

Design X Social Challenge 2022

# Presentation Template

This deck is a workbook, designed to help you complete the project successfully. Please follow the instructions provided in each slide.

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## IMPORTANT INSTRUCTIONS:

- If you have a Google account, sign in and **make a copy of this deck** before you add your content.
  - If you don't have a Google account, go to File > Download this file as Microsoft Powerpoint and use.
  - You will be provided with a clear instructions deck for more details on how to submit, etc.,
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# <Maks-it: Health Kit Regeneration>

Theme: **Design for Crisis**  
Rebuild and heal the world with design

<2022.8 China>

# Team



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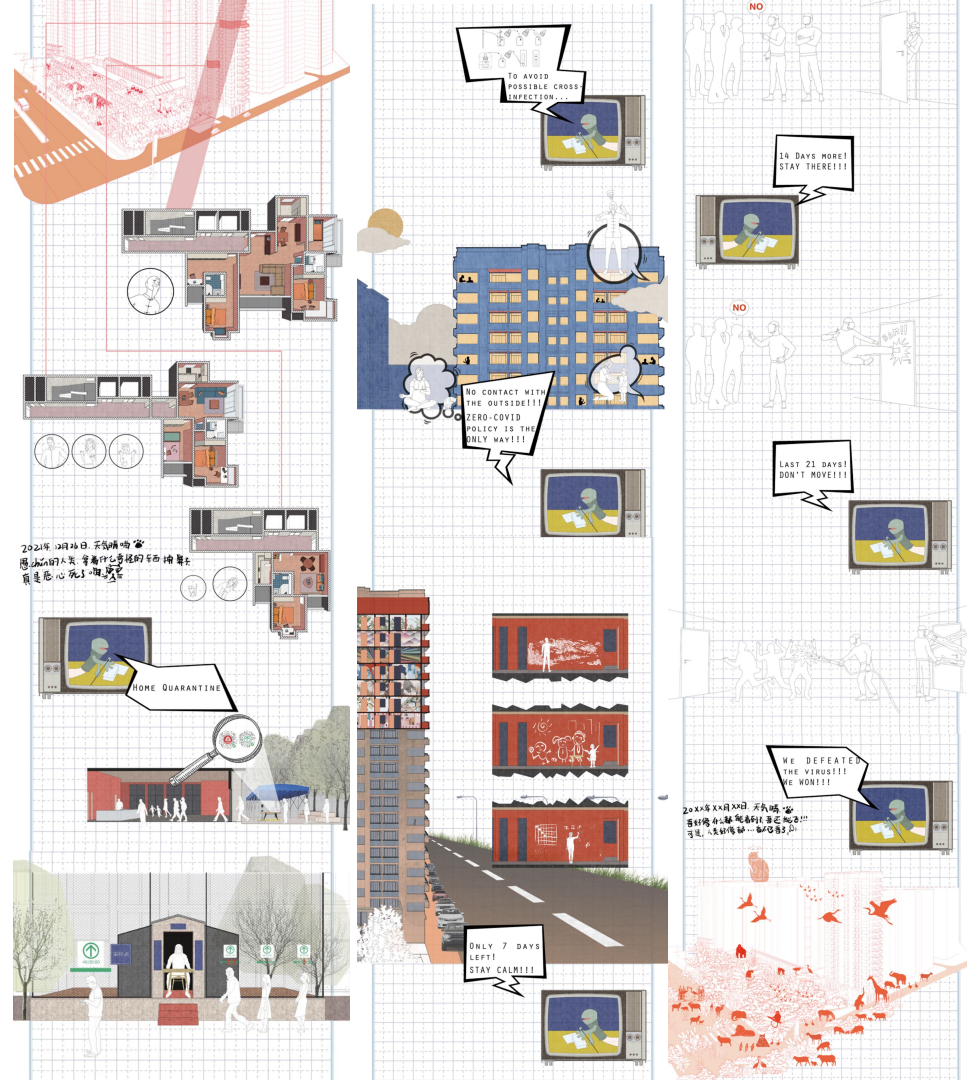
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# Problem Identified

## PROBLEM DESCRIPTION

**Background:** Facing the COVID-19 pandemic crisis, the government of China has taken the "Dynamic Zero COVID-19 Strategy" to ensure that the domestic pandemic situation remains stable. Chinese citizens are asked to use a phone app named "Health Kit", which serves as a reference for assessing their fitness for going back to work, entering public places, and other situations concerning COVID-19 prevention and control. A pop-up notification may appear on one's Health Kit due to becoming a confirmed case, being in the same area with the confirmed case, or not taking nucleic acid testing on time. Once the pop-up notification of the Health Kit appears, people will be restricted to work, travel, or even to seek medical treatment. Furthermore, vulnerable groups will face great inconvenience using the app. While, the Health Kit played a positive role in epidemic prevention work, inconvenience and mistake caused by it may lead to property loss or even danger to life.

**Problem:** How can the government grasp the health status of citizens in a timely manner and carry out precise control to reduce the infection of unrelated people or affect their lives, especially for the elderly?





# Urgency/Importance

## WHY IS IT AN URGENT PROBLEM?

**Vulnerable groups:** For those who have difficulties using mobile phones, such as the elderly, children or disabled, they will not be able to use the Health Kit normally and will have to stay home if not accompanied. Furthermore, some people's health condition deteriorated because they had to wait for the results of the nucleic acid test and could not receive timely treatment. For vulnerable groups, the Health Kit and the prevention policy have caused great inconvenience to their lives, and even dangers to their life safety.

**Software Defects:** Program changes and failures will also affect the normal activities of people. For example, Beijing Health Kit has affected normal activities of many people due to change in the calculation method of nucleic acid result.



# Target User Persona

## PROFILE & DEMOGRAPHICS

Job Title: Retired

Gender: Male/Female

Family and Social Setting: Widowed elderly without children

Income: Retired Pension (4000¥ per month)

Education: Junior high school

## GOALS & VALUES

Goals: Able to travel normally and live without the help of others.

Values: Take care of themselves and live peacefully in their elderly life

Motivations: Live a healthy, favorable and stable life

## FEELINGS

Worries: Don't know how to use a mobile phone and the Health Kit; It is very inconvenient to do nucleic acid tests; Can only ask neighbors for help in daily activities.

Influences: Can't buy food and necessities and can only move around in the community.

## PAIN POINTS

Fears: Not able to receive treatment in time

Frustrations: Always inconvenient to go out; Have to ask for help from others

Challenges: How to control their health conditions without using mobile phone

# Target User Persona

## PROFILE & DEMOGRAPHICS

Job Title: Merchant

Gender: Male/Female

Family and Social Setting: Middle Aged with a partner, children and parents

Income: Business income (Unstable, ~7000¥ per month)

Education: High school

## GOALS & VALUES

Goals: Business is back to normal and no longer being shut down for long periods of time.

Values: A steady increase in income to make family members happy

Motivations: Take care of family and maintain their life

## FEELINGS

Worries: Their stores was closed due to the epidemic control and the business was affected.

Worries that it would happen again.

Influences: Income suffers, debt increases, and even bankruptcy

## PAIN POINTS

Fears: The next epidemic wave coming and the business completely broken

Frustrations: Pandemic control from time to time causing poor business and low income

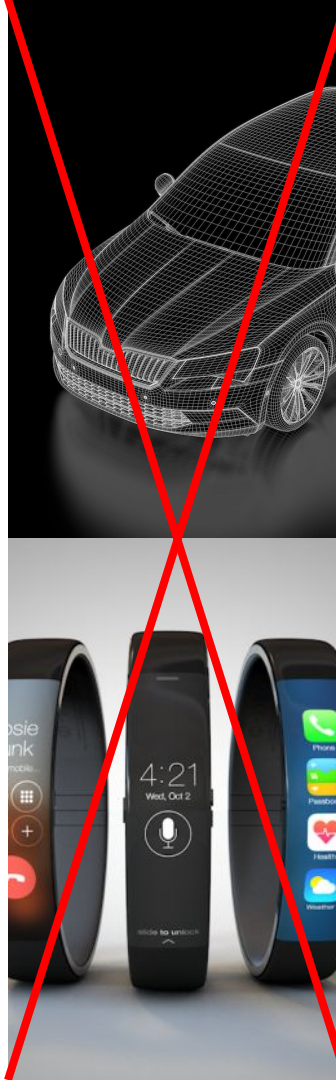
Challenges: How to reduce the impact of the epidemic on their normal work and life

# Explorations

## SOLUTIONS & IDEAS

During the design process, we also considered other ways to solve this problem. We have tried to use a new type of smart car to solve the problems of quarantine, nucleic acid test and travelling; or use a smart bracelet to solve the problems of travelling, Health Kit inspection and data synchronization. But these methods are often very complicated and expensive, not only impossible to achieve in a short time, but also not friendly to the elderly.

Eventually we settled on a way to use smart masks to solve this problem. Masks are a necessity that everyone needs every day during the pandemic. Designing a new type of smart mask will not add more obstacles to people's daily life. It can also remind them to wear masks and help control the pandemic. Furthermore, the world is consuming a lot of masks every day, causing waste and pollution. Designing a clean and reusable smart mask will provide a more environmentally friendly and sustainable solution. Finally we designed to this new type of smart mask which combines the fiction of mask and Health Kit——“Mask-it”.



mask-it

a new type of smart mask  
designed for elderly people



# Final Solution & Innovation

## HOW DOES YOUR SOLUTION ADDRESS THE PROBLEM IDENTIFIED?

### HOW IS IT INNOVATIVE?

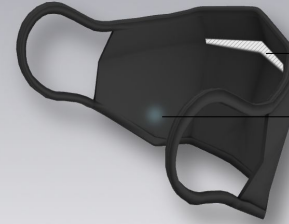
To solve the problem, we designed a new type of smart mask called "Mask-it", which is a new type of smart mask designed for the elderly. Except for the function of a mask—filter air and virus, Mask-it also provides an easy-to-use alternative to the Health Kit, making the elderly live with more ease and confidence.

Mask-it mainly contains three features: a small display will demonstrate the wearer's nucleic acid test results and time, which will be easy for aged people to show them and enter public places; secondly, a small NFC module will record other Mask-it wearer's ID in close range, offering an accurate way to trace the close contacts and take measures; thirdly, a small communication module can transport data in real time, and inform the wearer whether they need treatment or quarantine through the display.



power and signal indicator

display model demonstrating acid test result and time



reusable mask with replaceable filter

rechargeable battery



NFC model recording nearby people's ID

communication model sending messages from and to the control department

mask-it

a new type of smart mask designed for elderly people

# Final Solution & Innovation

There will be three different display modes on the mask depending on the situation.

If the user is not infected and has no contact with other infected people, the display model will show a green light "阴", which means negative result and the time since the used last took acid test.

If the user is not infected yet the NFC model has recorded that the user has contact with other infected people, the display model will show a orange light "密" which means contact with infected people and the user will need to take self quarantine.

If the user is infected, the display model will show a red light "阳" which means positive result and the user will have to receive treatment in hospital. The communication module will upload the user's ID and other people's ID the NFC module has recorded. Measures will be taken in a timely manner and other contacts will get notified through their Mask-it.



the display model on mask-it will show the result and time of the user's acid test

If the user is not infected and has no contact with other infected people, the display model will show "阴" which means negative result.



If the user is not infected yet has contact with other infected people, the display model will show "密" which means contact with infected people and the user will need to take self quarantine.



The green light here indicates normal battery level and signal, which is unrelated to the user's health.

If the user is infected, the display model will show "阳" which means positive result and the user will have to receive treatment in hospital.

mask-it

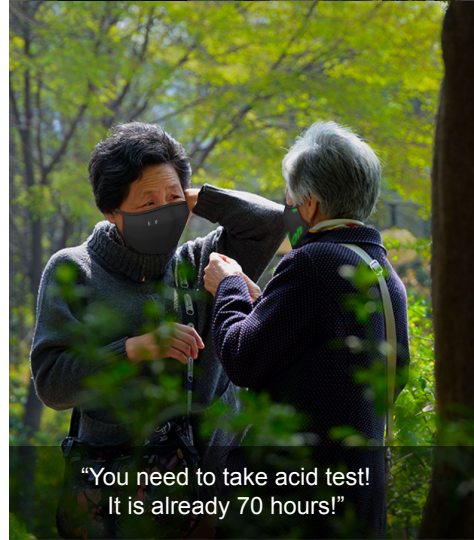
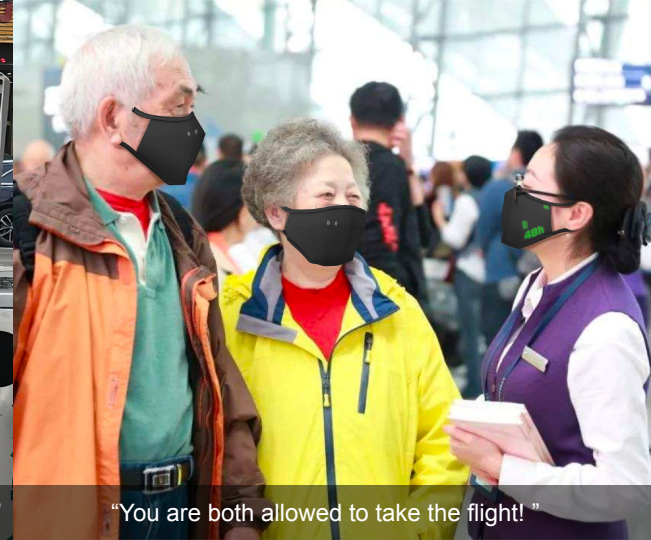
a new type of smart mask  
designed for elderly people

# User Experience

## HOW DOES THE UX OF YOUR SOLUTION LOOK LIKE?

When the elderly need to enter a public place, they only need to simply click on the indicator light. Their health condition will be showed on the display model on the mask and if they took the acid test on time, it will be easy for them to enter the public place. Their activity and life will be greatly facilitated.

If they are infected, the hospital will know and treat them as soon as possible, and they will not be able to enter any public places to avoid infecting more people. If they have been in contact with an infected person, the NFC module in the mask will record this information for the first time and display it on the display module. They will be unable to go to any public places and will have to home quarantine. The community will be the first to know the message and provide them with adequate supplies.



# Design Process

## DESIGN PROCESS FOLLOWED

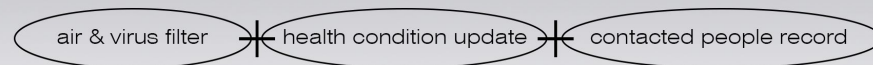
Firstly, we collected a large amount of news information and tried to summarize the commonalities among them, hoping to find the problems that were ignored under China's pandemic control strategies. During brainstorming, we found that under the Health Kit policy, the normal needs of the elderly in the pandemic cannot be met. Next, we surveyed some aged people in urban and rural areas, and found that most of them are indeed troubled by complicated mobile phone operations and cumbersome inspection procedures.

So we decided to realize the function of the Health Kit in a very convenient way for the elderly. Finally we determined the mask as a carrier. As a necessity for going out every day, masks are undoubtedly the easiest solution. After several rounds of revisions and discussions with our mentor, we finally settled on the current design—a easy, convenient and sustainable solution for the problem we identified.

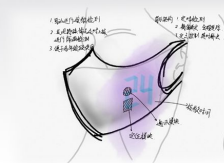
Problem Seeking:



Core Features Extraction



Prototype Generation



Design Determined



mask-it

a new type of smart mask designed for elderly people



# Impact on the Society

## IMPACT OF YOUR SOLUTION

When the elderly wear masks, they no longer have to carry their mobile phones when they go out, and they will not be troubled by complicated mobile phone operations. When they need to enter a public place, they only need to simply click on the indicator light on the mask to show their health condition and will be able to enter the public place easily. Their activity and life will be greatly facilitated.

When everyone uses Mask-it, the situation of the COVID-19 pandemic will be controlled in time. The information of confirmed cases and close contacts will be collected quickly and measures will be taken in a timely manner. The condition of the pandemic in the world will be greatly improved, and people's health and life will be better.





# Sustainability

## HOW IS YOUR SOLUTION SUSTAINABLE?

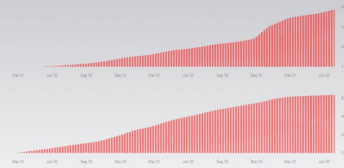
Mask-it is very simple and lightweight solution. We have been working hard to make it an eco-friendly and sustainable solution.

The COVID-19 pandemic is still ongoing and there will be still massive demand for masks in the future. It will not only give Mask-it a long-time market demand but also asks it to be eco-friendly and sustainable.

To deal with the challenge, we believe that Mask-it should a new type of reusable respirator, which will replace the currently widely used disposable masks and reduce the material wastage and waste generation. Renewable plastics and fibers will be used in it to provide a more eco-friendly solution and resolve the crisis in a more sustainable way.



The reusable Mask-it will replace the widely used disposable masks, reducing material wastage and waste generation



The COVID-19 pandemic is still very serious over the world and there will be a demand for masks for a long time in the future.



Renewable plastics and fibers will be used in masks to provide eco-friendly solutions

mask-it

a new type of smart mask designed for elderly people

# Practicality & Business Viability

## HOW CAN YOUR SOLUTION BE IMPLEMENTED AND SUCCESSFUL?

All technics used in Mask-it is proved to be mature and widely-used. The assembly line will be able to assemble them very easily and efficiently to produce a large number of products.

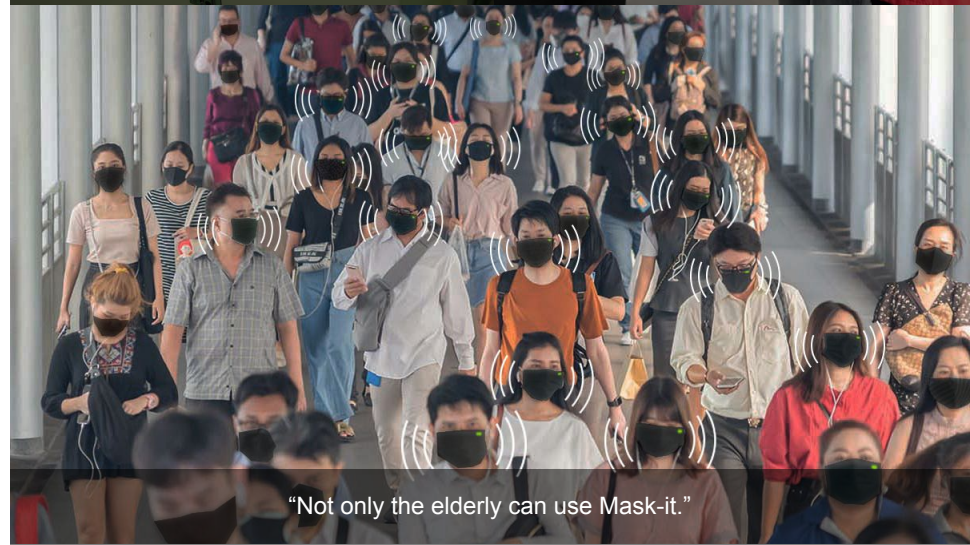
In order to control the pandemic and help the elderly solve their problems, the government or charities will invest in production and distribute it to every elderly person through the community.

Not only will Mask-it benefit the aged people with their inconvenience, but also help to control the pandemic and save medical resources in the whole world. Everyone can buy or use Mask-it to control and pandemic more effectively.



Mass produced Mask-it

"Please take Mask-it when you go out!"



"Not only the elderly can use Mask-it."

# Thank you!

We would like to thank Mr. Paramijt Jolly, our mentor. During the process, he has been eagerly communicating with us and giving us instructions. We have received great encouragement and help from his words. Thank you very much for your dedication and support in the process of fighting the pandemic crisis with us!

The COVID-19 pandemic is a huge challenge faced by all mankind. After three years of fighting, some countries and places have achieved impressive results, while some countries and places are still in a terrible condition.

In this design, we mainly focused on the vulnerable groups' situation in the pandemic: the elderly, children and disabled people. They are the ones who have been hurt and threatened the most in this crisis. By improving their living conditions, we hope to provide an easy and sustainable solution to the entire crisis.

The pandemic has not been controlled, much less to be forgotten. We believe that with unremitting efforts in the future, mankind will eventually overcome the pandemic and rebuild a peaceful and beautiful world.

Mu, Yuchen & Nicholas