

Future Trends Report
Based on Analysis of the Future Scene in Mid-Term and Final Evaluation
10-11

Identify Challenges

Challenge #1:

The future scene states that the **elderly are increasingly lonely**. This is a problem because they might fall into depression and have greater health problems. Leading them to influence others, such as children.

Challenge #2:

The future scene states that the **Silver Generation Office is ineffective** to the elderly. This is a problem as the elderly might ignore the helpers and thus not receive enough help as they should have received. This will lead to the elderly having health and social problems.

Challenge #3:

The future scene states that there is a **shrinking workforce** due to a lack of manpower. This is a problem as the economy will weaken and face problems. This will lead the country into a financial crisis and be unable to even take care of the elderly

Challenge #4:

The **robots do not understand the elderly's needs and their feelings** thus unable to provide the best service. This will lead to the elderly feeling unsatisfied.

Challenge #5:

There are **limited and expensive resources to build robots**. Since there are limited resources, there will be very few robots made. Due to the limited supply of resources, the cost of production will thus increase. This will lead to inequality that only the rich can afford it and enjoy the benefits from it whereas those who cannot afford cannot be helped by the technology.

Fundamental Problem

Given that the elderly are increasingly facing loneliness due to a lack of mobility and busy work schedules of their children in the future, how can we enhance greater levels of interaction with others, so as to improve their quality of life?

Solution Ideas

Solution #1:

The **government can take note of the elderlies plight** such as the poor services provided to them. This will make the government know how they are living and have a lot of disadvantages to them. This will make the government understand the elderly and donate some money to the organisations, allowing them to make more robots for the elderly to accompany them/ hire more people as caregivers at the companies. This could happen between a few years time (duration).

Solution #2:

The Government can increase the immigration rates to increase **manpower**. This will allow more applicants to apply for jobs such as caretakers. With this the children of the elderly will have shorter working hours, this will allow the children to spend more time with their parents, interacting with them so the elderly will not will lonely anymore. This has quite a high chance of happening.

Solution #3:

The companies of the robot can invent a interactive AI robot to interact with the elderly. With the interactive robot, a form of communication is provided for the elderly unlike the robots who can only perform chores. This robot not only can do chores but also can help the elderly not be so lonely by talking and interacting with them. The robot can also be tasked to do simple and repetitive tasks. With the advancing technology this could definitely happen.

Solution #4:

Even though with the daily interaction with the robots, the elderly are still lonely. This can be due to the fact that the elderly require human interaction to feel less lonely. **The same companies building the robots can instead build elderly care centres for elderlies at where they live, the activity centre will be a place that elderly can come together and have fun by interacting. Moreover these centres also need to provide care for the elderly, so they can hire people to care for them providing the elderly not only social interaction but also care that the caregivers fully understand besides the robot. We feel that this can happen within a short period of time as it will take a short time to build one centre.**

Solution #5:

Industries involved in the making of robots **should research more on materials that are cheaper but yet are still efficient for making the robot with/substitute the robots with caregivers.** With cheaper materials, this means that it will be priced at a cheaper price, meaning more people can afford it which also results in more elderly having a robot to look after them but there might be a downside as since the materials are cheaper it might mean it will last longer. If that is the case, The companies can instead substitute the robots with caregivers--actual human beings, these companies can hire these caregivers to a reasonable salary with a chance that it might be cheaper than building robots. However an unhealthy relationship might form between the caregivers and the elderly.

Select Criteria

Criterion #1:

Which solution will make the elderly most willing to accept the elderlies needs emotionally for the organisations/Government of Singapore so that the elderly will not feel lonely anymore?

Criterion #2:

Which solution will require the least amount of money used for the companies/Government of Singapore so that the elderly will not feel lonely?

Criterion #3:

Which solution will be the most efficient towards the elderly do that the problem of them being lonely will be resolved?

Apply Criteria

Sol'n #	Solution Idea	Criteria			Total
		1(2) 3(3)	2(1)		
#1	The Government can take note of the elderlies plight	3	5	1	14
#2	The Government can increase the immigration rates to increase manpower	4	1	3	18
#3	The companies of the robot can invent a interactive AI robot	2	4	5	23
#4	The companies building the robots can instead build elderly care centres for elderlies	5	3	2	19
#5	The companies can use cheaper materials/substituting with caregivers	1	2	4	16

Action Plan and Evaluate its Feasibility

Bibliography

Action Plan derived from Solution #__3__:

Our action plan is to get companies that make robots to **invent an interactive AI robot** that can adapt to the elderly's needs and thus increase the interaction between the robot and the elderly. The robot can also be programmed to talk to the elderly and not leave the elderly lonely and not sociable. This plan is feasible because in Japan, robots are being made to interact with patients in hospitals and the patients are responding that they are very happy with the robots around. If this is implemented, the elderly will be sociable and can lead a life full of happiness. Their children will also not be afraid that their parents will be lonely at home. The robots can also be used to do repetitive tasks in offices. What are some other things the robot can do? The Care-O-bot can ferry food and drinks to residents from the kitchen as well as keep them entertained by playing memory games to help keep their minds sharp. Some of these robots can also help the elderly cure dementia, providing comfort and interaction with the elderly. Why do we think it is more than likely to be very successful in the future? Right now, aging population is occurring in many countries not only Singapore as the technology spreads, it will spread to Singapore sooner or later. The technology now is very advanced and now, in Japan, the global market for nursing care and disabled aid robots, made up of mostly Japanese manufacturers, is still tiny: just \$19.2 million in 2016, according to the International Federation of Robotics. But METI estimates the domestic industry alone will grow to 400 billion yen (\$3.8 billion) by 2035, when a third of Japan's population will be 65 or older.

Action Plan continued:

What can the robot offer?

The robots offer geriatric patients a variety of services that fall, generally, within three categories: serving and fetching, communications and emotional support. Elderly people dealing with social isolation and loneliness are at increased risk of a variety of ailments, from cardiovascular disease and elevated blood pressure to cognitive deterioration and infection. In short, being old and alone is not good. But robots aren't just good for improving the elderly's movement, they're surprisingly adept at keeping retirees socially, emotionally and mentally engaged as well. All in all our group believes artificial intelligence has the potential not only to care for our elders but to do so in a way that increases their independence and reduces their social isolation. With the interactive robot, a form of communication is provided for the elderly unlike the robots who can only perform chores. This robot not only can do chores but also can help the elderly not be so lonely by talking and interacting with them. The robot can also be tasked to do simple and repetitive tasks. With the advancing technology this could definitely happen.

Therefore we believe that the companies should create an interactive AI robot. This will resolve the problem that the elderly will be lonely.

List of References:

<https://www.reuters.com/article/us-japan-ageing-robots-widerimage/aging-japan-robots-may-have-role-in-future-of-elder-care-idUSKBN1H33AB>

<https://www.engadget.com/2017/08/29/robot-caregivers-are-saving-the-elderly-from-lives-of-loneliness/>

<https://theconversation.com/how-robots-could-help-bridge-the-elder-care-gap-82125>

<https://www.smithsonianmag.com/innovation/how-robots-could-help-elderly-age-in-their-homes-180964650/>

