

## Future Trends Written Report

Group Name: Engaging the Elderly

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Based on Analysis of the Future Scene in Mid-Term and Final Evaluation

STEP 1. Identify Challenges

**Challenge #1**

The elderly are less accepting of new technology because they were unsure of the tech and did not trust it. For example, video monitoring commonly used by healthcare systems used to ensure the safety of the old folks might be seen as intrusive to the elderly. This is a challenge as this might. Older people are put off using online tools because they see them as being arduous and time consuming. They were also resistant as they feared intrusion into their lives and being controlled by a foreign source.

**Challenge #2**

Due to the interconnectivity of smart devices in the house, there is the looming threat of hackers accessing the data recorded by these devices. This is a common fear in adults aged 65 and above who are uncomfortable with the use of AI monitoring systems. They may be uncomfortable as they feel like they are constantly being watched. Hackers will be able to track the movements and whereabouts of the victim at all times and will have access to all their private information. This puts the elderly at risk as they might be targeted in home invasions as they are more vulnerable targets

**Challenge #3**

Due to an ageing population in Singapore, there will be a large number of adults over the age of 65 in 2030. Since the technology used in these smart homes are not cheap, producing them in such large amounts will be an expensive task and not all families might be able to afford such expensive technology. As such, the cost of this technology would need to be reduced such that it is affordable for most families or else the less-privileged elderly might not be able to receive from this technology at home.

**Challenge #4**

The elderly might feel helpless about needing to rely on such technology to help them around their own home. This might cause unhappiness amongst elderly and lead to them refusing to use such technology at home. This in turn makes staying completely safe and getting help when needed difficult for the elderly if they do not possess these technology to help them at home.

**Challenge #5**

The elderly might be slow on learning how to use the technology in their homes. As such, having young volunteers that are well versed on such things go and teach them patiently would be highly beneficial to both the young people and the elderly. However, how might we incentivise the act of volunteering, encouraging the young people to actively take on the role of being mentors for the old people in the usage of technology.

STEP 2. Select a Fundamental Problem

Incorporating Challenge(s) # 1, 2 and 4

Given that the healthcare industry might face increasing animosity from the elderly during Industry 4.0 (Condition), how might we allow a smoother transition for elderly to be able to adjust to the changes in technology (KVP) so that the technology brought by Industry 4.0 can be fully utilized to help the healthcare problems that the elderly may face (PURPOSE) in Singapore in the year 2030 and beyond (PARAMETERS)?

STEP 3. Produce Solution Ideas

**Solution #1**

The elderly could be involved in designing, implementing and testing of smart homes. This will allow them to be more directly engaged in the design and use of technology. Since they will be able to experience most of the technology firsthand, their specific technical needs and problems are more tangible and can be more directly addressed. It is important that the elderly are not alienated from their future homes by the installment of foreign technology.

**Research #1**

i. an engagement session organised by the Smart Nation Programme Office (SNPO) and RSVP Singapore involving about 60 seniors, aimed at ensuring that there is no digital divide as the country moves towards becoming a smart nation — one which encourages citizens to utilise technology and smart solutions to improve their lives.

ii. SeniorNet is a 501(c)3 nonprofit organization of computer-using adults, age 50 and older. Since its founding in 1986, the organization has benefited millions of seniors. It has done so by means of Learning Centers – which have been set up in locations all over the world (as close as Peoria, IL, and as far away as Malaysia). These centers feature an extensive curriculum and instructional materials that break down Internet language into easy, practical guidelines. SeniorNet also offers discounts on computer-related products and services. SeniorNet’s mission is to provide older, underserved adults education and access to computer technologies both to enhance and empower their lives. Retrieved from <http://theideaforge.com/companies-working-get-seniors-onboard-todays-technology/>

**Solution #2**

One of the largest fears of those aged 65 and above is that their personal information is not secure and they might have their privacy invaded. If the elderly are made aware of the immense amounts of safety measures put in place to ensure the safety of their data, they may feel more secure and trust the system, resulting in greater reception and acceptance of the new technology that would help them stay safe in their homes.

**Research #2**

i. According to Forbes, many online platforms uses Blockchain, which is resistant to modification of data which is linked using cryptography, in order to protect data. For example, it is possible to replicate some of Facebook’s features by building them on the blockchain, thus creating a decentralized social media platform. The new, decentralized platform could have many of the same features—a news feed, group interaction, graphs—but with a much-improved voting process for sorting through “fake news” and protecting personal data. By implementing Blockchain to the database of the technology found in smart homes, it will be able to increase the firewall and hence the elderly will be more accepting, knowing that their information is safely protected. Retrieved from <https://www.google.com/amp/s/www.forbes.com/sites/quora/2018/04/20/what-can-we-do-to-solve-the-data-breach-problem/amp/>

**Solution #3**

Many elderly are not open about the idea of technology in their lives as it is a very new invention to them and they have never experienced anything like it so they are afraid of the alien technology. They fear that they may be controlled or have their lives intruded upon by technology. 26% of adults over the age of 65 are unsure or unconfident with the use of electronic workshops that let them experience firsthand the various devices in a smart home will allow them to better understand the devices, removing the misguided mistrust of the technology that the older folk experience and would make them more willing to install them in their smart homes

**Research #3**

i. In 2035, it is projected that the population of Singapore above the age of 65 will be 31.74 percent, a percentage that is high considering Singapore's total population of only 5.8 million today. However, measures have been taken by the Singaporean government in tackling the issue of a dearth of digital awareness among its seniors. The Infocomm Media Development Authority (IMDA) of Singapore has created a website that helps seniors learn how to go digital. Launched in June last year, the IM Silver Portal provides online guides, e-books, videos, and seminars that enable seniors to learn the rigmarole of mobile and digital technologies. According to the elderly, it is now easier for them to learn how to use technology to stay connected with friends and family, enhance the quality of their lives through online resources, hence showing that our solution will be effective. Retrieved from <https://theaseanpost.com/article/technology-and-ageing-singaporean-population>

**Solution #4**

The technology can be easy-to-use and allow benefits for the elderly. This will allow a greater reception towards the many elderly, in turn opening up their minds to the use of new technology. The technology should be able to easy to use and to understand how to use. This way, it will be able to be effectively installed and used by the elderly without much usage difficulty.

**Research #4**

i. elder care technology company Reemo compiles data and presents it in a simple dashboard. It's an ideal solution for seniors who want to age in place; the patient's family or care providers gets peace of mind while the senior patient can see the weather forecast, activities in the community, news headlines and steps, heart rate or sleep patterns — all in one place.

**Solution #5**

Companies that manufacture the technology can get personally involved with the elderly on the benefits of buying their products and how the elderly can solve any problems should they run into them. This will allow a more mutual understanding about how to use the technology for the elderly and what their customers want to see in their future devices and products for the companies. It is able to make the elderly more reassured as they are being explained to by employees of the companies themselves.

**Research #5**

i. German firm TUV SUD showcased these digital solutions and more on Friday (Oct 27), at the official launch of the Smart Elderly Care@Home Centre on Science Park Drive. Dr Andreas Hauser, director of TUV SUD digital service, said that the centre would act as a “sandbox” for companies to pilot innovative smart healthcare devices for patients’ home use.

Retrieved from:

<https://www.todayonline.com/singapore/new-centre-firms-test-smart-homecare-devices-seniors>

STEP 4i. Select Criteria

1. Which solution will be the most cost effective to implement for the government such that the problem of a high cost of buying technology can be solved without the government needing to fund a significant amount of money only on one part of the community?
2. Which solution will be the most easily accessible to ensure that most amount of elderly will be able to benefit from the solution.
3. Which solution will be the fastest to implement for the government/community so that the problem of \_\_\_\_ can be solved as quickly as possible
4. Which solution will be able to be sustained by the government/community for long amounts of time without the government/community having to constantly input resources and time into solving the problems that might arise
5. Which solution will the elderly have to adjust to the new changes the least to reduce animosity toward the technology that they would be using so as to allow the elderly to comfortably transit into this new age of technology

STEP 4ii. Apply Criteria

Step 3 Sol'n #	Solution Idea	Criteria					Total
		1	2	3	4	5	
# 1	Greater inclusion of elderly	2	5	5	4	3	19
# 2	Reassurance of internet security	1	3	4	1	2	11
# 3	Workshops to help elderly	3	4	2	5	4	18
# 4	Easy to use technology	5	2	1	3	5	16
# 5	Company involvement	4	1	3	2	1	11

Key: 1-met the criteria the least, 5-met the criteria the most.

STEP 5. Develop an Action Plan and Evaluate its Feasibility

We, the ministry of Elderly Home Technology, will have specific time slots for the elderly to gather together and actively participate in the designing, implementation and testing of the technology that would be installed in their homes. This will be done neighbourhood by neighbourhood where elderlies will gather at their corresponding Community Centres and play a more interconnected part in experiencing and contributing to this technology firsthand. This is to ensure that the elderly are able to first sense that they do have control over this new and foreign technology that is going to be implemented into their homes, as well as to provide valuable first-hand feedback to the development of the technology and so that it is able to be tailored to the elderly's liking.

These activities will include lessons that aim to familiarise the elderly with the technology that they will be using in the future so that they will be able to use it effectively in ensuring their safety at home. This is extremely feasible as face to face interaction with the elderly can allow them to be more engaged in their learning of how to use the technology. A booth for elderly to ask questions and clarify doubts will be centered around the community centres should the elderly face any problems in using their devices at home. These activities will be held fortnightly and will be subsidised by the government and can be further sponsored by companies manufacturing the technology. This initiative will be tabled for parliamentary discussion by 2023 and the first trial run of the activity will be carried out by November. The first batch of feedback will arrive by December and the necessary changes will be made to the way the activity is conducted and the methods of teaching. Sufficient volunteers/youths will be gathered by June of 2024 and will be launched islandwide by 2025.

Some foreseeable problems that our initiative will be met with include a lack of response from the elderly living in the neighbourhood. Some elderly might feel strongly opposed to the implementation of the technology in their homes and will not even open up to sessions to help them learn about how to use these technology and devices. To combat this problem, we will conduct door to door visits to those of the elderly that are unreceptive to the implementation of the technology. This is feasible as it will allow us to personally answer and address any qualms or inquiries that the elderly might have. Young people might be opposed to spending their free time to explain the technology to the elderly as they might be worried that the elderly will take long periods of time to understand.

## Our work with project ShineSeniors

**Brief description of ShineSeniors:** To help elderly populations continue living independently and safely, TATA Consultancy Services Ltd. (TCS) and the Singapore Management University (SMU) have developed a pilot project deployed in the island nation. Called SHINESeniors, the project is supported by a Singapore government grant, and explores monitoring and assistive technologies at around 100 local Housing Development Board (HDB) apartments. It combines sensor-based internet of things (IoT) technology with data analytics to help people age in place, and uses a community caregiver ecosystem to provide last-mile human touch.

### **Feedback given on possible issues and solutions raised:**

#### **(Issue 1)**

How difficult will it be for the elderly to adjust to the new technology? What measures will be implemented to assist them in getting used to the new technology?

#### **(Solution raised by us)**

Workshops or seminars can be held to give the elderly the ability to experience the technology first hand and learn to trust it.

#### **(Feedback given)**

This solution would be useful and the team had considered using such a solution. However, upon further analysis, it was realised that this solution would only work on a smaller scale such as for the demo units but further discussion would be required to come up with a large scale solution that would be more manpower and cost friendly.

#### **(Issue 2)**

Cyber security. With the recent breaches in cyber security and leaks in sensitive data from companies such as facebook, what are some measures that the ShineSeniors team has taken to protect the sensitive medical data of the elderly clients?

#### **(Feedback Given)**

Our IT Team is constantly upgrading our firewalls to counter attacks from malignant hackers. Furthermore, we have a group of white hat hackers in our employ that seek out weaknesses in our system so that we are able to fix these issues.

#### **(Issue 3)**

How will the elderly be able to afford such expensive technology in their homes? Are there any plans to deal with the issue of high costs?

#### **(Feedback 3)**

Currently for the demo units, we are operating using funding from a government grant. A concrete plan has not been agreed upon but it is likely that this technology will be heavily subsidised by the government.

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