



Job Hack 2021
#ReinvigorateHK

Team G

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Silver Immunity

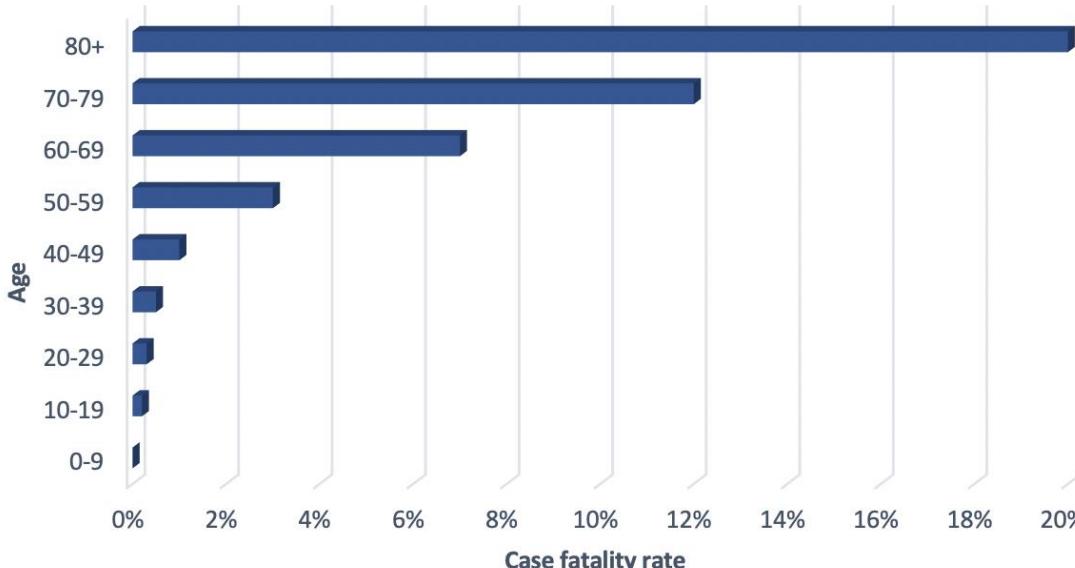
Unlock the power of technology for the Elderly

Elderly's high vulnerability makes them in greater need of healthcare support



Elderly are most vulnerable under the virus

Coronavirus: Case fatality rates by age



92% of COVID-19 deaths in Hong Kong are people aged 70 or older

Caused by



Poorer immunity system

Higher risks of infections and lower chances of recovery



Existing health conditions

Increase risks of complications and death



Unaware of proper hygiene practices

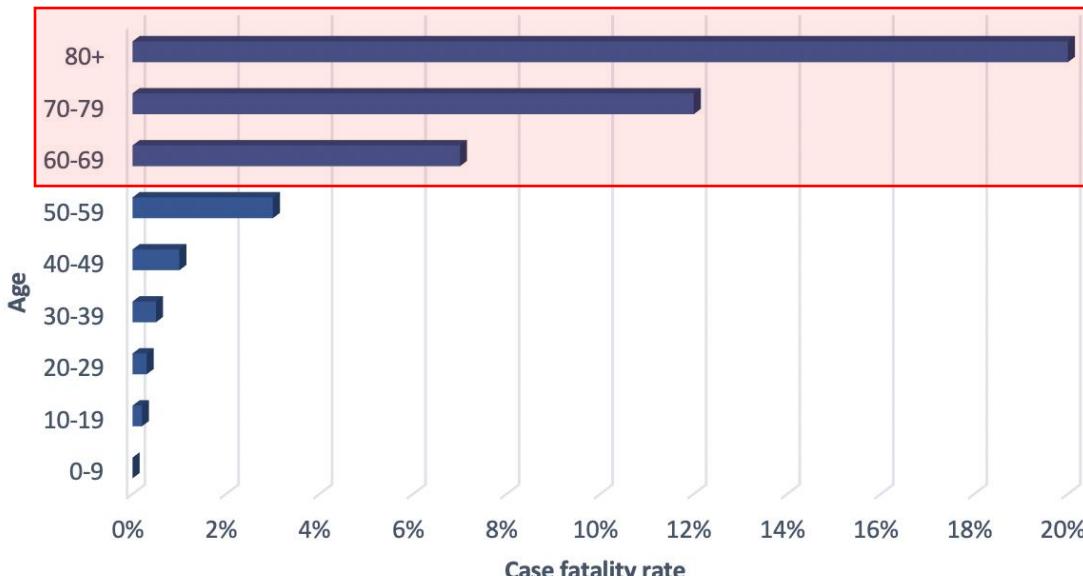
e.g. how to wear masks

Elderlies are in need of more healthcare information and support about the virus

Elderly's high vulnerability makes them in greater need of healthcare support

Elderly are most vulnerable under the virus

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Elderlies are in need of more healthcare information and support about the virus

Social distancing measures force elderlyies into further isolation



Before COVID-19



*Frequent social gatherings with friends , families
and visited by volunteers*

Social distancing measures force elderlyies into further isolation



Before COVID-19



After implementation of social distancing measures

Frequent social gatherings with friends , families and visited by volunteers

Now...



Social distancing measures and fears of infection leads to elderlyies spending much more time alone

Social distancing measures force elderlyies into further isolation



Before COVID-19

After implementation of social distancing measures

Frequent social gatherings with friends , families and visited by volunteers

Now...

Isolation and anxiety amid virus leads to dramatic increase in mental health issues

52%



YoY increase in cases where elderly need emotional support

SCHSA: Increasing signs of emotional distress and anxiety, or even symptoms of post-traumatic disorder

**Especially for solitary elder*

Social distancing measures and fears of infection leads to elderlyies spending much more time alone

Elderlies are in need of companions and greater emotional support

Low familiarity in new technologies obstructs daily living



Elderlies are unfamiliar with digital applications

57% of elderlies have no experience in using smartphones

Due to:



Inability to use smartphones



High price of smartphones



Fears for security and privacy issues



Elderlies have fewer chances to go out or be visited by their families



Elderlies lack online shopping experience



Elderlies lack sources of entertainment

Elderlies find it harder to adapt to the “new normal”

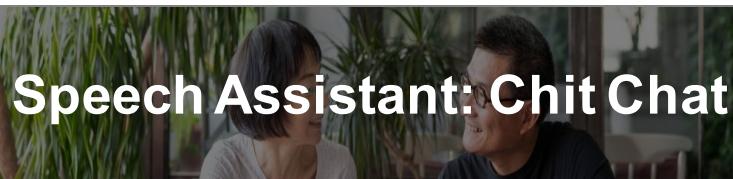
Elderlies are in need of a simple, low-tech way to fulfill daily needs

Our solution provides multiple services to improve elderly's livelihoods



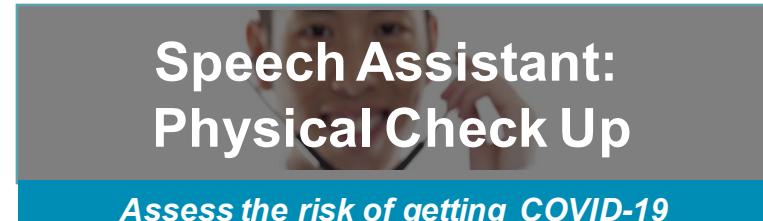
Physical health:

in need of information about the virus



Speech Assistant: Physical Check Up

Assess the risk of getting COVID-19



Features



Technology and Application

Problem: Low familiarity with new technologies
Less accessible for online data and News

Solution: **Bing COVID-19 Tracker (Real time)**
Where to and not to go

Features



Technology and Application

Problem: Low familiarity with new technologies
Less accessible for online data and News

Solution: Bing COVID-19 Tracker (Real time)
Where to and not to go



Problem: Social Distancing Rules
Limited visit from friends or family
Lack of companionship and gets lonely

Solution: Mental checkup and chit chat from AI Robot
Q&A Format to check on elderly daily

Features



Technology and Application

Problem: In need of groceries
Elderlies health at risk under COVID-19
Reduce the frequency for groceries shopping

Solution: Call the AI Robot Centre for volunteer
to help purchase contact-free delivery

Features



Technology and Application

Problem: In need of groceries
Elderlies health at risk under COVID-19
Reduce the frequency for groceries shopping

Solution: Call the AI Robot Centre for volunteer
to help purchase contact-free delivery

Problem: Forth Wave of COVID-19
Neglected the symptoms for possible infection

Solution: Physical checkup from AI Robot
AI Robot: Ask if any COVID-19 related symptoms
**Generate data together, 50%> alert the social centre to help
the elderly to reserve for Community COVID-19 Testing
Centres online**

Data Source

Data: Registered elderlies from social centre

- ✓ Phone number
- ✓ Address
- ✓ Personal Information

Developer Tools

Azure Cognitive Services:
Natural Language Processing

- **Speech:** Speech to text and text to speech
- **Language** understanding: Text Analytics (NLP)
- **Knowledge:** Recommendation
- **Bing Search**



Speech



Language



Knowledge

Application Services

AI Robot Call Centre

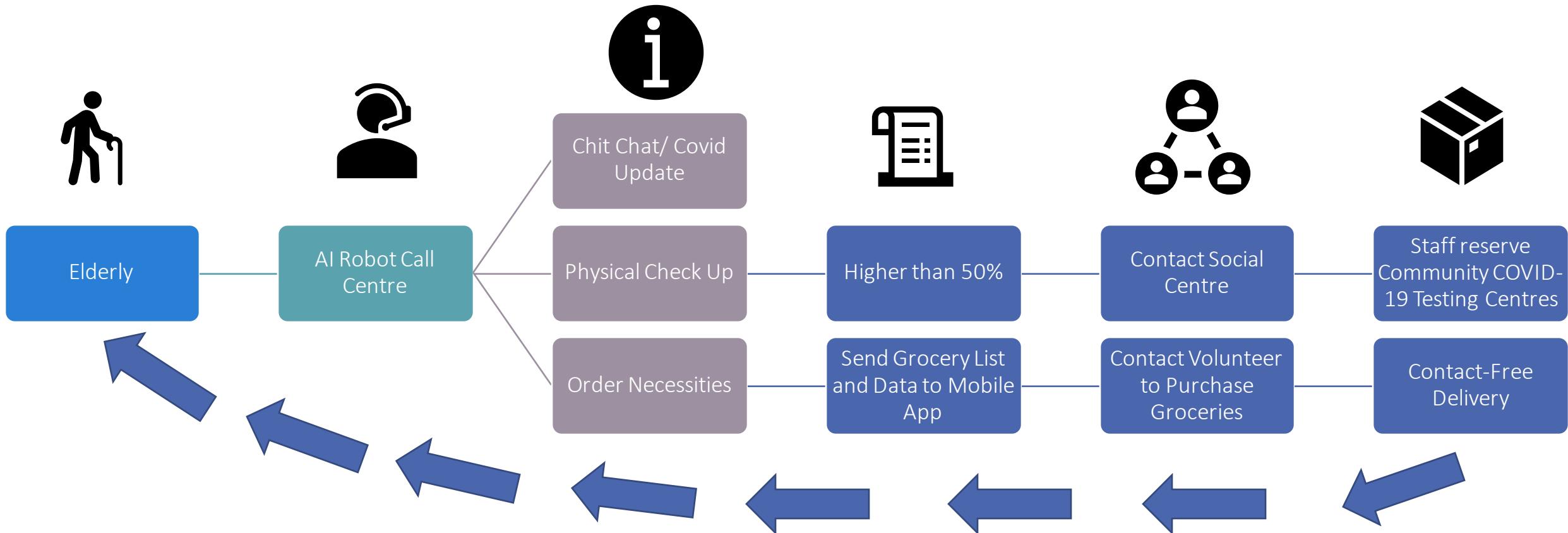
- Bot Service Framework

Mobile Apps

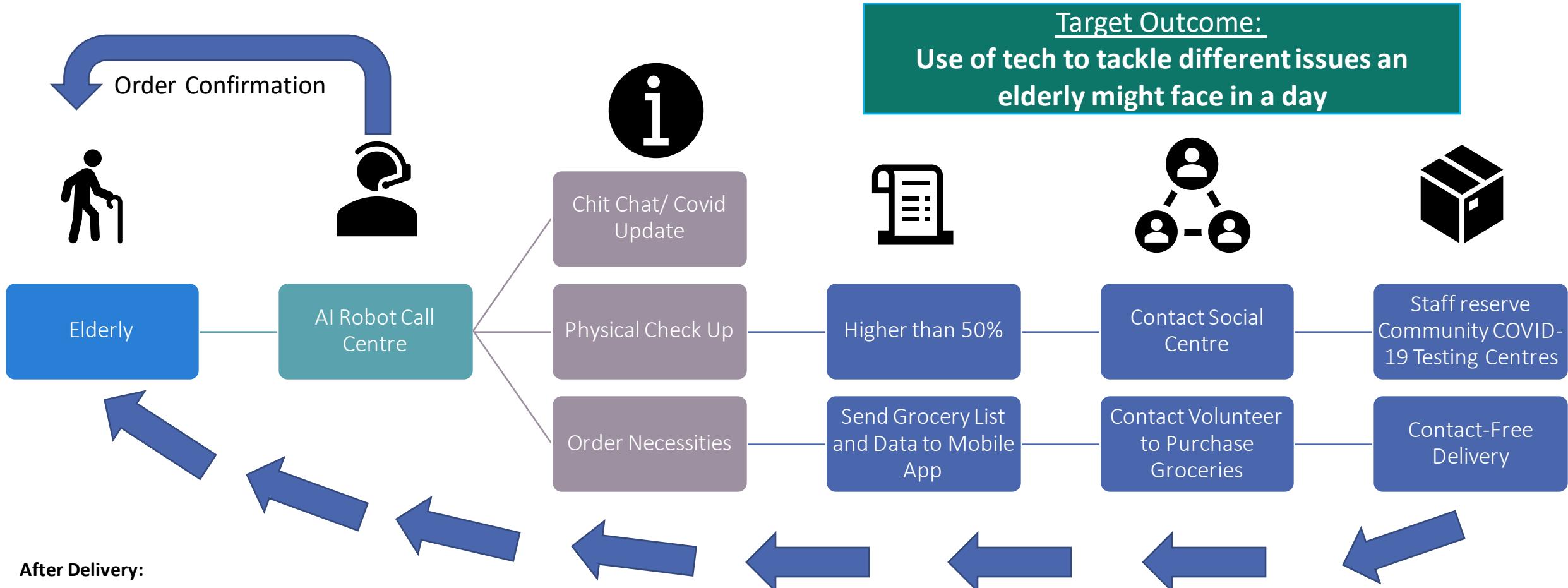


Bot Framework

Technology Application Flow



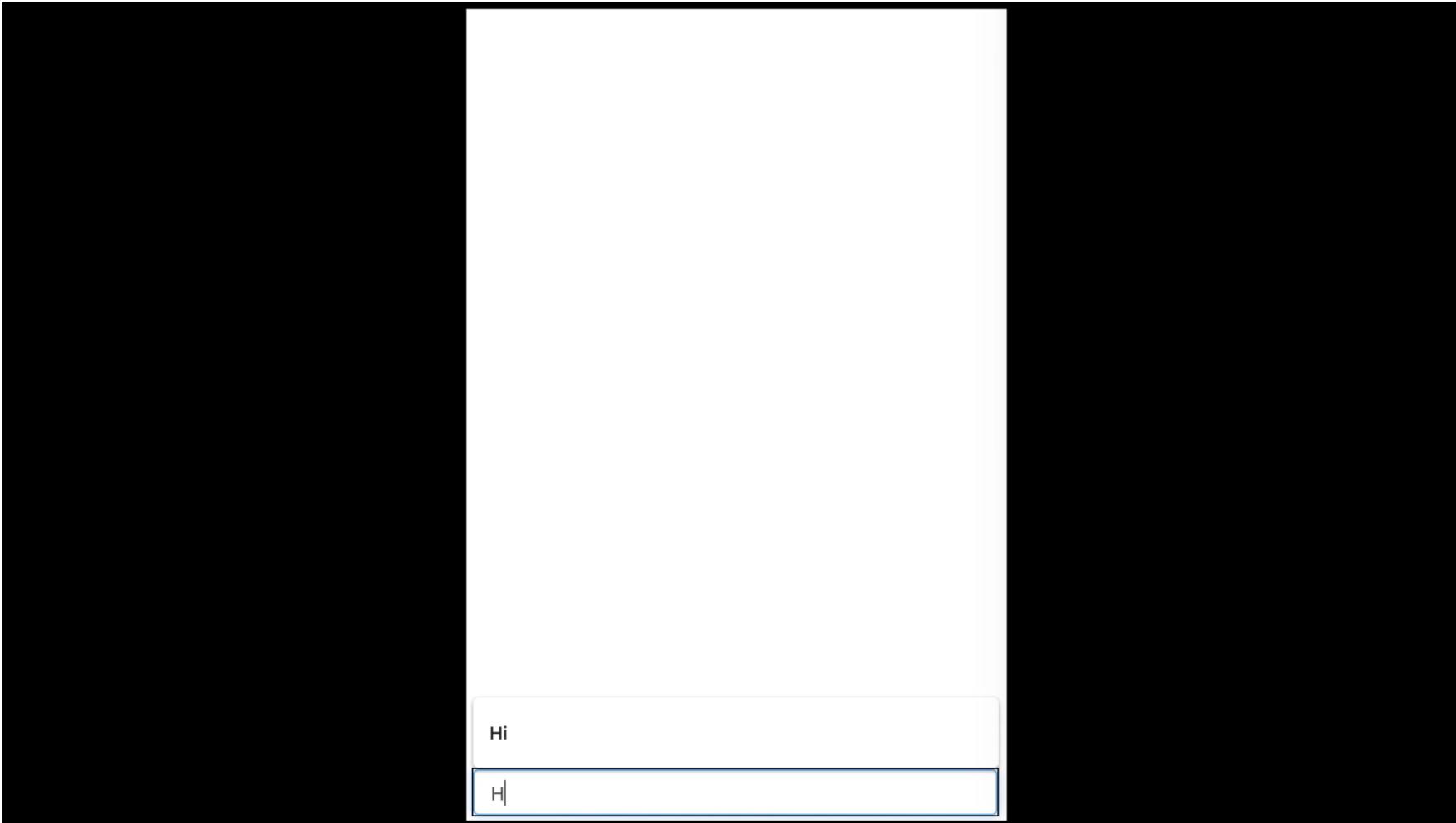
Technology Application Flow



After Delivery:

- Volunteer pressed " Delivered" at the mobile app
- 5 mins later: AI Call Centre will call customer
- Order Confirmation

Silver immunity elderly side demonstration



+ Q&A Maker: Silver immunity-- Covid Bot



Provide service during Covid 19 to the user by simple conversation.

AI shopping experience

Hi there! What do you need?

Silver immunity (Test) at 3:44 AM

I want to order tissue

Inspect You

Sure! How much do you need?

Silver immunity (Test) at 3:44 AM

10 boxes

Inspect You

No problem! Anything else?

Silver immunity (Test) at 3:44 AM

Not really

Inspect You

Okay! Your order has been placed!

Silver immunity (Test) at 3:44 AM

Type your message here ...

+ Q&A Maker: Silver immunity-- Covid Bot



Provide assessment for physical health to the elderly.
Provide more information if the elderly is not feeling well.

Simple Questions to determine whether the user should seek medical help with their situation.

Such as elderly that have coronavirus disease symptoms, or people who had been diagnosed with respiratory diseases before or during Covid 19.

How are you feeling today?

Silver immunity (Test) at 3:49 AM

Not so good

Inspect You

Are you coughing lately?

Silver immunity (Test) at 3:49 AM

A bit

Inspect You

Hmmm, where else have you been lately?

Silver immunity (Test) at 3:49 AM

Nowhere, just home

Inspect You

Ok, do take care!

Silver immunity (Test) at 3:49 AM

Type your message here ...

+ Q&A Maker: Silver immunity-- Covid Bot



Provide entertainment through conversation.

Greetings, Jokes, emotion keywords.

Hello

Inspect You

Hi there! What do you need?

Silver immunity (Test) at 3:55 AM

I am bored

Inspect You

I can tell you a joke. What kind of tree fits in your hand? A Palm Tree!

Silver immunity (Test) at 3:55 AM

Hahahaha

Inspect You

Glad you liked it!

Silver immunity (Test) at 3:55 AM

Type your message here ...

Silver Immunity Portal (Volunteer side)



Silver Immunity Portal

Volunteer Login

Account name

Password

Log in

Don't have an account?

Create Account

Forgot Password?

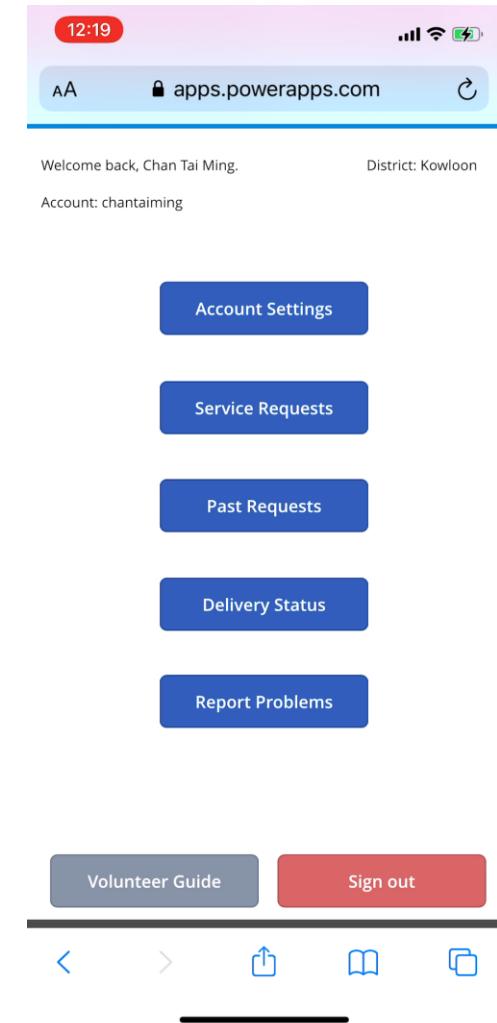
Email Address:

Send authentication to email

Users: Volunteers from non-profit organisations, individual volunteer

Functions:

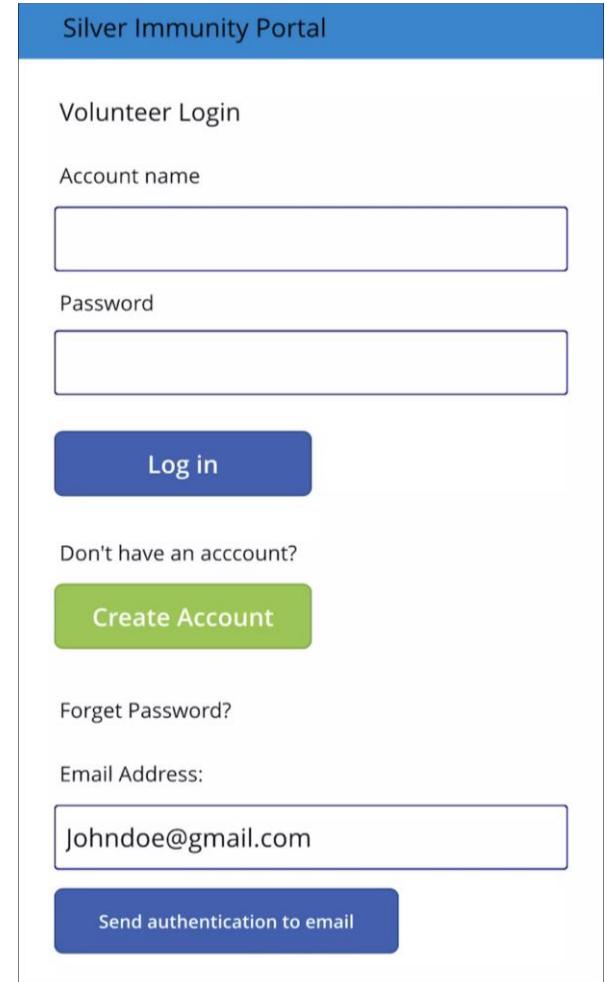
1. Register: Create an account to match volunteer with elderly in need
2. Log in and log out
3. Account Settings: Phone, address, service area
4. Service requests: Accept or decline requests
5. Past Requests: Review past requests
6. Delivery Status: Track the item delivery, confirm delivery and notify the elderly
7. Report problems: Report technical problems, requests problems or personal information changes.
8. Volunteer Guide: Explain each function and a list of their shortcuts
9. Recover account: Enter email to recover the account when the user forgot their password.



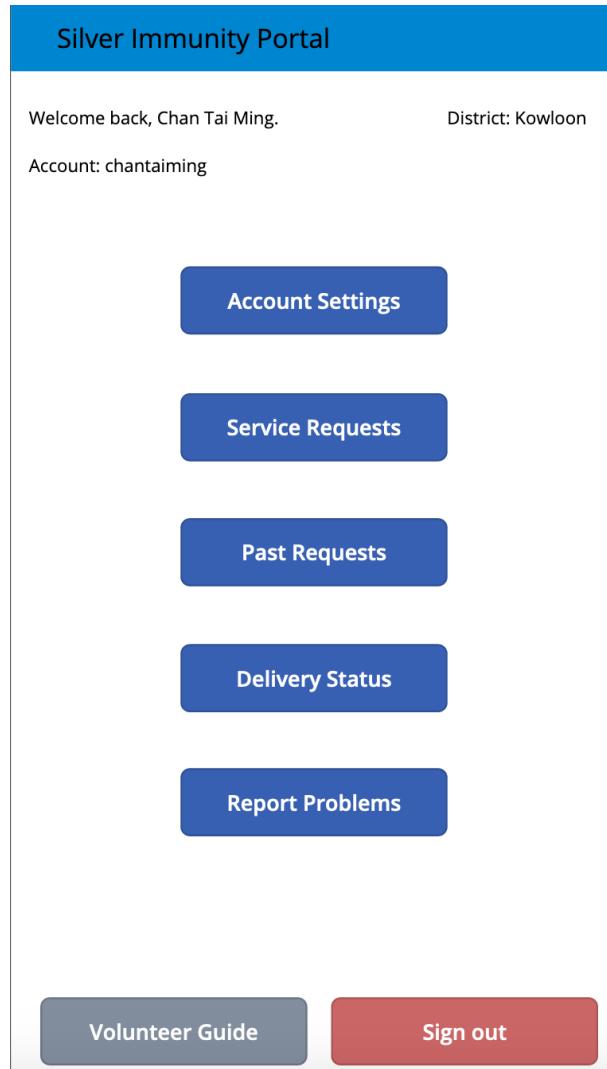
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The screenshot shows the 'Silver Immunity Portal' login interface. It features a blue header bar with the portal's name. Below it, the 'Volunteer Login' section includes fields for 'Account name' and 'Password', both represented by empty input boxes. A large blue 'Log in' button is positioned below these fields. To the right of the login form, there are links for 'Don't have an account?' (which points to a 'Create Account' button) and 'Forgot Password?'. At the bottom, there is a field labeled 'Email Address:' containing the placeholder 'Johndoe@gmail.com' and a blue 'Send authentication to email' button.



Main Page

Menu of all functions in the app

Every function will have a return to main page shortcut

Silver Immunity Portal

Account: chantaiming District: Kowloon

Account name: chantaiming

Email: chantaiming@gmail.com

Service District: (select 1 or more)

- 1. Kowloon
- 2. Hong Kong Island
- 3. New Territories

Address: 123 ABC St, Kowloon, Hong Kong

Phone number: 1234 5678

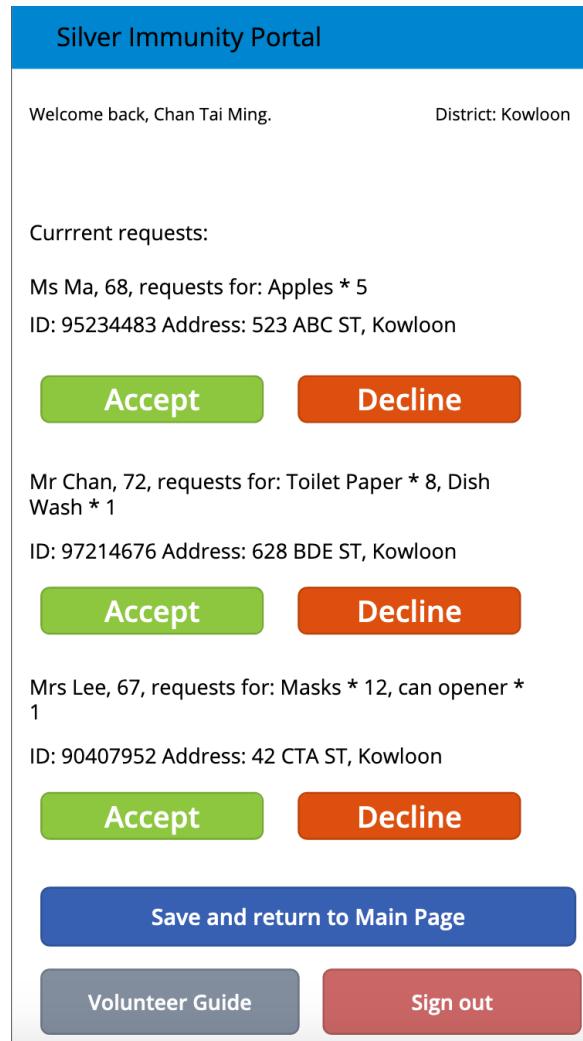
[Save and return to Main Page](#)

[Volunteer Guide](#) [Sign out](#)

Select service locations

Volunteer moved/ changed number

To find the nearest helper for the elderly



List of service requests

Accept or decline the requests

Silver Immunity Portal

Welcome back, Chan Tai Ming. District: Kowloon

Account: chantaiming

Past Requests:

Mrs Lee, 67, requests for: Masks * 12, can opener * 1
ID: 90407952 Address: 42 CTA ST, Kowloon
Status: Accepted

Mrs Lee, 67, requests for: Alcohol Cleaner * 2, Toilet Paper * 8
ID: 94724829 Address: 162 CBE ST, Kowloon
Status: Delivered

[Confirm and return to Main Page](#)

[Volunteer Guide](#) [Sign out](#)

Check the history of requests

Accepted/ Delivered

Silver Immunity Portal

Welcome back, Chan Tai Ming.

District: Kowloon

Account: chantaiming

Pre-Shipment

Mrs Lee, 67, requests for: Masks * 12, can opener * 1

ID: 90407952 Address: 42 CTA ST, Kowloon

Status: Accepted

Delivered

Mrs Lee, 67, requests for: Alcohol Cleaner * 2, Toilet Paper * 8

ID: 94724829 Address: 162 CBE ST, Kowloon

Status: Delivered

Confirm and return to
Main Page

Volunteer Guide

Sign out

Package tracking

Mark as delivered and notify the elderly

AI bot will call the elderly



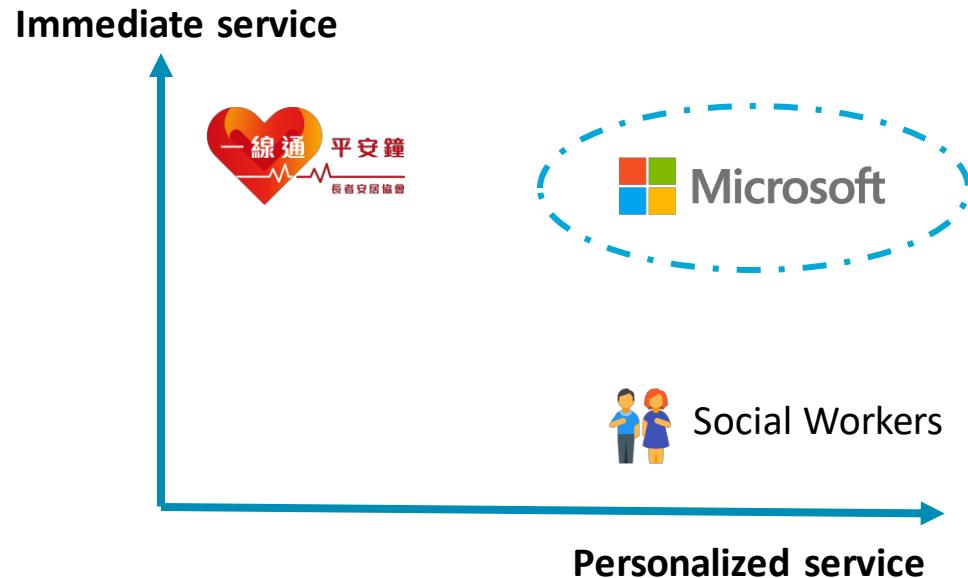
Report problems

**Technical, requests,
personal information**

A unique and scalable project for Microsoft



Fill in the elderly service gap



Silver Immunity deliver the **daily and personal** service that address holistic wellbeing needs

32

A unique and scalable project for Microsoft



Fill in the elderly service gap

Immediate service



Personalized service

Silver Immunity deliver the **daily and personal** service that address holistic wellbeing needs

Leverage on past NGO partners for immediate scale



Using Power BI to establish efficient medical checkup and recording process



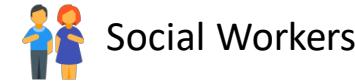
Microsoft Teams enables remote consultation services to elderly and chronic patients

A unique and scalable project for Microsoft



Fill in the elderly service gap

Immediate service



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Silver Immunity deliver the **daily and personal** service that address holistic wellbeing needs

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Using Power BI to establish efficient medical checkup and recording process



Microsoft Teams enables remote consultation services to elderly and chronic patients

Aligned with Microsoft AI for Health's vision

Quest for discovery

Provide data to accelerate the research on elderly health issues

Global health insights

Gather insights on global health crisis such as COVID-19

Health equity

Reducing health inequity against the disadvantaged elderly

Instead of the dollar impact, Silver Immunity brings people impact



Input

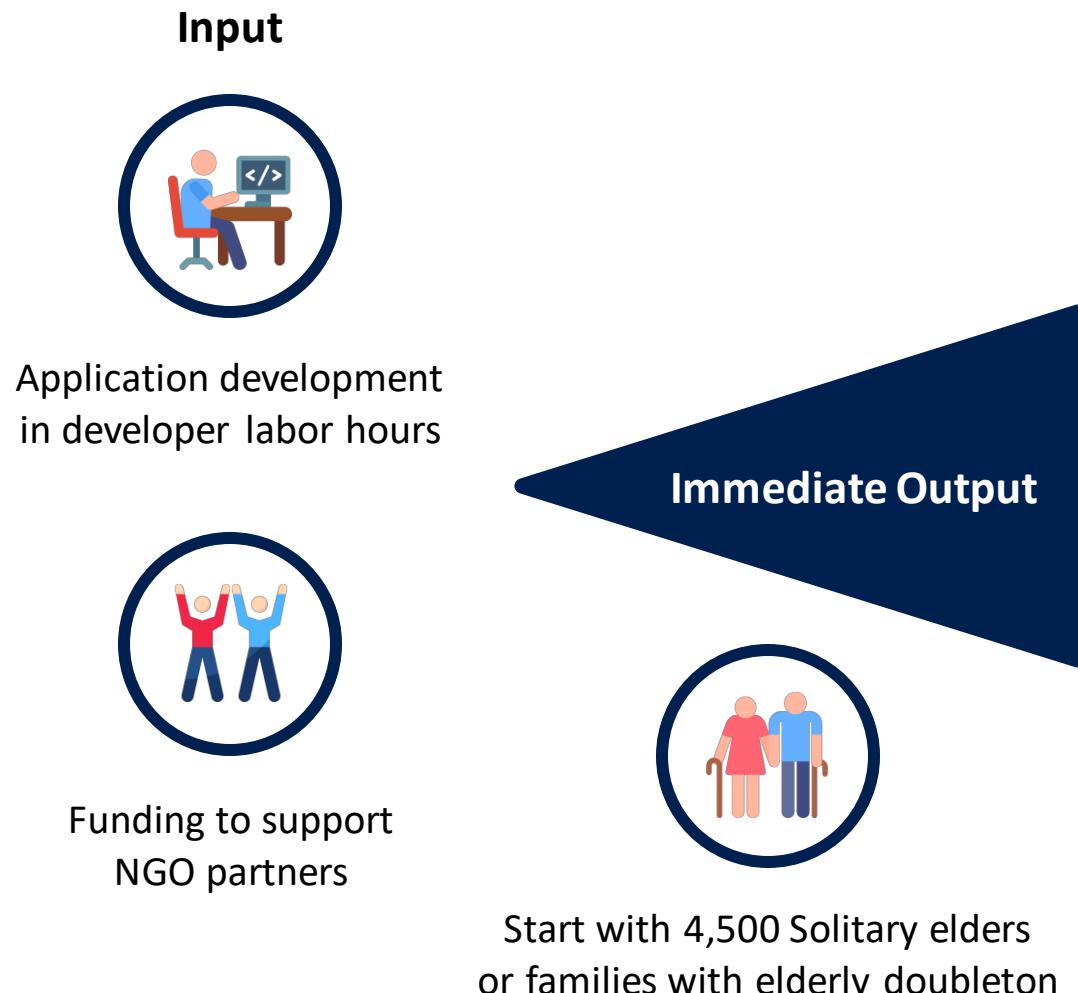


Application development
in developer labor hours

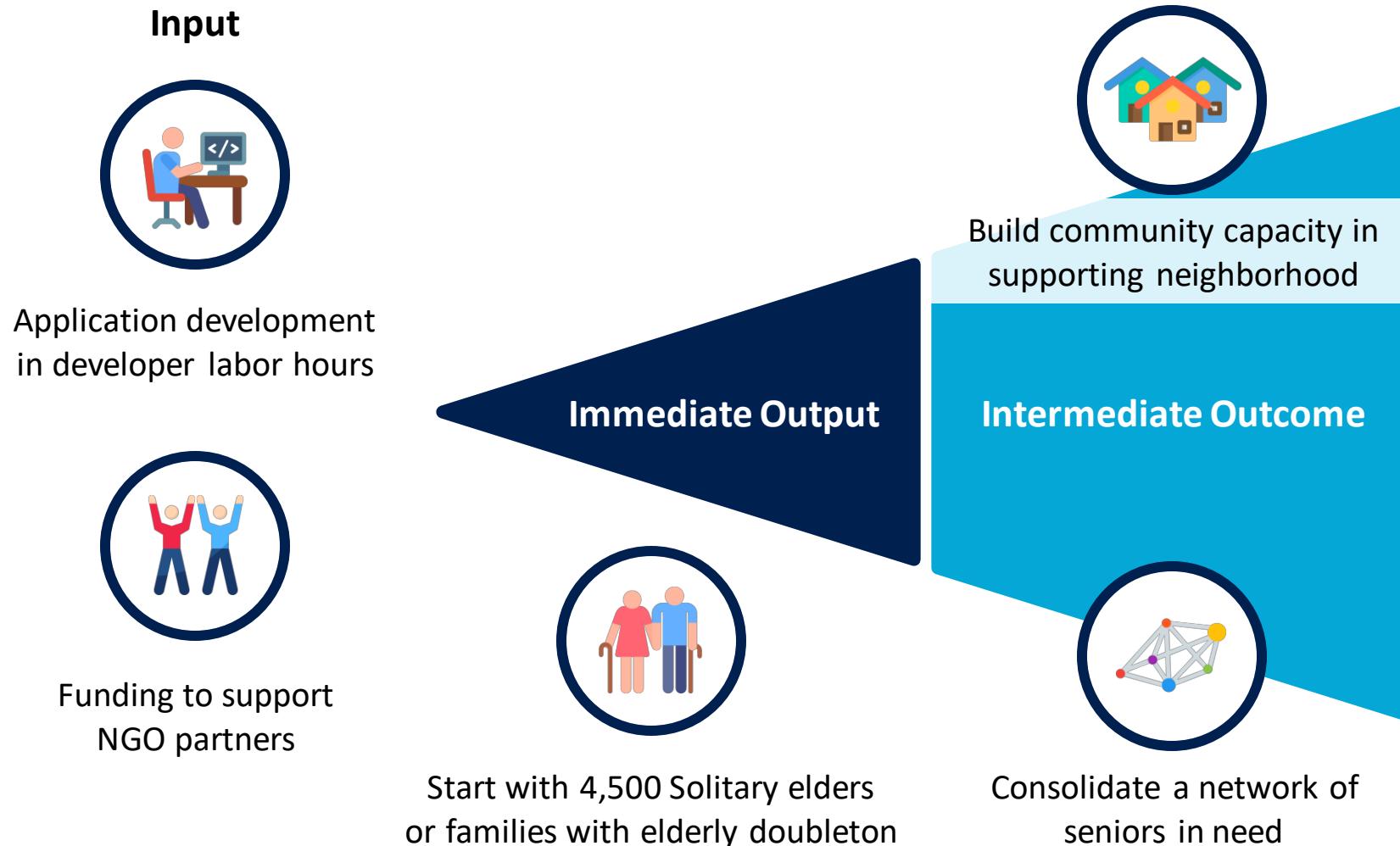


Funding to support
NGO partners

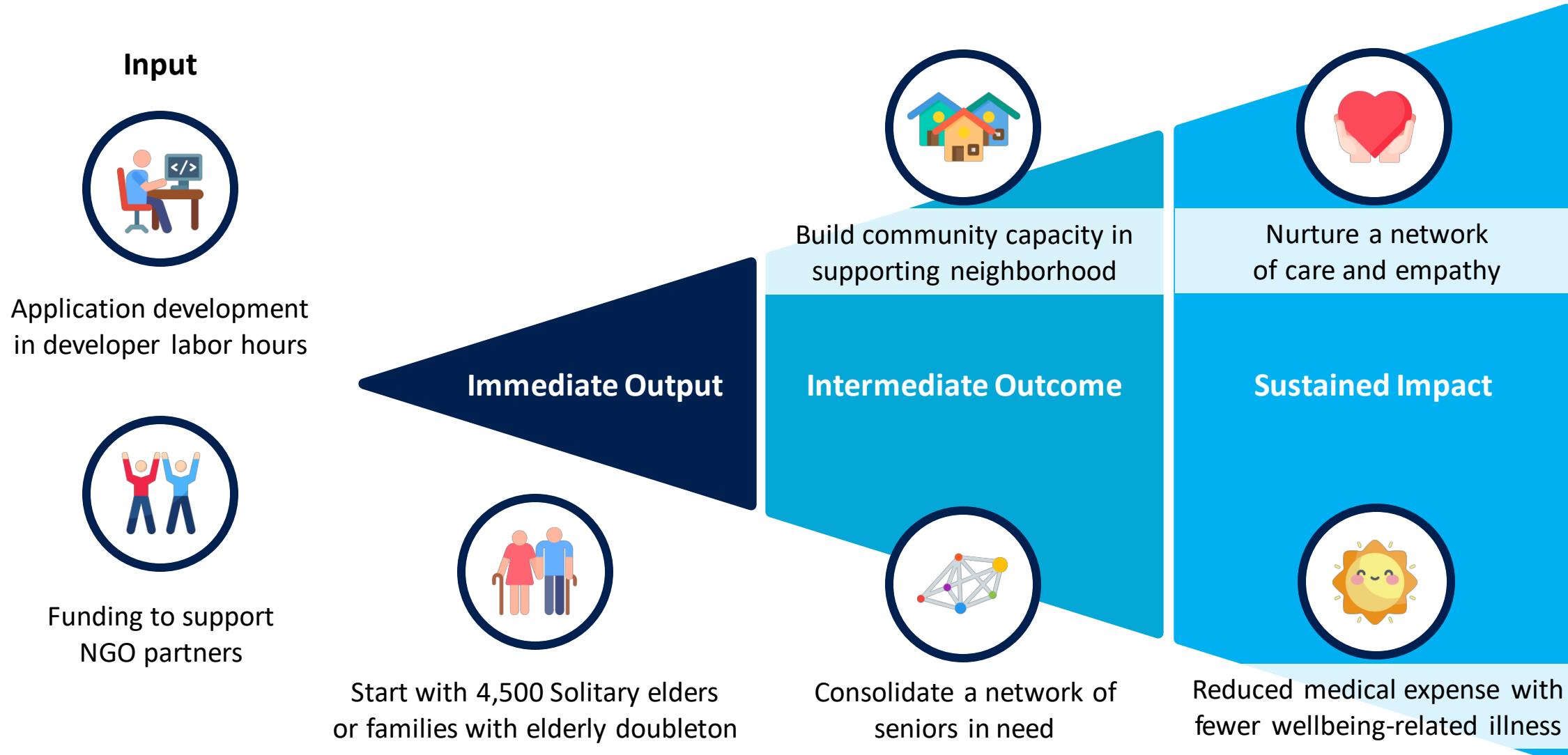
Instead of the dollar impact, Silver Immunity brings people impact



Instead of the dollar impact, Silver Immunity brings people impact



Instead of the dollar impact, Silver Immunity brings people impact





SITUATION

Vulnerability
to the Pandemic

Social distancing
measures

Unfamiliar with new
technologies

KEY QUESTION

How can we address the daily needs of the elderly by
overcoming the lockdown and low technology readiness?

SOLUTION



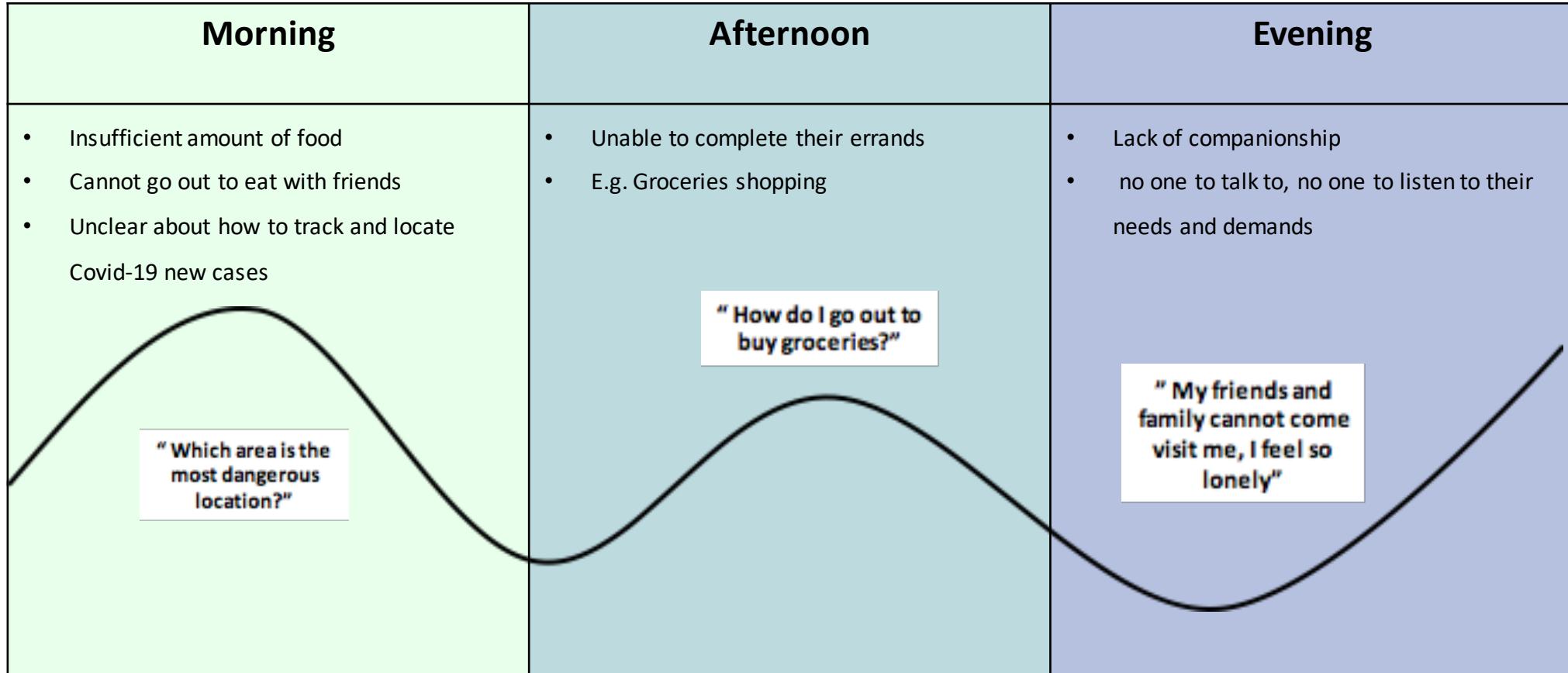
IMPACT

Assist 45,000+ (10%) families of solitary elder or elderly doubleton

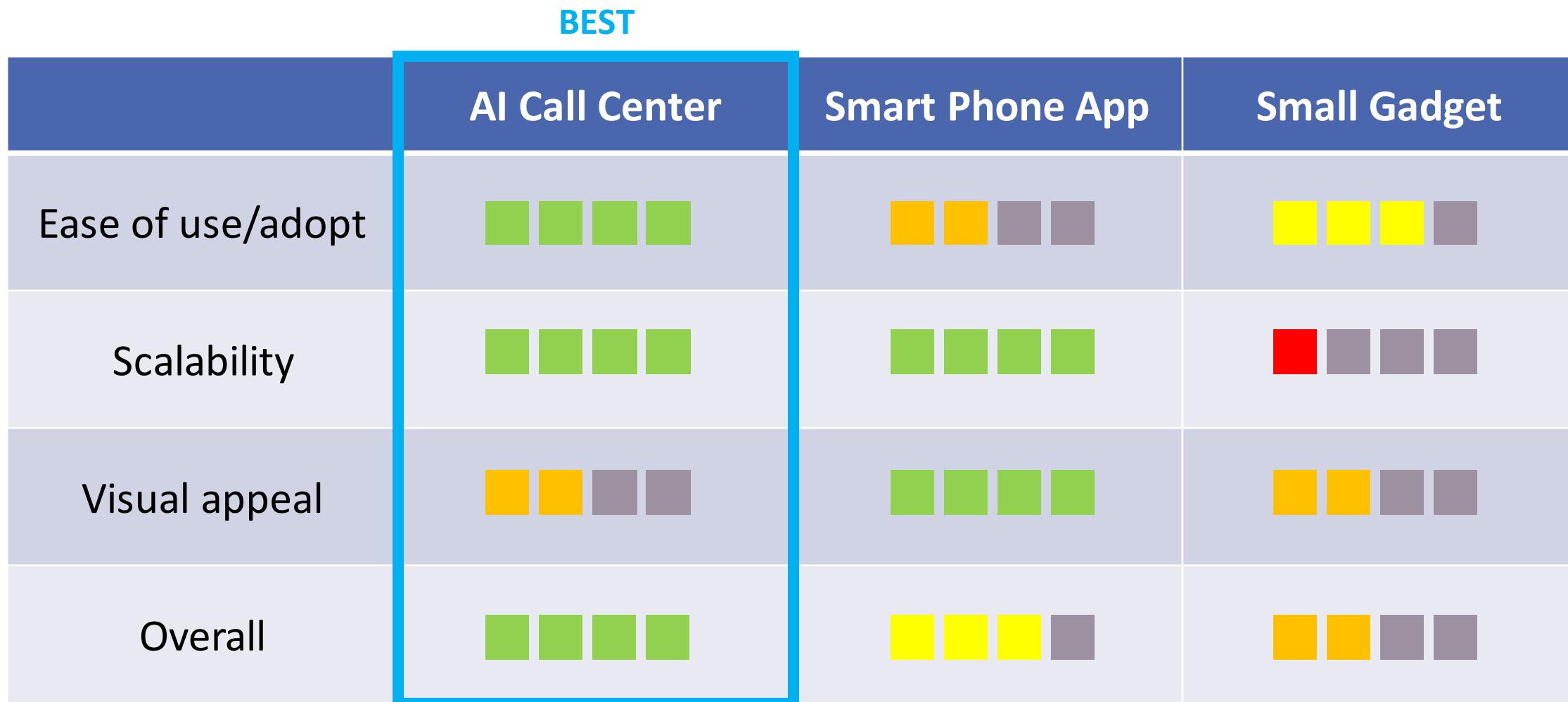
APPENDIX: Elderly user journey

Expectations:

- Tackle different issues throughout the day
- One-stop
- Hassle free



APPENDIX: Choice of elderly-facing medium



Assuming **1** volunteers can serve **5-6** nearby seniors

We will need **900** committed volunteers to support the early-stage operations

Sufficient considering Hong Kong total volunteer population is **1.3m**

Finding enough volunteers to support the community model in the LONG run

Campaign to recruit volunteers

Committed volunteers come and go, campaign with leveraged NGO connections

refill the number of volunteers.

Get manual help to order online

Decrease the number of volunteers required with:

1. Volunteers manually order for them via online platforms
2. The system develops the capability to auto-order from e-groceries platofrm

Input



Application development
in developer labor hours

Typical time to develop the AI

5-6 months

Team size

4 experts

Salary per month per person

\$60,000

Est. Development Cost

= \$1.32 million



Funding to support
NGO partners

Extra full-time support

4 social workers

Salary per month per person

\$25,000

Monthly Support Cost

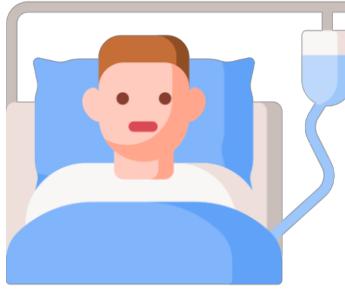
\$100,000

**The cost would decrease as the system runs smoother and fewer errors*

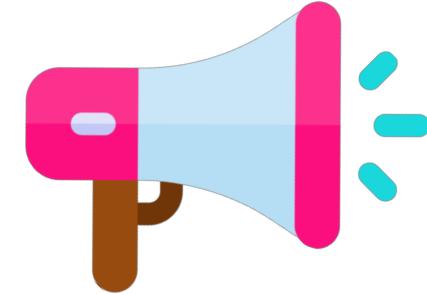
APPENDIX: The impact is going to last even after the pandemic



Apply company-wide research data
to extend diagnostic functions



Expand to the disabled,
or patients with chronic illnesses



Becomes the go-to elderly channel
to for future impact projects