenient to access, since they need to be physically present in the corresponding government offices to obtain such printed materials (Jockey Club Institute of Ageing et al., 2019). Worse still, the problem of inaccessibility in this regard may be further exacerbated by the fact that the display periods of government information are usually quite



short (Jockey Club Design Institute for Social Innovation, 2019). This implies that elderly people, even those who are willing to visit government offices in person, may not have sufficient time or opportunities to obtain the desired information. Those responsible for providing such information need to take such factors into account when operating and providing their communication and information channels. In particular, communicators should increase and diversify the physical locations of information dissemination, especially with respect to the more remote areas with inadequate transportation infrastructures and limited external linkages. For instance, communicators could disseminate information informally in places where elderly people like to gather, and also install Liquid Crystal Display monitors in public areas and buildings for enhancing information exposure (Jockey Club Institute of Ageing et al., 2019; WHO, 2007).

2.2.3.2. Affordability

Affordability is another factor hindering the accessibility of elderly people in this regard (WHO, n.d.). In many cases, elderly people need to pay to access certain communication and information channels. Particular examples of such expenses include, for instance, buying newspapers, subscribing for magazines and paid television programmes, and purchasing the devices and equipment that are required when using certain specific kinds of telecommunication services. However, many elderly people in our society are retired with no income and are living in poverty (Sun, 2020). This, together with their typical tendency to be frugal and retain their monetary assets (De Nardi, French, & Jones, 2010), makes it doubtful whether they can afford to pay to access these costly channels.

Although it may not be realistic for every communication and information channel to be provided to the entire population free of charge, communicators should at least aim to offer basic financial assistance, to provide the incentives necessary to get the elderly involved in the communication process. As a positive example in this regard, The Hong Kong Council of Social Service (HKCSS) launched its Elderly Concession Scheme in 1992, which offers a free fixed telephone line service (the “Care for the Elderly Line”) to eligible elderly people (HKCSS, 2020b). Nevertheless, much more still remains to be done, especially with respect to ICT-based channels, since otherwise the already existing problem of digital divide may be further worsened (see Section 3.2 for further discussions).

2.2.3.3. Special needs of the vulnerable groups

While the considerations discussed above are primarily concerned with enhancing the accessibility of the mass-oriented communication and information channels, there are unfortunate cases where such an effort is simply futile. Consider the group of singleton elderly who are disabled, frail, illiterate, homebound and socially inactive as an extreme example. It is conceivable that any mass-oriented channels, including the Internet, broadcast media, printed publications, and social interactions in the community neighborhood, will most likely remain inaccessible to this vulnerable group, despite the best possible endeavors made by the relevant parties. In such cases, communicators need to react promptly and switch to other substitutes that are more applicable to the situations under consideration. In this regard, candidate solutions may include regular telephone contacts and home visits conducted by specially assigned volunteers and social workers, and innovative ICT products (e.g. virtual AI home assistants) designed to minimize the cognitive demands on users while still providing ample information in a timely manner.

Ultimately, the fundamental guiding principle is that communicators should not merely focus on the commonly available channels and try to make them more accessible to the majority of the elderly population. They must also be aware of the specific needs and competencies of several elderly subgroups who are suffering from or at risk of various vulnerability conditions, and, if necessary, turn to other suitable alternatives.

2.2.4. Elderly-specific channels

Besides ensuring the provision of a diversified range of accessible communication and information channels, communicators should ideally also aim at establishing some elderly-specific channels that are sufficiently comprehensive in nature and are particularly oriented towards the elderly, for the following three reasons.

First, notwithstanding its importance and benefits, the diversification of information sources and communication channels does not always come without a cost. For some elderly people who are granted access to a great variety of channels, finding the “right” one to use may in fact be a daunting and perplexing issue. More specifically, since elderly people typically want to acquire various kinds of information and communicate with various groups of people, they may find it difficult to identify and select the channels that are most suited to what they want to do. In addition, the overwhelming amount of information that is disseminated through different channels may not necessarily be either accurate or consistent, thereby constituting a potential source of confusion and misunderstanding for the elderly. To take an obvious example, so much information was disseminated throughout 2020 during the COVID-19 pandemic that many elderly people in Hong Kong struggled to acquire accurate and reliable information on the local progress of the pandemic, the market supply of face masks,



arrangements for compulsory testing, self-isolation and quarantine, regulations on social gatherings, and the efficacy and side effects of different kinds of vaccines. Such difficulties are also aggravated when false or misleading information is supplied deliberately, as with conspiracy theories that are purportedly based on scientific research (Timberg, 2021), false advertising, fraudulent and misleading messages, phone scams and cold calls (Jockey Club Institute of Ageing et al., 2019), and deception crimes in the broadest terms, which have increased markedly in recent years (Hong Kong Police Force, 2021).

Second, even if elderly people are able to identify and use the most appropriate and credible channels, they may still need to seek information and communicate with others on a piecemeal basis (Jockey Club Institute of Ageing et al., 2019). This might not be a worry for younger people, but may be a particularly burdensome and inconvenient process from the perspective of the elderly. For instance, elderly people may need to learn about the community affairs from the property management companies and district councilor offices, obtain information regarding educational programmes and social activities from the elderly centres and community halls, make medical appointments with the staff from public hospitals and private clinics, and contact government officials through the corresponding department offices. Even if these channels are sufficiently diversified and accessible if considered on an individual basis, in their totality they still constitute a significant burden on the elderly. If they only use a particular channel occasionally, it can be burdensome to remember what they have to do when the need arises.

Last, since most of the commonly available communication and information channels (including television and radio) are used by both elderly people and the rest of the population, they are typically oriented towards a broad audience instead of being targeted specifically on the elderly (cf. Section 4.6). Indeed, according to the Communications Authority (2016, 2019), the number of television and radio programmes tailored for elderly audiences is very low. The total number of broadcast hours of television programmes for the elderly in 2019 was only about one-tenth of that devoted to children's programmes. Accordingly, the majority of these channels are neither dedicated to provide contents that correspond to the elderly-specific information needs, nor designed in such a way to take into account the unique attributes of the elderly (see Section 2.3 for further discussions).

It is therefore not enough for communicators to offer a diversified range of accessible channels. Instead, some of these channels should be dedicated and specialized to provide an extensive coverage of elderly-specific information, facilitate communications and interactions that are particularly important to the elderly, and possess age-friendly structures and design features (see Section 2.3 for further discussions). A prototypical example of such elderly-specific channels are the one-stop information centres advocated by the WHO (2017a), which are intended to serve

as single-entry points for all-encompassing information about ageing, matching of opportunities for social participation and volunteering, reception for socio-medical assessments, and various inter-sectoral consultation services associated with, for instance, banking applications and official procedures. Other examples in this regard also include telephone hotlines for the elderly and call centres (WHO, 2017a), and elderly online forums which allow elderly people with similar backgrounds and life conditions to conduct discussions and knowledge exchanges on ageing-related issues (Leist, 2013).

However, notwithstanding the importance of these elderly-specific channels, we should not be too hasty to conclude that mass-oriented counterparts are necessarily age-unfriendly and are therefore of lesser value. Instead, when constructed carefully and considerately, mass-oriented channels can also possess age-friendly contents and design features (see Section 2.3 for further discussion). More crucially, the elderly-specific channels are only intended to serve as a complement, but not a substitute for, the mass-oriented ones. Under normal circumstances, elderly people may freely choose from these two types of channels based on their personal preferences, and may well, perfectly reasonably, prefer the mass-oriented channels to the elderly-specific ones. However, in the cases when the elderly want to address and resolve the inconsistencies and contradictions that arise among different information sources, or when they want to seek all-encompassing information and communicate with multiple parties simultaneously with minimal time and effort, the elderly-specific channels become particularly valuable since they are a centralized, effective and reliable platform on which the elderly can always fall back.

2.3. Message formulation

2.3.1. Message contents

Every communication process and information exchange are about the delivery of a certain message. Although this fact is frequently overlooked, the message content itself does play an important role in determining the level of age-friendliness of the communication process. Evidently, the actual realizations of age-friendly message contents largely depend on the types of communication and information channels through which they are delivered, as well as other contextual factors. Nonetheless, they share the common underlying principle, namely that they take into account the literacy and knowledge levels, cognitive and memory competencies, and personal preferences of the elderly audiences.

First and foremost, since language proficiency, comprehension abilities, and capacity to retain information are gradually declining for the elderly, it is vital to use simple and plain language for constructing and formulating the messages (e.g., Monaghan County Council, n.d.). In particular, communicators should make sure that they



use language to which elderly people are accustomed (in Hong Kong, normally Cantonese or other Chinese dialects), and avoid using unfamiliar languages, namely English, either intentionally or negligently, especially when conveying key information and important messages. As we might expect, according to the 2016 Population By-census (C&SD, 2018), the respective percentages of people in Hong Kong aged 65 or above who were able to write, read, and speak English were significantly lower than those of other age groups, implying that the majority of elderly people are either incapable or unprepared to communicate with others or obtain information in English, despite it being one of the official languages in Hong Kong. Communicators, especially those of the younger generation, need to be more empathetic towards the elderly and should not assume that they have any degree of fluency in a second language.

In addition to selecting the appropriate language, communicators should also use words that suit the semantic field of the elderly, use short paragraphs and sentences, separate long messages into shorter sections, avoid jargon and professional nomenclature, exclude unnecessary formality and technical details, use examples and graphical aids to explain difficult concepts, use active verbs instead of the passive voice, use positive statements instead of double negative constructions, and create a highlight summary to emphasize the key information.

Communicators should ideally also have a thorough understanding of what elderly audiences currently know and what they desire to know, before deciding on what content to incorporate into the messages. For instance, in the context of serious illness conversations (e.g., Ariadne Labs, 2016), it is important for healthcare professionals to prudently assess the current understanding and information preferences of elderly patients instead of simply revealing the diagnosis and prognosis in a routine manner. In case the elderly patients are unwilling to receive additional information, healthcare professionals should steer away from medical details in subsequent conversations. In Hong Kong, however, age-friendly considerations in this regard have been insufficient, and thus it is imperative for the relevant parties to provide further training and education to the healthcare professionals to enable them to understand what they should and should not discuss about in the conversations with elderly patients under life-limiting conditions (e.g., Jockey Club Institute of Ageing, 2018).

2.3.2. Presentation styles and structures

Elderly people have distinctive physiological, psychological and cognitive attributes. Their vision, hearing and tactile systems are subject to natural deterioration (e.g., Chang, Hildayah binti Zahari, & Chew, 2018). Their memory and cognitive functions are often in decline, and they are more prone to fluctuating emotional states, and tend to become stubborn and sensitive (Bao, Feng, & Wu, 2020). Correspondingly,

special considerations are required to ensure that the message contents, once they have been formulated in an appropriate manner (see Section 2.3.1), can be delivered through the designated communication and information channels in a legible, comprehensible and considerate manner.

2.3.2.1. Visual elements

There is an abundance of communication and information channels that make extensive use of texts, graphics, videos and other visual features in conveying the message contents, for instance, the Internet and mobile apps, television, newspapers, books, leaflets, banners, signages and labels. Regarding these channels, it is of paramount importance for communicators to give thoughtful consideration to the design of the visual elements and cater for the deteriorating visual acuity of the elderly audiences, thereby optimizing the readability and overall viewing experiences, as well as preventing fatigue caused by prolonged exposure to visual displays (Park et al., 2017). Otherwise, if the designs are unattractive and inconsiderate, or if the visual elements are not presented in a lucid manner, as in the cases of many posters, notification boards, and websites in Hong Kong (Jockey Club Institute of Ageing et al., 2019), then the message contents will become extremely difficult, or even impossible, for elderly audiences to understand.

Certainly, as with the formulation of message contents (Section 2.3.1), there does not exist a single definite answer as to what constitutes the most age-friendly visual design. In fact, numerous academic studies from various specialized fields and disciplines (e.g. ergonomics and design engineering) have provided advice on age-friendly visual designs with respect to different types of communication and information channels. Nonetheless, there are some general principles that may be applicable to a wide array of contexts and situations.

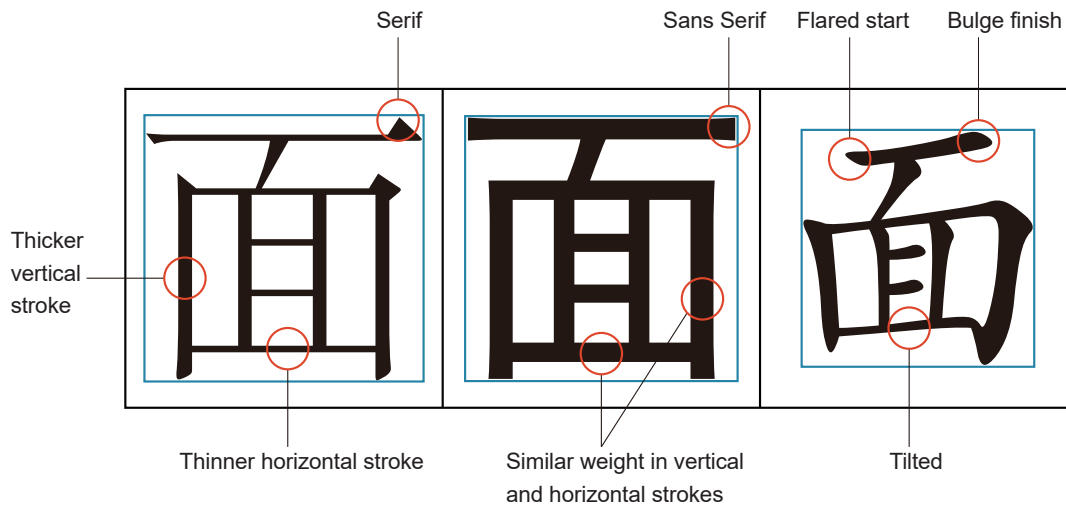
For instance, following the basic and intuitive principle of contrast, designers should seek to increase the foreground-background differences in the luminance level and color tone, in particular, by avoiding placing objects with yellow, blue, and green colors in close proximity (e.g., Chang et al., 2018, National Institute on Aging, 2008), thereby catering for the impeded color vision of the elderly in the shorter wavelengths (Hedge, 2011).

As regards the typographic components, it goes without saying that a large font size would be most useful to the elderly (e.g., Caprani, O'Connor, & Gurrin, 2012; Hasegawa, Matsunuma, Omori, & Miyao, 2006). However, it should be noted that since most previous research in this domain has primarily focused on the Western typography, future studies in the local context are still required to further understand and capture the preferences of Hong Kong elderly people regarding the specific design features of Chinese typefaces (Kwok, 2016a, 2016b, 2019), including point



size, font family, font style, stroke weight, white space, inclination and alignment (see **Figure 2.3.**).

Figure 2.3. Typographic features of Chinese typefaces



Note. Reprinted from “Legibility of medicine labels: User studies on Chinese typefaces and font size for senior citizens in Hong Kong” by B. S. H. Kwok, 2016, *Information Design Journal*, 22, p. 205. Copyright 2016 by John Benjamins Publishing Company.

Figure 2.4. Non-semantic stickers specifically designed to help the elderly express their emotions



Note. Reprinted from “Research on sticker cognition for elderly people using instant messaging”, by C. Y. Chen, in P. L. Rau (Ed.), *Cross-cultural design: User experience of products, services, and intelligent environments* (p. 24), 2020, Cham: Springer. Copyright 2020 by Springer Nature Switzerland AG.

Incidentally, age-friendly visual designs are not necessarily only concerned with achieving clarity and legibility; they may also aim at directly enhancing the efficiency and effectiveness of the information exchange and communication processes. Consider the textual conversations (i.e., not in the form of voice messages) conducted via an instant messaging app as a specific example. In many situations, owing to various reasons and constraints, it may not be the most ideal approach for elderly people to communicate with others verbatim. In such cases, graphical aids,

in particular photograph- and cartoon-stickers, may be preferable. Indeed, previous studies have shown that, when designed appropriately and in accordance with several linguistic principles, these stickers (e.g., see **Figure 2.4**) can help elderly people better convey and comprehend messages, especially those associated with emotional expressions (Chen, 2019, 2020).

2.3.2.2. Person-to-person communication styles

Besides visual displays, many communication and information channels use auditory elements as a mean of delivering the message contents. With television, radio, and automated telephone systems (see Section 2.4 for further discussions) being the major exceptions, many of these channels including face-to-face conversations, inquiry and reception desks, meetings and gatherings in the elderly centres and community halls, consultation services, telephone and video calls, and voice messages, necessitate and involve instantaneous person-to-person contacts and interactions. For these channels, it is critical for communicators to give due consideration to their communication styles, both verbally and non-verbally, to cater for the hearing loss and the reduced cognitive and memory capacities of the elderly, thereby ensuring that the communication process will not constitute a stressful and frustrating experience which discourages them from accessing these channels in the future.

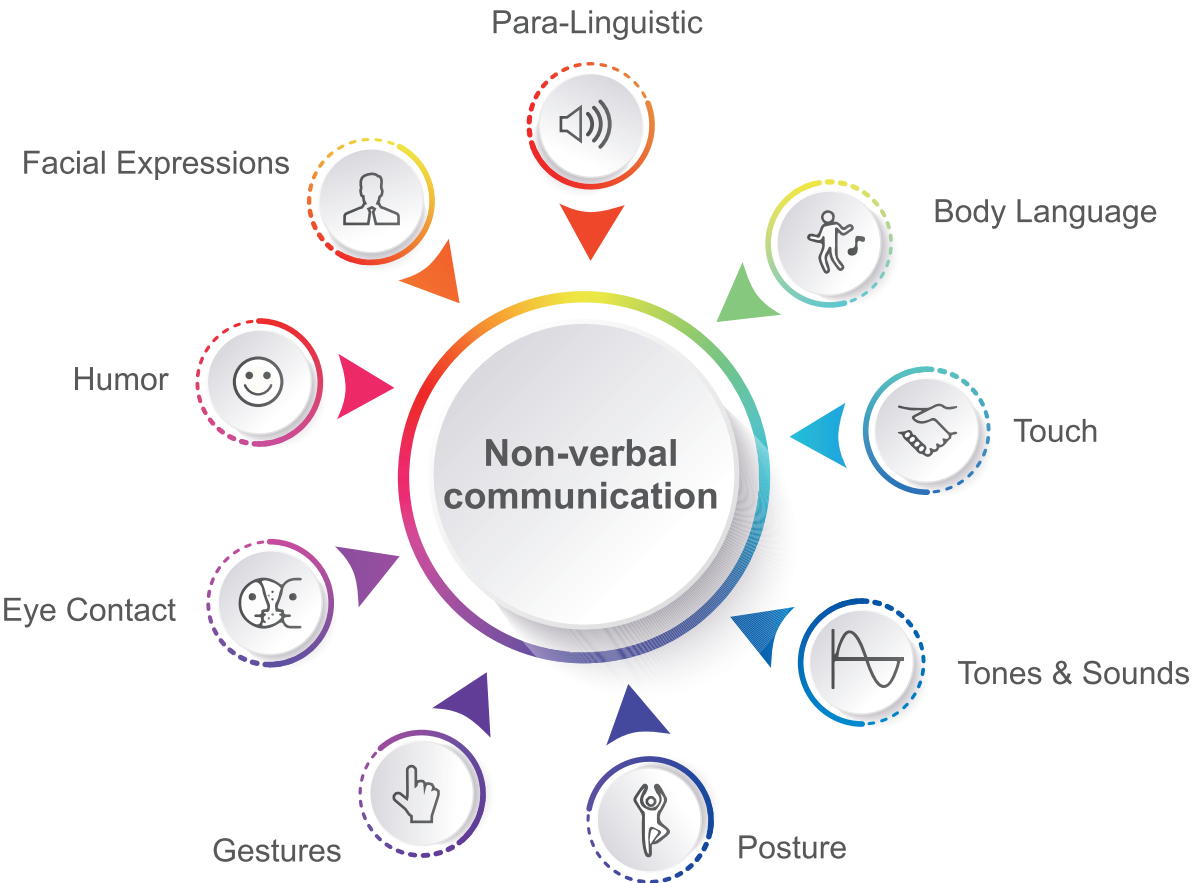
As regards the verbal aspect, many communicators may consider it a straightforward and trivial matter to enhance the level of age-friendliness. After all, they may conceive that all they need to do is to speak clearly, courteously, at an appropriate pace, and sufficiently loudly. Quite the contrary, there is much more beyond these basics that awaits further attention from the communicators. Communication is bidirectional in nature and thus is very different from a soliloquy or monologue. It is not enough for communicators to assume that they have spoken with a suitable tone, or that they have already successfully conveyed the messages to the elderly audiences as intended. Instead, communicators should, whenever appropriate, explicitly verify with the elderly audiences that the sound volume and level of clarity are satisfactory, and that they are able to comprehend and retain the key information that is delivered in the conversations. In cases where the elderly may be battling to understand the messages, communicators should allow for extra time while maintaining a sense of dignity and respect (Monaghan County Council, n.d.), and rephrase the messages accordingly instead of merely repeating the same words and sentences in a louder voice and at a higher pitch (Public Health Agency of Canada, 2010). On the other hand, on some occasions including making reservations and appointments, and partaking in socio-medical assessments and consultation services, elderly people are no longer passive listeners and recipients in the communication processes. Instead, they are the ones who are taking an active role in providing the necessary information. In such cases, communicators should try to use open-ended questions, if possible, to elicit



responses from the elderly, and intermittently summarize the information provided by them to check for comprehension (Public Health Agency of Canada, 2010).

In addition to the aforementioned verbal aspect, many non-verbal signals and cues also play a critical role in promoting age-friendliness in this regard, despite being often neglected by the communicators. Indeed, there are numerous issues related to facial expressions, gestures, and general body languages (see **Figure 2.5**), as well as the surrounding physical environment, which the communicators should be aware of during the communication process. To name but a few, communicators should provide a suitable, comfortable and, if deemed necessary, quiet and private setting (e.g., see Baile et al., 2000, for a perspective in serious illness conversations), and avoid establishing any physical barriers between the two parties (Public Health Agency of Canada, 2010). They should maintain appropriate eye contact without staring, and use non-verbal expressions to indicate that they are interested in, and remain attentive to, the conversation (Monaghan County Council, n.d.).

Figure 2.5. Various types of non-verbal communication



Of course, these considerations do not constitute an exhaustive guideline for promoting age-friendliness in communication and information channels that involve and require person-to-person interactions. Ultimately, the most important and determining factor is that communicators should have a positive, considerate, and empathetic attitude towards elderly people. If they do, age-friendly communication styles will be exhibited as a natural consequence. In fact, it is much more important for communicators to equip themselves with an age-friendly mindset than to deliberately and artificially learn the appropriate communication skills and techniques. Person-to-person communication differs from other forms of communication (i.e., Section 2.3.2.1 and Section 2.3.2.3) because elderly people can directly feel and sense whether or not the communicators are genuinely and wholeheartedly engaged into the communication process. It may be pointless or counterproductive for communicators to feign age-friendliness in this regard.

Age-friendly mindsets and attitudes do not come from nowhere. They are shaped and molded by our culture and social expectations. Consider the frontline healthcare professionals in Hong Kong as a negative example; it is quite probable that their problematic attitudes against the elderly patients spring from the pervasiveness of ageism in our society (Woo, Chau, & Mak, 2013). In view of this, while it is undoubtedly beneficial to provide training and education to healthcare professionals, these measures are only remedial in nature. In contrast, it is of a higher priority to combat the ageist stereotypes that may be deeply ingrained in our society, such that we can promote age-friendliness more effectively in the longer run.

2.3.2.3. Interface layout

As briefly indicated in Section 2.3.2.2, elderly people are not always on the passive end of the communication and information continuum. On the contrary, elderly people should be assigned an active role in this regard and remain as much control as possible in determining the contents which they are accessing (Leist, 2013). Indeed, in a lot of scenarios, elderly people can navigate around and interact with the user interfaces of the communication and information channels to achieve this purpose. Typical examples in this regard range from the more elementary operations, such as switching between different television and radio channels, to the more sophisticated and cognitively demanding ones, such as browsing through different websites, creating queries form databases, and using automated telephone systems (see Section 2.4 for further discussions). In the latter case, in particular, communicators need to make sure that, on a best endeavor basis, the layout, process flow, and interactive features of these interfaces will not result in potential barriers and frustrations for the elderly. Indeed, while it is common for younger people to learn to handle these interfaces by trial and error (Bruder, Blessing, & Wandke, 2014), the same situation may not apply to the elderly, especially the less experienced ones, in which case an overly complicated interface may wear down their patience and



motivation, thereby inhibiting subsequent usage intentions.

In actual practice, as in the cases of message content formulation (Section 2.3.1) and visual display elements (Section 2.3.2.1), the realizations of age-friendly interfaces are also extremely context-dependent. Indeed, many academic studies in the fields of human interface and human-computer interaction have sought to design an optimized prototype (e.g., Kiat & Chen, 2015) or to investigate the usability of a certain specific interface (e.g., Lo & Tsai, 2017) with respect to the application at hand, instead of providing recommendations and guidelines in a more general sense. By the same token, communicators should ideally customize the layout designs in accordance with the nature of the channels and message contents under consideration.

Nonetheless, there are several core principles that may serve as a starting point. For instance, communicators should use a one-level structure instead of multi-layered menus, or pop-up and overlapping windows (Díaz-Bossini & Moreno, 2014; Lorenz & Oppermann, 2009; Public Health Agency of Canada, 2010). In cases where the elderly need to interact with the interfaces in order to proceed, communicators should provide a few simple options together with sufficient instructions and response time, as opposed to text entry or fill-out forms, for the elderly to choose from (Yusof, Romli, & Yusof, 2014). Meanwhile, communicators should also constantly provide real-time feedback so that elderly people can understand their current positions in the menu path, and whether they are making the intended progress in the navigation process (Granata et al., 2013; Hwangbo et al., 2013). Essentially, the most important take-home message is that the interfaces of communication and information channels should be made as intuitive and simple as possible, so that the elderly do not need to allocate unnecessary cognitive and memory resources while still being able to navigate through the interfaces self-reliantly.

2.4. Case study: General Out-patient Clinic Telephone Appointment System

As emphasized in Section 2.1, the ideas illustrated in the present chapter are all inherently inseparable, despite being categorized into several thematic sections. To illustrate these ideas and summarize the present chapter, a recent local study on the pitfalls of employing an automated telephone system in the context of primary care (Woo, Leung, Lo, Cheung, & Lee, 2020) is briefly summarized below.

It should be noted that while the original study was intended to study the age-friendliness of the automated telephone system with reference to two of the eight AFC domains (communication and information, and community support and health services), the present report only elaborates on the findings associated with the first of these domains. In addition, some relevant results are reinterpreted in the present report.

2.4.1. Background

As Hong Kong's population continues to age, demands on the government-subsidized General Out-patient Clinics (GOPCs) have increased. Undesirably, elderly service users frequently have to line up for a long period of time to make medical appointments, sometimes unsuccessfully owing to the limited daily quota. To alleviate this problem, the Telephone Appointment System (TAS; see Hospital Authority [HA], 2019, for further details) was introduced as a service quality improvement measure, with elderly people being the major targeted beneficiaries. The TAS currently provides services through approximately 800 telephone lines 24 hours a day, with three available language options (Cantonese, English and Putonghua). A service user can make an appointment using either the key-in or voice input method, after which the system identifies the earliest available consultation session and allots a time slot automatically on a sequential basis.

The TAS was intended to promote age-friendly communication and information in connection with the medical appointment procedures. Contrary to expectation, however, adverse comments about the TAS have been widespread among the elderly (Jockey Club Institute of Ageing et al., 2019). The study was therefore aimed to explore the underlying reasons for this phenomenon and to identify areas where improvements could be made.

2.4.2. Methods

2.4.2.1. Participants

Under a purposive sampling scheme, a total of 117 participants were recruited, of whom some were referred from several local community centres, others were engaged via a social network dedicated for people aged 60 or above, and the rest were informal carers of elderly people.

2.4.2.2. Design and procedure

A mobile phone simulation system was developed to mimic the actual workflow of the TAS. Participants were asked to operate the system by taking the following steps: (1) select the appropriate language by inputting "1" for Cantonese, "2" for English, or "3" for Putonghua, (2) input the first six digits of the Hong Kong identity card, and (3) input the year of birth.

Using the simulation system as a reference, participants were invited to share their thoughts in an individual, semi-structured, open-ended interview lasting up to 15 minutes, regarding (1) the difficulties that they had personally encountered when using the TAS, (2) the difficulties that they expected the elderly in general might



encounter when using the TAS, (3) their reasons for using the TAS, (4) their personal experiences of using the TAS, (5) the corresponding actions to be taken when the quotas have already been full, (6) the perceived advantages and disadvantages of the TAS, and (7) suggestions for future improvement. All interviews were conducted in Cantonese and were audiotaped.

In addition, demographic information was collected from the participants prior to the individual interviews, including age, gender, their perceived familiarity in using smartphones as indicated on a 5-point Likert scale (1 = *not familiar*, 5 = *very familiar*), and whether they had used the GOPC service within the last six months.

2.4.2.3. Data analyses

The audiotaped interviews were transcribed verbatim and all relevant contents were extracted and categorized in accordance with the aforementioned domains. The frequency of each type of coded responses was counted, and its proportions relative to both the total number of participants (denoted as “% participants”) and the total number of relevant responses (denoted as “% relevant responses”) were computed respectively. In addition, the Pearson’s χ^2 test of independence and the Mann-Whitney U test were conducted, and the Spearman’s ρ was computed, where appropriate, to examine the associations between age and several other demographic variables, in particular, the perceived familiarity in using smartphones.

2.4.3. Results

2.4.3.1. Sample characteristics

The sample characteristics of the participants are briefly summarized in **Table 2.1**. Among the 117 participants, 24.8% were men and 75.2% were women; 15.4% were aged below 59, 41.9% were aged from 60 to 69, 28.2% were aged from 70 to 79, and 14.5% were aged 80 or above. 41.0% of them were current users of the GOPC service (i.e., had used the GOPC service within the last six months), and more than two-thirds (68.3%) had used the TAS previously.

For the sake of brevity, and in order to examine the differences between the non-elderly and elderly participants, the aforementioned age groups were further collapsed into two categories: (1) those who were aged below 65 and (2) those who were aged 65 or above. Under this classification, it was found that perceived familiarity in using smartphones was significantly lower among those aged 65 or above than that of their younger counterparts ($U = -3.37$, $p < .001$). It was also found that age was negatively correlated with perceived familiarity in using smartphones ($r = -.39$, $p < .001$).

Finally, as regards the reasons for using the TAS service among the previous or current users, some commonly mentioned ones included upper respiratory tract infection (16.3%), joint problems (4.98%) and high blood pressure (2.49%).

Table 2.1. Sample characteristics of the participants (N = 117)

Variables	%	Frequency		Test statistic
		Below 65 years old (N = 37)	65 years old or above (N = 80)	
Gender				
Female	75.2	29	59	0.29
Male	24.8	8	21	
Current GOPC service user				
Yes	41.0	15	33	1.00
No	57.3	21	46	
With experiences in using the TAS	68.3			
Perceived familiarity in using smartphones				
Yes	53.0	26	36	6.49*
No	47.0	11	44	
		Mean (SD)		
on a 5-point Likert scale		4.1 (0.9)	3.3 (1.1)	-3.37**

Note. The test statistic column refers to either the Pearson's χ^2 or the Mann Whitney *U* statistic, where applicable.

* $p < .05$; ** $p < .01$.

2.4.3.2. Perceived advantages of the TAS

On the positive side, participants generally approved of the establishment and provision of the TAS service, especially in terms of its effectiveness in saving their queueing time when making medical appointments in the GOPCs. However, only a relatively small portion of participants considered convenience of use an advantage of the TAS (30.8% participants; 32.7% relevant responses). Furthermore, few participants thought that clear instructions, simple procedures, sufficient time for information inputs, and system transparency were the advantages of the TAS.



2.4.3.3. Difficulties of using the TAS

On the contrary, nearly two-third of the participants (65.8%) reported that they had personally encountered difficulties when using the TAS (see **Table 2.2**). The most common problems were related to the operation of the TAS system (29.9% participants; 24.3% relevant responses), unclear instructions (15.4% participants; 12.5% relevant responses), and failure to remember the phone number (5.1% participants; 4.2% relevant responses).

Participants were also asked whether or not they expected the general elderly population might encounter difficulties when using the TAS. In stark contrast with the personal experiences, nearly 90% of the participants thought that the TAS was challenging for the elderly to use. Many participants considered the TAS an inaccessible system, particularly for elderly people who have clinical conditions such as impaired vision or hearing, and cognitive deterioration (41.0% participants; 23.2% relevant responses), and for those who were illiterate in ICT (15.4% participants; 8.7% relevant responses). Other examples of difficulties that might possibly arise included the language barrier, unfamiliarity with the input system, and various design features of the TAS.

Table 2.2. Difficulties and estimated difficulties of using the TAS (N = 117)

Types of difficulties	Personally encountered difficulties of using the TAS		Estimated difficulties for the elderly to use the TAS	
	% participants	% responses	% participants	% responses
Clinical conditions	/	/	41.0	23.2
Operation of the TAS	29.9	24.3	35.9	20.3
Difficulties in using smartphones	/	/	15.4	8.7
Fast and unclear instructions	15.4	12.5	12.8	7.2
Failure to recall the phone number	5.1	4.2	/	/
No difficulties at all	34.2	27.8	10.3	5.8

Note. Percentages do not sum to unity since (1) participants might have mentioned more than one type of difficulty, and (2) some other difficulties mentioned have been omitted in this table to suit the focus of the current presentation.

2.4.3.4. Suggestions for making the TAS more age-friendly

The most common suggestion made by the participants was to simplify the operation procedures of the TAS (30.8% participants; 31.3% relevant responses). More specifically, participants recommended making the following modifications to the TAS: (1) to offer shorter, clearer, louder, and slower instructions to guide the information inputs, (2) to lengthen the time allowed for the information inputs, (3) to require fewer information inputs, and (4) not to require any information inputs when the quotas have already been filled. Regarding the consultation quotas, participants also suggested that the TAS should make updated notifications to the elderly sooner (4.3% participants; 4.3% relevant responses). Even more strikingly, many participants hoped that a real person could be incorporated into, if not as a substitute for, the TAS for handling appointments and queries (12.0% participants; 12.2% relevant responses). In other words, many participants wanted the automated functions to be replaced by an ordinary telephone hotline.

2.4.4. Discussion

As might have been expected, a lot of concerns and suggestions made by the participants with respect to the TAS do align with the various issues and factors that have been expounded earlier in this chapter. First, although the TAS service is primarily targeted at the elderly, the TAS itself was not necessarily conceptualized and designed specifically for this target group (cf. Section 2.2.4). Consequently, many operational features of the TAS, in particular the input methods and navigation workflow, are not best suited to elderly users. More specifically, the TAS fails to offer precise, clear and easily comprehensible instructions (cf. Section 2.3.2.2), and employs an overly complicated interface that demands too many information inputs while only providing minimal time for response and allowing little room for error (cf. Section 2.3.2.3). In addition, the TAS currently only offers three language options (Cantonese, English and Putonghua), and does not include less common Chinese dialects or minority languages. Certainly, much improvement can be made in this regard when formulating these prerecorded messages (see Section 2.3.1) to accommodate the different language needs of the elderly users and thereby tackle the potential language barriers.

Second, and more fundamentally, the preferences of the elderly regarding the methods for making medical appointments vary, and thus it is inappropriate to overly rely on a single, ICT-based solution (i.e., the TAS) and cease providing more traditional communication and information channels (see Section 2.2.1 and Section 2.2.2). Indeed, while some elderly participants considered the TAS sufficiently convenient to use and even called for more advanced and cutting-edge refinements of the system, the others were not as technologically skilled and found the TAS difficult and frustrating to use, especially since they were not given the alternative



option of talking to a real person. Worse still, this problem may be easily exacerbated among vulnerable elderly subgroups (see Section 2.2.3.3), such as those suffering from various clinical conditions. Indeed, it is impractical for elderly people who are frail and have poor health conditions (e.g., hearing impairment) to be able to use the TAS without adequate assistance. In essence, the TAS effectively places these elderly people at a disadvantage and renders them dependent on others to gain access to primary care services. It is therefore not sufficient for the HA to merely make small-scale and ad-hoc adjustments to the TAS. It should also restore the more traditional modalities (i.e. a non-automated telephone hotline) and introduce more diversified channels that can cater for the specific needs of the vulnerable elderly subgroups.

Finally, it should be reiterated that proper mindsets and considerate attitudes are the deciding factors for enhancing age-friendliness in a sustainable manner (see Section 2.3.2.2). If policymakers and service providers do not put themselves in the shoes of the elderly, then any age-friendly recommendations and measures will have little effect, and be little more than window dressing. In fact, the current development of the TAS precisely corroborates this important idea. More than a decade ago, the WHO (2007) explicitly stated, in its age-friendly communication and information checklist, that “telephone answering services [should] give instructions slowly and clearly” and “users [should] have the choice of speaking to a real person or of leaving a message for someone to call back”. The guiding principles for establishing an age-friendly automated telephone system, in other words, have been in the public domain for many years. The age-friendliness shortcomings of the TAS that were identified by the study are in no way surprising, and if the HA had shown more thoughtfulness and consideration it could have avoided these problems. From this, it can be seen that the future development of the TAS, and hence the age-friendliness of the medical appointment services, really boil down to one and only one thing – whether the HA is willing to genuinely understand the experiences and concerns of the elderly, and optimize the system and services using a bottom-up, elderly-oriented approach.

3.1. Overview

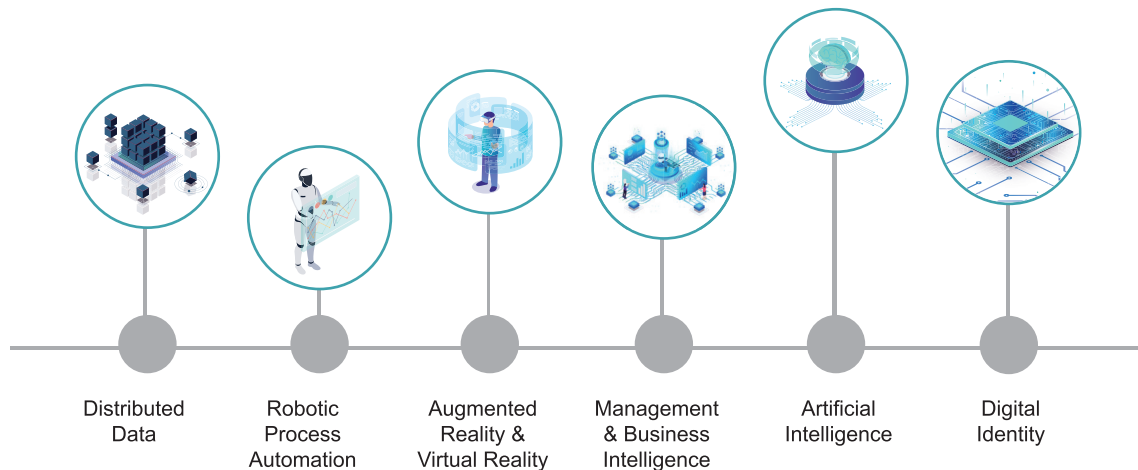
Chapter 2 critically reviewed the major determinants of, and barriers to, age-friendly communication and information. The prevalence of factors and issues associated with the use of technology is obvious. Indeed, technology does play a pivotal role in determining the extent of age-friendliness in this domain. While Chapter 2 mainly focused on the negative aspects by arguing that an overreliance on technology, the phasing out of traditional modalities, and inconsiderate technological designs are all detrimental to the functional ability of elderly people, it is also undeniable that technology, if properly applied, can offer tremendous advantages. As a matter of fact, technology is a potential vehicle not only for facilitating information exchanges and communication, but also for improving the psychological well-being of the elderly in the broader sense (e.g., Fang, Chau, Wong, Fung, & Woo, 2018). We must therefore avoid falling into the trap of decrying the overall usefulness and benefits of technology simply because of its potential shortcomings.

The present chapter therefore builds upon and extends the ideas illustrated in Chapter 2, thereby providing additional insights into how technology can be used, in a suitable and well-balanced manner, to promote age-friendliness in communication and information. On the one hand, Section 3.2 is an extension to Section 2.2.3 and expounds on the factors that we should take into consideration when attempting to “bridge” the digital gap (WHO, 2017a) and ensure that elderly people are not excluded from the technological world. On the other hand, Section 3.3 is an extension to Section 2.3.2 (in particular Section 2.3.2.3), and illustrates how service providers, designers, and engineers working in this domain can successfully develop innovative technological products that truly capture and meet the specific needs of the elderly.

It should be noted that “technology” is a broad concept and, depending on the context, can be difficult to define. For brevity, the present chapter restricts the scope of discussion to (1) the Internet, which is associated with the uses of desktop computers, laptops, tablets, and smart phones, and (2) the emerging technologies (see Rotolo, Hicks, & Martin, 2015, for a review), including artificial intelligence (AI), robotics, and various types of automated systems (see **Figure 3.1**).



Figure 3.1. Emerging technology areas related to the domain of communication and information



3.2. Digital inclusion

The so-called “digital divide” refers to the gap between those who are able to profit from the digital age (Smith, 2002), or more specifically the use of ICT (Pursel, n.d.), and those who are not. As the latter definition implies, if the problem of digital divide exists and persists, then not every elderly person can derive benefits on an equal footing with their juniors in the ever-growing technological world. Therefore, in order to fully exploit ICT in the domain of Communication and information, the narrowing of the digital gap, or digital inclusion, should be a priority. In fact, digital inclusion is not only advantageous to communication and information, but is also a pathway to greater social inclusion in the broader sense (e.g., Department of Communities and Local Government, 2009), which is by itself a vital AFC determinant that should be promoted. Looked at from another perspective, the digital divide is a critical aspect of social isolation and exclusion and thus is intrinsically an issue that should be addressed, quite apart from its impact on communication and information. The COVID-19 pandemic, which has excluded elderly people from much of their normal social lives (Lee, Kim, & Beum, 2020), has aggravated an already worrying situation.

However, it should be noted that digital inclusion does not, and should not, involve coercing the elderly into using ICT. Instead, as already emphasized in Section 2.2.1 and Section 2.2.2, elderly people have varied preferences and thus should not be left with the only option of using the ICT-based communication and information channels. In this regard, digital inclusion is only about ensuring that all elderly people are given equal opportunities and incentives to profit from the use of ICT. Whether the potential benefits are eventually realized is a matter of individual choice. We therefore further break down the issue of digital divide into three mutually interacting factors (Mason, Sinclair, & Berry, 2012): (1) accessibility, (2) skills and abilities, and (3) attitudes and behavioral traits.

3.2.1. Accessibility

In the context of the digital divide, accessibility considerations are mostly about the tangible, material factors concerned with the affordability of infrastructure and software that are necessary for accessing and using the ICT-based communication and information channels (cf. Section 2.2.3). The digital divide arises when not all elderly people have computers or other relevant devices, and the Ethernet or Wi-Fi connections that would enable them to go online. In addition, some elderly people may be able to afford high-end luxury versions of ICT products and services denied to their poorer counterparts, thereby generating a socioeconomic gradient in this regard. For instance, even though smartphones equipped with basic Internet connection functionalities are widely available to many elderly people, their ability to access the Internet can vary widely, depending on their telecommunication subscription plans. Indeed, while those who subscribe for, say, an unlimited 5G data plan can essentially access any kinds of information and communicate quickly and reliably with anyone, anytime and anywhere, those who can only afford or are willing to subscribe for a less costly, ordinary plan may need to tolerate the problems of unstable and weak signals, geospatially restricted connections, limited data usage, and unsatisfactory Internet speed and bandwidth, thereby undermining their functional ability to seek information and communicate with others when they wish to.

It is therefore undeniable that reducing monetary costs, providing financial assistance, and making Internet connections more readily available can all make a positive progress towards digital inclusion. Nonetheless, accessibility considerations may not always be the principal barrier to the use of ICT (Mason et al., 2012), and adjustments in market prices can only go so far in tackling digital divide (Department for Communities and Local Government, 2008). Indeed, we should never forget that many non-ICT users among the elderly turn their back on technology not because they cannot afford it, but because they are set in their ways and prefer to stick with what they know. This critical observation points out, and raises the importance of, the following “higher-order” factors of digital divide.

3.2.2. Skills and abilities

Using technology to gather information and communicate with others can be cognitively demanding for the elderly. It requires not only the mastery of tangible ICT skills including mouse and touchpad controls, keyboard typing, touchscreen gestures, hardware setups, and operations of computer systems and software packages, but also intangible knowledge and awareness associated with information processing and handling, data privacy and encryption, as well as cyberspace safety and computer security in the general sense (see **Figure 3.2**). In fact, as revealed by a recent thematic household survey report (C&SD, 2019b), only 40.8% of Hong Kong people aged 65 or above had the basic knowledge of operating a personal



computer, browsing the web and using computer applications for specific purposes. Furthermore, the report showed that the main reason why some people did not have any personal computers at home was that they “did not know how to use a computer”. This response was made by more than a third (38.1%) of the relevant households. Despite not being the most direct piece of evidence, these results lead to a reasonable conclusion that a significant portion of non-ICT users among the elderly may, even if provided with adequate equipment, refuse to use technology since they consider themselves incapable of doing so.

Figure 3.2. Different types of ICT skills that the elderly may need to master



While, therefore, the provision of ad-hoc technical assistances may help the elderly overcome certain immediate problems in the short run, ICT education and training aimed at promoting digital literacy are indisputably the longer-term solutions. Indeed, numerous academic studies (e.g., Bertera, Bertera, Morgan, Wuertz, & Attey, 2007; Xie, 2007) have corroborated the benefits of ICT education and offered recommendations (e.g., using a peer-based learning method; Blat, Sayago, Kälviäinen, Rizzo, & Morelli, 2010) on how training programmes can be devised to optimize learning effectiveness and outcomes. However, it is important to note that these educational measures, even in the ideal situations where they have been implemented successfully with the active participation of the elderly (cf. Section 3.2.3), are not panaceas, and are not capable of entirely filling the digital skill gap. There are two major reasons for this.

First, given the ever-changing and inherently sophisticated nature of ICT, it is unlikely that a one-shot provision of education and training will suffice. Instead, especially for those elderly people who have lower education attainment and limited abilities to learn automatically by making inferences and generalizations, training activities regarding the state-of-the-art technologies need to be provided on a repeated, frequent, and continuously updated basis. This may simply render them reliant on others and thereby undermine their independence and autonomy. Even worse, since elderly people are experiencing constant deteriorations in their memory and cognitive capacities, they will eventually lose the ability to absorb and retain the knowledge needed for using the most up-to-date technologies.

Second, and perhaps more importantly, the digital skill gap is concerned with not only an objective and actual lack of abilities, but also a subjective and perceived sense of incompetence in using ICT (Mason et al., 2012). While not all elderly people are devoid of fundamental ICT skills, it is quite typical for them to lack the confidence and self-efficacy in this respect, which prompts them to hold onto the rigid belief that they are unsuited to using and benefiting from ICT. In this regard, while effective education and training may occasionally serve as a confidence booster to some elderly people, it cannot necessarily enable those who have an internalized, self-defeating mindset to completely overcome their psychological barriers against the use of ICT.

3.2.3. Attitudes and behavioral traits

Perhaps not coincidentally, the discussions above on accessibility issues and the digital skill gap both allude to the critical notion that the intrinsic and psychological factors including, for instance, acceptance and perceived relevance of ICT (e.g., Lu & Wu, 2020), and subjective competence and self-efficacy in using ICT (e.g., Teh, Chong, Yong, & Yew, 2010; Wang, Zhuang, & Shao, 2020), are at least as important as the extrinsic and material counterparts in terms of determining the ICT usage intentions and actual usage, even though they may not be as noticeable. Previous research has shown that the digital divide is more likely to be a voluntary, attitudinal and behavioral phenomenon than one driven by external circumstances (Randall, 2010). Echoing this finding, the aforementioned household survey report (C&SD, 2019b) also revealed that nearly one-third of Hong Kong people who did not have personal computers at home attributed their behavioral decisions to having “no specific application” or a “lack of interest in using computer”. In other words, it is conceivable that many non-ICT users among the elderly may simply fail to appreciate why they need to incorporate ICT into their daily lives, or how they can benefit from it.

Whereas affordability concerns (Section 3.2.1) and objective ICT incompetence (Section 3.2.2) can theoretically be tackled in a relatively straightforward manner, dealing with the attitudes and behavioral traits which make their holders reluctant to use ICT may require more subtle approaches. In the field of behavioral economics, these attitudinal factors can be best understood according to a decision-theoretic perspective (Mason et al., 2012), under which psychological constructs including bias, discounting, anchoring, and heuristic can be made use of to better motivate the elderly to use ICT. In the field of information systems science, a behavioral modelling framework based on the social cognitive theory (Lam & Lee, 2005) can be adopted to enhance the self-efficacy in, and outcome expectations of, using ICT among the elderly, thereby boosting their usage intentions in this regard (Lam & Lee, 2006).

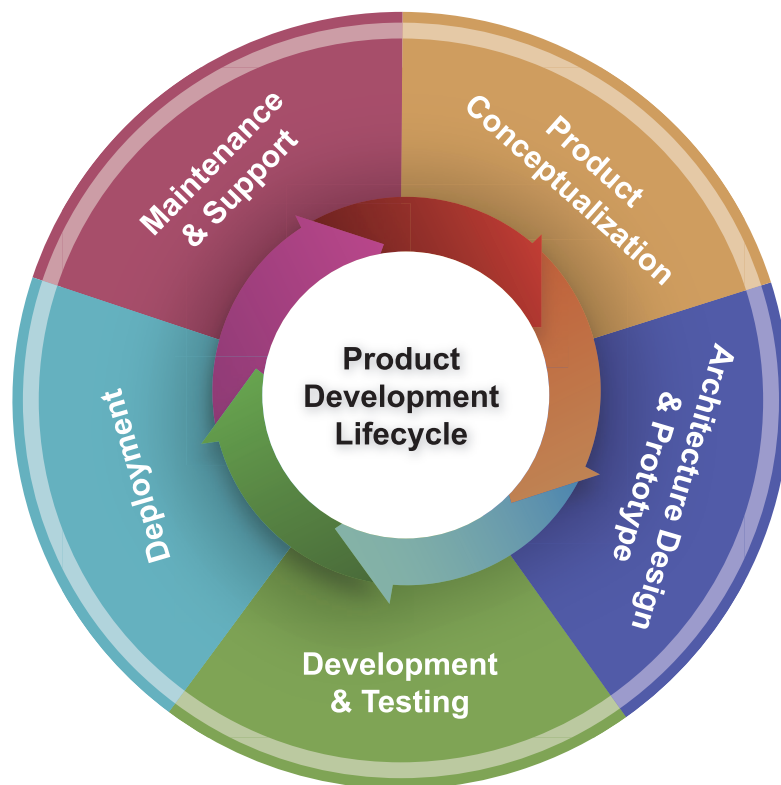


Still, notwithstanding the merits of these studies, the existing literature on how to tackle digital divide via the attitudinal and behavioral aspects has been disproportionately scarce, and thus it is essential for further studies to be made of these “highest-order” factors. In any case, it should be reiterated that digital inclusion does not amount to brainwashing and forcing the elderly to get into the habit of using ICT. Instead, elderly people who refuse to use ICT out of their predispositions, beliefs and personality traits are equally deserving of respect. In this regard, tackling the digital divide via the attitudinal and behavioral aspects is only about ensuring that all elderly people are well-informed of the values and benefits of using ICT, such that they are sufficiently motivated, or at least are “convinced enough to be motivated” (Mason et al., 2012), to use and derive benefits from ICT.

3.3. Elderly-centered development of technological products

While some elderly people may consider ICT products a useful option for seeking information and communicating with others, their specific needs and expectations are seldom assessed properly in actual practice. Consequently, existing technologies, even those that are supposedly targeted towards the elderly, have often been designed based on inadequate and stereotypical assumptions, and thus have not been effectively distributed and fully utilized (Lee & Coughlin, 2015), thereby leading to resource inefficiency and duplication of effort. In order to completely realize the potential benefits of ICT for elderly people who are willing and motivated to do so, as well as to effectively leverage input from both the government and the business sector to combat ageing issues, ICT product developers and engineers should adopt a user-centered approach, involve potential elderly users throughout the design process, and make use of their feedback to inform decisions on both the overall architecture and the detailed design specifications. To this end, we roughly follow the design process framework proposed by Ulrich and Eppinger (2004) and break down a product development lifecycle into several major stages (see **Figure 3.3**): (1) concept development, (2) design and testing, and (3) production and distribution. We then discuss the considerations that should be taken into account for creating an elderly-centered ICT product.

Figure 3.3. A typical product development lifecycle



3.3.1. Concept development

In general, product developers are prompted to launch a new development process when they foresee a significant market opportunity, or when they spot or anticipate a problem which they feel obliged to solve. They begin a design process by first establishing the overall strategic objectives, and then gathering the relevant ideas as well as generating preliminary concepts for attaining such objectives. At first glance, elderly-centered considerations in this regard seem to be rather trivial-it should suffice as long as the product is conceptualized with the specific aim of aiding the communication and information acquisition processes for the elderly. However, there is a subtle yet crucial point to note-the conceptualization of an elderly-centered ICT product should be genuinely and primarily intended for bringing benefits to the elderly, as opposed to pursuing novelty, technological advancements and innovative breakthroughs. In other words, while technology may be considered a particular solution for tackling the ageing-associated challenges in the domain of Communication and information, the ageing phenomenon itself should not be used as an excuse or justification for attracting investments from the government or commercial enterprises. Unfortunately, this rarely happens in practice. It is common for product developers and engineers, perhaps without recognizing their motives, to envision gerontechnology as an emerging and exciting business field which promises to make them a tidy profit. Consequently, ICT products in this respect are not always conceptualized as a way of resolving a genuine problem or of meeting the actual market demand. Most, if not all, of the developers working in this area may claim that



their ICT products are designed to remedy the problems of ageing, but in practice they may be putting the technology cart before the horse and overlooking the actual needs and expectations of the elderly.

To design a truly elderly-centered product concept, product developers must always bear in mind, while outlining the expected outcomes of their products and defining the target segmentation, that their ultimate goal is to deliver value and benefits to the elderly, and that making a new and original product is a lower priority (Lee & Coughlin, 2015). In addition, developers should not rush to develop their product concepts out of thin air or merely based on a premature and stereotypical understanding of the elderly population. Instead, they need to invest time and effort into scrutinizing current problems and reviewing existing solutions, and, above all, listening to what the elderly themselves say about why they would (or would not) buy a particular ICT product (see Section 3.2; see also Lee & Coughlin, 2014, for a review).

An illuminating illustration in this respect is provided by PARO (Shibata & Tanie, 2000), an interactive, assistive, and therapeutic robot designed to look like a baby harp seal (see **Figure 3.4**). The robot was developed to provide emotional support to, and facilitate communication and enhance companionship for, those elderly people who live alone or reside in nursing homes, and elderly patients suffering from dementia. PARO was clearly not devised as a particularly groundbreaking concept, since considerable research on building animal-type robots equipped with artificial emotional intelligence that can physically interact and communicate with human beings had already been carried out. However, PARO is indeed different from other autonomous robots in the sense that it was not conceptualized rigidly based on the objective and technical metrics that are commonly employed to evaluate a robotics system. Instead, the conceptualization of PARO put special emphasis on human-robot interaction and took into consideration how elderly people would think of the robots subjectively. Interviews and focus groups were conducted, on the basis of which it was decided that a baby harp seal (i.e., an unfamiliar animal) was the preferred physical form of PARO. The developers of PARO sensibly set aside the pursuit of objective and technical advancements of the robot and sought feedback from the elderly users as early as possible. As a result of this feedback they abandoned their original plan for a cat robot and designed a product which met the wishes of the elderly whom they had consulted.

Figure 3.4. PARO, the therapeutic interactive robot



Note. Reprinted from *PARO Robots USA*. (<http://www.parorobots.com/>). Copyright 2014 by PARO Robots U.S., Inc.

3.3.2. Design and testing

Upon establishing the objectives, concepts, and blueprint of the product, developers need to convert their ideas into practical form. In other words, developers need to develop the overall architecture and make decisions around the styles and functional features of the product. In this respect, the fundamental principles for creating an elderly-centered product mostly coincide with those factors that have already been addressed in Section 2.3.2.1 and Section 2.3.2.3. On the other hand, since the exact configurations and specifications of a product or system usually depend on the specific applications of interest and the nature of the technology involved, decisions in this regard may require an entire academic study in its own right (e.g., see Osawa, Orszulak, Godfrey, Imai, & Coughlin, 2010, for a study on communication robot; see also Tsai, Tsai, Hu, & Lo, 2017, for a study on 3D holography). In view of the above, we shall refrain from giving further consideration here to the operational details of the design aspects.

However, it is important to note that developers should not make their decisions in a one-off manner, merely based on previous experience, research findings, or generic instructions and guidelines. Instead, an elderly-centered product development process should be an interactive procedure that involves dynamic and recurring interactions between developers and the potential elderly users. In other words, before finalizing their decisions and proceeding to the production stage, developers should create initial prototypes, pre-release alpha and beta versions and alternative variants of the product for testing purposes, during which they need to constantly conduct market research, collect user feedback, and make modifications accordingly. One typical error that developers make in this regard is that they may underestimate

the potential contributions of elderly people in the earlier stages of this testing process (Essén and Östlund, 2011) and only involve them in the final evaluation of the finished product. Consequently, elderly people are usually only given a limited role in the testing process, and it may already be too late when developers eventually notice the mismatches between their design specifications and the actual expectations of the elderly.

Unfortunately, even if developers are fully aware of the importance of this iterative refinement process, in practice they may lack the appropriate testing grounds for accomplishing such a massive and demanding task. For instance, while it is conceivable that residential care homes for the elderly (RCHEs) would theoretically be a good candidate for the testing of gerontechnology products, in reality the staff in most RCHEs are unmotivated and unwilling to take the risks of increasing their workload and hindering their productivity simply for the purpose of performing trials on a product whose success is not guaranteed (Our Hong Kong Foundation, 2017). A similar situation may also apply in other major potential testing environments, namely elderly centres and public hospitals (cf. private teaching hospitals, including the CUHK Medical Centre, which has a design studio for achieving such a purpose). Consequently, developers may need to resort to academic conventions and exhibition events (e.g., the Gerontech and Innovation Expo cum Summit) for testing out their products, which, however, are definitely not the occasions that readily offer a sufficiently large and representative pool of elderly test persons. It is clear that a successful product enhancement process requires not only the best efforts of the developers, but also the collective endeavors of all stakeholders. For instance, the government should take the lead by launching various pilot schemes for enabling the trial of gerontechnology products (Our Hong Kong Foundation, 2017), while the relevant institutions should properly appreciate the potential benefits of gerontechnology, build a more welcoming and less risk-averse mindset against the testing procedure, and provide the necessary guidance and support to their staff members for aiding the enhancement process.

3.3.3. Production and distribution

The last stage of a production lifecycle involves the transition from the product development phase to manufacturing operations and commercial deployment. Understandably, developers may consider this stage irrelevant in determining whether the end product will be elderly-centered or not, since most of the design and functional specifications of the product will have already been finalized by this point. On the contrary, developers should not underrate the importance of this final stage, and should instead continue to keep in mind the unique attributes of the elderly. On the one hand, since elderly people are typically less adaptive and flexible than younger users, developers may need to customize or implement several fine-tuning adjustments for their products according to the specific needs of the targeted elderly subgroups. Since elderly people are usually less actively involved in consumer activities and are thus less aware of the market and purchasing information (see also Asia-Pacific Institute of Ageing Studies, n.d.), developers need to identify or establish suitable channels for reaching potential elderly users and effectively distributing their products. Otherwise, even if the finished product does possess the desirable, elderly-centered properties of being affordable and easy to use, and has also been available in the market for a long period of time, it may still fail to attain a satisfactory market penetration rate (Coughlin & Pope, 2008), thereby missing the opportunity to realize its full potential and display its advantages.

As a demonstrative example, consider Alexa, an AI voice interactive personal assistant which, when used in conjunction with a supported smart device (see **Figure 3.5**), is capable of performing a wide range of tasks in the domain of Communication and information, including making phone calls, streaming podcasts, and providing various types of real-time information including weather, traffic updates and news (Amazon, n.d.). Arguably, although Alexa is not necessarily intended as a gerontechnology, it can serve as a very useful and friendly ICT product for the elderly, since its abundant functionalities require only simple and intuitive verbal commands to access. However, Alexa currently does not support interactions and communication in Chinese. This suggests that, despite its long existence in the market, the product has not yet been made officially available to the elderly in Hong Kong. Evidently, it is a business-driven decision as to whether Alexa should be introduced into the Hong Kong elderly market. However, the point to note here is that in order for Alexa to attract potential elderly users in Hong Kong, the developers must not only expand its pool of supported languages, but also make the necessary customizations to suit the culture, lifestyles, and habits, and to appeal to the tastes and preferences, of the elderly population in Hong Kong. For example, the developers of Alexa would need to change its default display unit of temperature from Fahrenheit to Celsius, the scale system to which most of the elderly in Hong Kong are accustomed.



Figure 3.5. An Alexa-enabled device



Note. Reprinted from *Amazon Echo & Alexa Devices*. (<https://www.amazon.com/smart-home-devices/b?ie=UTF8&node=9818047011>). Copyright 2021 by Amazon.com, Inc.

Last but not least, developers should note that various marketing, branding and advertising factors may also play a subtle role in determining the extent to which their end products are elderly-centered. For example, if developers stress that their products are specifically designed for the institutionalized elderly, but only retail them to nursing homes or assisted living facilities, then a negative stereotype or stigma associating these products with the institutionalized elderly may be created, thereby ultimately undermining the sense of autonomy and independence of the elderly users (see also Lee & Coughlin, 2015). The developers may therefore need to conduct careful marketing research and analyses to ensure that the elderly users can not only fully utilize the functionalities of their products, but also do so without any sense of being stigmatized.

4.1. Overview

The present chapter is intended as a brief summary of the current policies and measures that have been implemented to promote age-friendly communication and information in Hong Kong. Although numerous initiatives and programmes have been introduced by various NGOs and academic institutions, most of them are either directly commissioned by the authority or supported by certain government funding schemes, which clearly illustrates the leading and pivotal role of the governmental bodies in this regard. In view of this, we restrict our attention to the policies and measures that are executed at governmental level, and largely leave out the implementation details of the individual examples of non-governmental initiatives and programmes. In addition, we predominantly focus on the policies and measures that are of direct and explicit relevance to promoting age-friendly communication and information. As a counterexample, while the “Smart Living” initiatives under the “Smart City Blueprint for Hong Kong 2.0” (Innovation and Technology Bureau, 2020) that are associated with the development of telecommunication infrastructures may ultimately benefit the elderly in this respect by granting them better access to the Internet and innovative ICT products, these general policies are beyond the current scope of discussion since they are broadly aimed at transforming Hong Kong into a smart and digital city, instead of promoting communication and information specifically for the elderly.

It should first be noted that most of the policies and measures reviewed in the present chapter are heavily, if not completely, associated with the use and development of ICT. This phenomenon unsurprisingly coincides with our previous assertion that the various parties in our society have devoted disproportionate attention to technology while promoting age-friendly communication and information (Section 2.2.1). It is clear that, despite the efforts and progress made in the past decades, much more still remains to be done to call attention to the other often disregarded components in age-friendly communication and information, e.g. maintenance and promotion of the traditional, non-ICT channels (see Section 2.2.2; see also Section 4.5 and Section 4.6, for some rare examples of policies in this regard), and training and education in communication skills and attitudes (see Section 2.3.2.2).



4.2. ICT Programmes for the Elderly

Under the government's "Digital 21 Strategy" framework (Office of the Government Chief Information Officer [OGCIO], 2007), elderly people have been targeted as one of the priority groups for digital inclusion. As mentioned earlier in Section 3.2, the findings of an impact analysis conducted several years ago showed that affordability and physical access were less of a concern for the elderly in adopting ICT than lack of knowledge and incentives (Wong, Law, Fung, & Lam, 2006). In order to enhance the abilities and interests of the elderly in this regard and thereby encourage a wider adoption of ICT, the government launched the ICT Programmes for the Elderly in 2012 (ICT Programmes; OGCI0, 2020c), under which funding support was provided for three shortlisted projects for providing computer training to elderly people in community elderly centres (OGCIO, 2020b; see also The Legislative Council Commission, 2012). Since then, the ICT Programmes have been continually expanded into the following major components:

4.2.1. ICT Outreach Programme for the Elderly

Between 2014 and 2018 the OGCI0 launched three rounds of its ICT Outreach Programme for the Elderly (Outreach Programme; OGCI0, 2020c), the major objective of which was to provide funding support to NGOs for organizing outreaching activities for elderly people with special needs (e.g. hidden elderly and elderly people with dementia), so that they could not only learn how to use ICT, but also appreciate how ICT may serve as a powerful tool for enhancing their quality of living. Building upon the success of this experience, the OGCI0 has regularized the Outreach Programme from 2018–2019 onwards (OGCI0, 2020e). Recent project activities funded under the Outreach Programme include, for instance, the "#lovin tech #lovin eld" project initiated by The Neighbourhood Advice-Action Council, which is aimed to help elderly people make personalized videos using ICT devices and share them on social media.

4.2.2. Enriched ICT Training Programme for the Elderly

Commencing in 2018–2019, the Enriched ICT Training Programme for the Elderly (Training Programme; 2020d) is intended, as its name implies, to be an enhanced version of the Outreach Programme, in the sense that it is primarily targeted towards those elderly people who are more socially active and cognitively competent, and already have prior knowledge and experience in using ICT. The OGCI0 provides funding to various Elder Academies (see Committee on the Elder Academy Development Foundation, 2017, for a brief description of the Elder Academy Scheme) for organizing different categories of advanced ICT training courses (see OGCI0, 2021, for a complete course list), during which the elderly students can not only improve their abilities to incorporate ICT into their daily lives, but also assume a

leadership role in passing on their acquired ICT knowledge and skills to their learning peers and to the elderly community as a whole.

4.2.3. Elderly IT Learning Portal

The Elderly IT Learning Portal (i.e., www.it2.gov.hk; OGCIO, 2020c) is a website which was launched in 2019 with the aim of facilitating the elderly to build ICT skills through online learning. It contains detailed information about the Outreach Programme and Training Programme, and offers access to a wide array of online ICT courses. The topics covered in these courses include the basic operations of smartphones, cybersecurity, data encryption, e-commerce, and applications of ICT in transport and healthcare.

4.3. eElderly

In 2009, the government commissioned The Hong Kong Society for the Aged (SAGE) to develop, manage, and operate a one-stop thematic online platform dedicated for the elderly, called “eElderly” (i.e., www.e123.hk; The Legislative Council Commission, 2012), which aims to provide the elderly with easy and comprehensive access to elderly-specific information and databases, as well as encouraging them to acquire Internet skills by browsing and navigating through the website. Since its introduction, the functionalities of “eElderly” have been repeatedly updated and refined. For instance, “eElderly” now features an AI assistant which is designed to address enquiries on matters related to elderly homes, a virtual centre which enables elderly users to communicate and share information with each other, and various online course modules which aim at helping the elderly to use and derive benefits from social media (SAGE, 2021).

4.4. Funding Scheme for Digital Inclusion Mobile Apps

Between 2012 and 2016, the OGCIO implemented three rounds of its Funding Scheme for Digital Inclusion Mobile Apps (Funding Scheme; OGCIO, 2020a). Under this scheme, funding is provided for NGOs to develop mobile apps that cater for the special needs of the underprivileged groups, including the elderly. Under the Funding Scheme, mobile apps specifically designed for the elderly were produced, which were downloaded 21,000 times during the period concerned (The Legislative Council Commission, 2016). The “eElderly Activity Search” app (see **Figure 4.1**) produced by SAGE, for example, is a platform where elderly users can search for recreational and educational activities available in their local neighborhoods that best match their personal interests and preferences. Following this successful debut, the funding scheme has now been subsumed and regularized under the Innovation and Technology Fund for Better Living.



Figure 4.1. The “eElderly Activity Search” mobile app



4.5. Community Care Fund Digital Television Assistance Programme

After analogue television services were discontinued at the end of 2020, Hong Kong has now fully entered an era of digital television broadcasting (The Government of the Hong Kong Special Administrative Region [GovHK], 2019). In order to provide the necessary financial assistance to the estimated 80,000 analogue television households which mainly comprise the lower-income elderly families (GovHK, 2020), thereby safeguarding their opportunities to utilize the otherwise free and publicly available digital television services, the government has launched the Community Care Fund Digital Television Assistance Programme to provide each eligible applicant household with a suitable digital television receiver, as well as on-site installation and other complementary services (HKCSS, 2020a).

4.6. RTHK Radio 5

Established in 1978, Radio Television Hong Kong (RTHK) Radio 5 is the only local radio station which designs and produces radio programmes for elderly audiences in Hong Kong (Chan & Cheung, 2009). Most of the radio programmes broadcasted by RTHK Radio 5 are educational and informational in nature, and feature topics that elderly audiences are typically interested in, such as Chinese history, Chinese opera, the art of tea ceremony, and ageing-associated health issues. Some programmes have also been created in collaboration with the OGCI to disseminate knowledge about the use of ICT. RTHK Radio 5 has also partnered with the JCAFC Project since 2015 to incorporate age-friendly messages and information into its programmes and audio lecture series (JCAFC, 2021).

While communication and information form one of the key domains in healthy ageing, empirical research in Hong Kong suggest that there is a mismatch between providers of information and communication channels and recipients, resulting in the potential exclusion of an increasingly large population of older adults who are not able or lose acquired skills in use of automated methods with rapid development of technology, as a result of the ageing process itself.

While the current emphasis on creating a smart city may result in improvements in real time information (transport, traffic conditions, air quality, availability of barrier free facilities on planning travel), and support for healthcare, existing policies and service providers need to be aware that neglecting the needs of a potentially growing group of older adults may result in their digital exclusion as a result of declining function, thereby contributing to their dependency. The tendency of service providers and product designers to prioritize the pursuit of technological advancement over the actual needs of the elderly is a good example. This phenomenon is also evident at the governmental level, in that major policies and initiatives tend to be directed towards the development of ICT-based solutions per se.

This report emphasizes that, in contrast to common perceptions, efforts to promote age-friendly communication and information should not only focus on innovative technology, but also on other less noticeable, yet equally important, aspects such as communication skills. To mitigate this development, traditional channels of communication and information that many older people are used to and are still competent in using, need to be preserved. By offering further insights into the determinants of, and the barriers to, age-friendly communication and information, we hope that the present report can stimulate reflection and discussion among relevant parties and stakeholders. In particular, we hope that they might question the comfortable assumption that the application of modern technology offers the answer to all problems. The provision of age-friendly communication and information requires thoughtful and sensitive planning and execution. Automated solutions have their place, of course, but human sympathy must come first.

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