

Cat 10: Future Trends

Group ID: 10-19

Group title: Techderly

Group members: Ian Ow(leader), Lim Gang Zheng, Ethan Luah, Lucas Goh

STEP 1: Identifying challenges

Challenge 1: Jobs suitable for working elderly will likely be replaced by AI, as most of these jobs are physical and as AI will complete the task more efficiently.

Research: According to an article by DW business, it stated that “To take just one alarming statistic from the report, only 10 percent of adults aged 55–65 are able to complete new multiple-step technological tasks, compared with 42 percent of adults aged 25–54, for example.” This shows that the elderly are not ready for the challenges ahead as they are not equipped with the relevant skills needed for complex tasks. Hence, they will go jobless because they cannot do the jobs that AI can.

Challenge 2: Social interaction between elderly and the society will be greatly reduced, as the elderly risks being on the wrong side of the digital divide. Social interaction will be increasingly be replaced by interactions done through technology as society sees the world through mobile phones and social networks, rather than face-to-face interactions. This will cause the old to be isolated from the rest of the society, especially with the young. Elderly and the young may not be able to understand each other well, especially when new technology platforms and social norms take over as the main source of social interactions. Elderly who may not be able to keep up with the rapid technology changes, may either be locked outside the main social interaction platform or may not understand the new social norms. For

example, elderly may not understand the use of new emojis, new social expressions in the online space.

Research : A research carried out by TechCrunch at the UCSF Centre for Vulnerable Populations at San Francisco cited the risk of the US society leaving older adults out of the digital world. The research cited that even in San Francisco, the home of technology giants such as Twitter, Facebook, and Google, close to half of the older adults did not have basic literacy skills. The issue is unlikely to go away with the current middle-aged generation becoming the future elderly population as rapid technology and social media changes would mean future elderly would similarly face the same risk of digital isolation.

Survey : Our team conducted a survey with a target group of respondents who would be in the elderly group in 20-30 years' time to better understand the challenges the future elderly would face. We received over 100 respondents for our survey. 62.6% of the respondents to our survey felt that it would be harder to communicate and understand people as social media becomes more and more rampant. This is because communication in social media requires constantly evolving digital skill-sets and has its own social norms that could create barriers for social interactions for the elderly group. For example, the youths are using instagram and regard the use of facebook, which is popular amongst the middle-age group, as "old-fashion". This affirms how severe the problem with social interaction for the elderly could become in the near future as more people choose to converse on social media platforms.

Communicating online will result in more misunderstandings as compared to face-to-face interaction and will cause a social gap between the younger generation and the elderly and cause their bonds to weaken. Thus, we need to find a solution to the problem so people can communicate and understand each other well and not cause further problems.

Challenge 3: Elderly might feel left out and alone as the new technologies might be too complex for them and there may not be proper lessons to adequately educate them on how to use the new technologies. They will feel left behind, which could lead to the risk of the elderly having difficulties to go about their daily life activities like making payments digitally and submitting documents online. We have already seen this problem playing out in the recent push by the Government of using cashless payments in hawker centres in the heartlands, where the elderly group is facing the most difficulties in the cashless transition. Fast forward, 20-30 years, say, if bitcoins become the dominant currency for transactions, the future elderly could similarly face a big challenge to go about their daily activities if they could not keep up with the technology changes.

Research: Singapore is among one of the most wired countries in the world, going through a digital and technology revolution - driven by the proliferation of smart devices. These days, there is a mobile application for almost everything imaginable. Among other things, a person can book a cab, order food, buy a movie ticket, shop for groceries, scour for travel deals, track fitness levels, and arrange for laundry cleaning using apps - all at one's finger tips. Yet even as society surges ahead, there is a segment of the population here which is still plodding behind, grappling with the ever-widening digital divide. Chief among this group is the elderly. While technology advancements have not only improved creature comforts for the elderly but also enhanced healthcare and mobility for this group, there is some concern that in the rush towards technology, greater reach and higher productivity, services provided by companies and the Government do not end up elbowing out the elderly, leaving them unable to access the services. Adapted from: Today Online

As it is, many seniors have to rely on others, including their children or more tech-savvy peers, to navigate the increasingly digitised environment. TODAY's readers have written in on several occasions on the perennial issue, voicing the need to ensure the elderly are not left behind in Singapore's march towards becoming a Smart Nation.

Survey :In the survey we conducted, we asked middle aged people if they think that they would feel left out and isolated from the society in the future when technology and AI gets too advanced for them. Surprisingly, 88% of them felt so, even though the profile of the respondents are middle-income level and digitally connected through their mobile phones. We feel that a reason could be that the rapid changes in technology that they are seeing happening around them and they fear not being able to keep pace. Furthermore, the middle-aged group, which will be the future elderly in 20-30 years, also came through the previous education system that may not best equip them to deal with the rapid technology changes.

Challenge 4: Elderly with deterioration in physical capabilities due to aging, e.g. poorer eye-sight and less agile motor skills etc, may face challenges in using new technologies if the devices are not designed with elderly in mind.

Research: "Accessible Design" and "Designing for the Elderly" is an emerging research area that draws attention and awareness on the issue that the elderly use digital technology differently. Cited in many of these research is the issue that the tech industry tended to cater to the needs of the young and "forget that older people exist". This is because tech workers are majority young and they may not think about or understand the needs of the elderly when designing tech devices. Adapted from

UXPLANET.ORG “Accessible Design: Designing for the Elderly”
and researchgate.net “Designing User Interfaces for the Elderly”

Challenge 5: Elderly may become more prone to scams and their personal particulars may get stolen by hackers who hack their into accounts which contain their personal particulars. The elderly may also be unaware of the situation and how to prevent it. The elderly will be highly targeted as they do not have as much knowledge about technology as compared to others and will be easier to trick.

Research: Like younger generations, many seniors are using the internet to manage their finances, with 41 percent banking online and more than one-in-four (26 percent) paying bills online. And nearly one-quarter of seniors (21 percent) file their taxes online. As seniors' finances move online – coupled with what scammers view as perceived financial security and a trusting nature – seniors are a primary target for scammers. Approximately one in 10 seniors (9 percent) said they had been a victim of criminals posing as the IRS and demanding immediate payment of taxes. Adapted from recent news article in The Straits Times.

Step 2: Select a fundamental problem

Underlying problem: Given that technology is getting more advanced and the elderly might not be able to keep up, it is very likely that the elderly will feel left out and become isolated from the rest of the society, which might in turn lead to severe negative impacts on their mind (condition phrase). How might we help the elderly to integrate better with the society such as the young (key verb phrase) so that they

can be better equipped with technology skills to be better integrated into the society (purpose)in the near future?(future scene parameters)

Step 3: Produce solution ideas

Solution 1:The government can organise courses for more of these jobs to upgrade their relevant skills. Otherwise, the elderly may not have learnt or be equipped with the relevant skills they will need for the remaining jobs that are available. They can organise these skill upgrading lessons in the Community Centres which are mainly focused on equipping the elderly with the necessary skills for the different jobs to help them better manage their jobs as most elderly would have nothing to do at home and would rather come out. They might also have money problems so with the free place for them to have lessons on various skills for different jobs, this ensures that the elderly will be able to secure jobs that are not taken over by AI in the near future as they have the relevant knowledge and skills to do the work required by those jobs.

Obstacles faced: Too much money and resources will be spent in this aspect causing a probable change in taxes to get the money required.

Solution 2:The reduction in face-to-face interaction may serve as an opportunity for people from different walks of life to understand and interact with each other through social media platforms even if they are shy, they will still be able to make friends and voice out their opinions freely on things. However, there will still be many situations where face-to-face interaction is much better than interaction online. For example, when people have to

agree on important incidents like political issues or when we are having precious family time, human interaction would still be better. We can understand each other better through face-to-face interaction as we will know their emotions and what they really mean through their expressions and tone of speech. When we communicate online, there may be misunderstandings as we may get the wrong idea. Face-to-face interaction can help eradicate that problem. Thus, to solve this problem, we can have activities where people can meet up and take part in these activities together. Companies, schools and community centres can help organise these events to bring friends and families together, like bringing in and involving the friends and family members of the person in that school or company with the preparations of activities or joining in to have a good chance to interact and better understand their family members at work or school. This will increase face-to-face interaction among family members and increase the understanding and bond among them.

Obstacles faced: not many people may come down to interact as they feel they can already do that with social media at the comfort of their own home. There might also be some trouble makers that come down to create racial disputes.

Solution 3:The Government can help these elderly cope with the Fourth Industrial Revolution by creating a simple online website or platform where elderly can better learn how to use these technology at their own pace, step by step. This will better suit the elderly as it will be more comfortable for them as they do not have to rush to keep up and worry about missing out on anything. These platforms aim at helping the elderly understand more about the various kinds of technology and how to use them properly. These platforms also allow their family members to participate with them and this can also promote family bonding. Also, their family members understand their relatives better than the trainers at the course do, hence, they are able to better guide

the elderly in some areas. Through these courses, it not only helps the elderly spend more precious time with their family, it also properly educates them on the use of technology, thus killing two birds with one stone.

Obstacles faced: not many of the elderly have children who are still in close contact with them and thus this may make those elderly feel left out and lonely.

Solution 4: To solve this problem, the elderly have to be equally informed and active with using technology as compared to the younger generation. To do this, community centres can promote the use of technology to help the elderly have a more positive attitude towards learning how to use technology. Thereafter, we also need to pull in the younger generation to teach the elderly how to use these technologies and learn more about the digital world. It will be volunteer work where youths can volunteer their time to teach these elderly about mobile devices can join and they can discuss about how and when they want to meet up with these elderly to teach them. This will help strengthen the understanding between the younger generation and the elderly so that the elderly and the younger generation can better help each other through identifying their needs.

Obstacles faced : The younger generation might find this a waste of time and would rather spend it doing something else.

Solution 5: Firstly, the elderly must have a greater knowledge about technologies and have a deeper understanding of how to prevent themselves from being scammed and how to safeguard their personal particulars online. We need to raise the awareness of these elderly of the severity of the problem. For the technology classes, the first lesson could probably be used to teach them about the basics of

how to use digital devices safely and wisely to protect themselves. Online safety can also be practiced by these elderly during their technology lessons. There can also be mass lectures via radio stations and televisions through channels often watched by the elderly. The elderly are using more of radios and televisions nowadays, so more elderly will take note if these lectures are on channels or stations that they frequently visit and will be more effective. For a start, if these elderly are still unsure or not confident, their family members or a trusted friend who have the relevant knowledge can also teach them and provide them with help and guidance to ensure their safety online so that these elderly will be less prone to scams, hacks and information the elderly receive on televisions like fake news etc.

Step 4: Identify and evaluate solutions

Our team identified a list of potential solutions to address the key challenges and evaluated them against the following criteria:

Criterion 1:

Speed of Implementation - Which solution would be the fastest to implement?

Criterion 2:

Effectiveness - Which solution would the elderly benefit most from?

Criterion 3:

Scalability - Which solution could be scaled up through support by the wider society.

Criterion 4:

Cost of Implementation - Which solution would be the cheapest to implement?

Step 4b: Apply Evaluation Criteria on the list of possible solutions

Weighting (out of 5)	Criteria 1(1):	Criteria 2(4):	Criteria 3(3):	Criteria 4(2):	Total:
Organising Job fairs	1	3	4	2	29/50
Organising compulsory digital courses	2	4	2	2	28/50
Roping in the younger generation to teach the elderly	3	4	5	4	42/50
Protecting Jobs for the elderly	1	4	3	1	28/50

Step 5: Developing our action plan

We, the determined group of students who aim to equip the elderly with technological skills to better integrate into the society, have identified the solution of roping in the younger generation to teach the elderly as the best way forward. Our conceived solution is based primarily on volunteerism where youths can volunteer themselves to teach the elderly.

Ability to reach out to the youth to inspire them to step forward to volunteer will be key to the success of our proposal. To do that, we propose to use a twin strategy using high-technology and low-technology means.

We think that the tried and tested low-technology approach of reaching out to the youths, appealing to their heart and passion to help the elderly remains relevant even in the new world of the Fourth Industrial Revolution. We will publicise the activity through schools, old folks' homes and social media so as to let people be aware of this activity and to help them understand the details of the volunteer work, so that we can gather more volunteers. We are confident that there will be a sufficient number of volunteers who are willing to teach the elderly as a survey from CNA shows that volunteerism doubled from 2014 to 2016. We would also work with the Ministry of Education (MOE) to create programmes in primary schools to instill the passion and commitments in our students from young to want to help the elderly. We would also propose to MOE to make compulsory for students in upper secondary and beyond to volunteer to help and teach the elderly on the new digital skills and social platforms.

We also propose to use technology to solve the problem created by the technology. We will leverage on new technologies and capabilities in the Fourth Industrial Revolution to address the very problem that these technologies are creating for the elderly group. Our group call it the "Techderly" digital world connecting the youth to the elderly.

"Techderly" app will leverage on AI and cloud sourcing to bring together and match the volunteers and the elderly group in need. Our team got our inspiration from a pilot project by Accenture on the use of AI for elderly care (and success of cloud-sourcing platforms such as Uber and Amazon.) The "Techderly" app will help to match youths with the elderly group that best fit the profile and personality of the youths. The "Techderly" app will also gather other personality profiles of the elderly in need and use that for the specific help needed and the personality profile of the elderly group

involved. The AI will then help best match the youth volunteer to the elderly. For example, the platform will match the youth volunteers who can teach a particular group of elderly which speak fluently in the same language or dialect. They will then find a common date to meet up face-to-face and the elderly can consult the youth trainers about some of the problems and difficulties that they face and the youth trainers can help to provide tips based on their experience and teach them new technological skills. The elderly being helped can then also leave behind feedback on the app for the youth volunteers. For every good feedback received, the volunteer receives 10 points and when accumulated to 50 or 70, they can earn a mini prize such as a water bottle. This would serve as motivation and incentives to attract youth to volunteer for the programme.

The “Techderly” app will help the youth and elderly integrate into the digital society. Through such integration, the elderly will get help on how to use and navigate the new technology. The youths and the elderly will better understand each other better.

This solution requires minimum costs and helps to solve 3 of the challenges that we had mentioned earlier, making this a very beneficial solution. Firstly, it solves challenge 1 as the elderly will no longer be ignorant to the new jobs and will stand a better chance in getting a job in the future. Secondly, it solves challenge 2 as through the youth teaching the elderly, there will be much social interaction between them as the young will give these elderly tips while the elderly can share about the problems and difficulties that they face. Through their conversations, they will better learn about how to use technology to their advantage and also better understand the thoughts of the younger generation nowadays. Lastly, it also solves challenge 3, as through these interactions, the elderly will no longer feel isolated and left out from society. This solution kills 3 birds with 1 stone. Furthermore, when surveyed on whether this solution would be a good idea, 90.0% of the respondents to our survey agreed.

Implementation Timeline

This is our implementation timeline of our action plan:

Year 2030: Government decides to implement the volunteer hub “techderly”

Year 2032: Plan for “techderly” is laid out

Year 2033: Ministry of Community Development, Youth and Sports, led by Minister Grace Fu, together with several partner companies and organisations, give feedback and make changes

Year 2035: First volunteer hub opens, public try it out and provide helpful feedback on how to improve

Year 2036: Government debates the implementation of “Techderly” based on feedback by the public

Year 2037: More volunteer hubs open in few areas around Singapore, slowly expanding to other places around Singapore.

Year 2038: “techderly” formerly begins business!

Key Verb Phrase:

- Given that the key verb phrase in our fundamental problem is "help the elderly better integrate into the society such as the young", our action plan and solution addresses this problem because by roping in the younger generation to teach the elderly, both the young and the old will be willing to converse with one another and learn from one another. The elderly will be able to better use technology to their advantage and can also better understand the needs of the younger generation as well as how to better communicate and bond with them. This will help bring the young and the old closer and the elderly will thus better integrate and become part of the society by understanding one another in the society.

Obstacles our action plan may face : The youths may find their precious time wasted on helping the elderly as they would rather spend their time doing something else. The youths may also have problems communicating with the elderly as the elderly speak mostly Chinese or different dialects thus there may be a language barrier and it would be harder for the youths to engage the elderly.

The youths may not be understanding and may find the elderly “dumb and troublesome” therefore being unwilling to teach them due to frustration.

Solutions to this obstacle: This app will be widely publicised and promoted through social media means and old folks home, ensuring that there is a healthy number of volunteers. Furthermore, there is an incentive as when the youth trainer receives a piece of good feedback after teaching an elderly, the youth trainer can accumulate points which in turn can be exchanged for gifts, hence this will attract more youth volunteers to come and help out.

Citations:

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