

DESIGN X SOCIAL

Global Innovation Challenge 2021



रहाया

Are we ready for the next wave?
Are our current healthcare and wellness measures sustainable?



HEY THERE! **TEAM DEZAIN** HERE.

BUCKLE UP AS YOU'RE ABOUT TO
WITNESS OUR PROJECT FOR THE
**LUMO DESIGN X SOCIAL
CHALLENGE'21.**

Let's Start

We need to gather some simple info
from the company before we can get the
information and calculate

Company Name

Company Address

Company Phone

INDIAN COVID SCENARIO

IT'S REALLY **UPSETTING** TO SEE THE NEWS THESE DAYS AS IT'S ALL ABOUT COVID AND HOW IT'S AFFECTING THE PEOPLE AROUND US, ESPECIALLY THE **SENIOR CITIZENS**.



The COVID-19 pandemic is impacting the global population in drastic ways. In many countries, older people are facing the most threats and challenges at this time. **Although all age groups are at risk of contracting COVID-19, older people face significant risk of developing severe illness if they contract the disease due to physiological changes that come with ageing and potential underlying health conditions.**

using a semi-structured interview guide. Thematic analysis was conducted to ascertain our participants' perceptions. Caregiver's concerns were organized into six main themes, including social isolation, decline in mental health, decline in physical and cognitive functioning, keeping their family members safe from COVID-19, lack of caregiving support, and caregiving stress. The themes

Covid-19: In urban India, the elderly are grappling with hunger and fears of dying alone

Helplines for the elderly have seen a rise in the number of distress calls since the lockdown.

Technology and internet connectivity play an important role in navigating social distancing restrictions and maintaining access to essential care, services, and important information. In India, only 7 per cent of older people have smartphones. The literacy rate among this segment is also low, further limiting access to technology and important information.

NRIs worried about parents in India after 'exaggerated' coverage of Covid-19 by international media

NRIs living in countries like the USA, Canada, Dubai, Spain, Japan, Korea, the UK, Australia, France, and Russia say reporting of the situation in India is very frightening and are calling their parents out of concern every day.

How eldercare organisations are working as extended family to help old parents amid pandemic

With a surge in the number of Covid cases in the country, these elder care organisations have had to augment their operations to meet the needs of as many as possible

Reports have indicated that the lack of access to healthcare services could aggravate physical disabilities, hinder the effective management of communicable diseases and lead to mental ill-health problems amongst the elderly. Outpatient treatment of nearly all major non-communicable diseases has been severely affected due to COVID-related restrictions. Older people seem to be missing out on treatment for illnesses. Medical check-ups have become infrequent. All this is likely to show up in the mortality and morbidity rates among the elderly.

15 million

SENIOR CITIZENS LIVE
ALONE IN INDIA

51.2%

DEATHS DUE TO COVID-19
HAVE BEEN AMONG THE
SENIOR CITIZENS

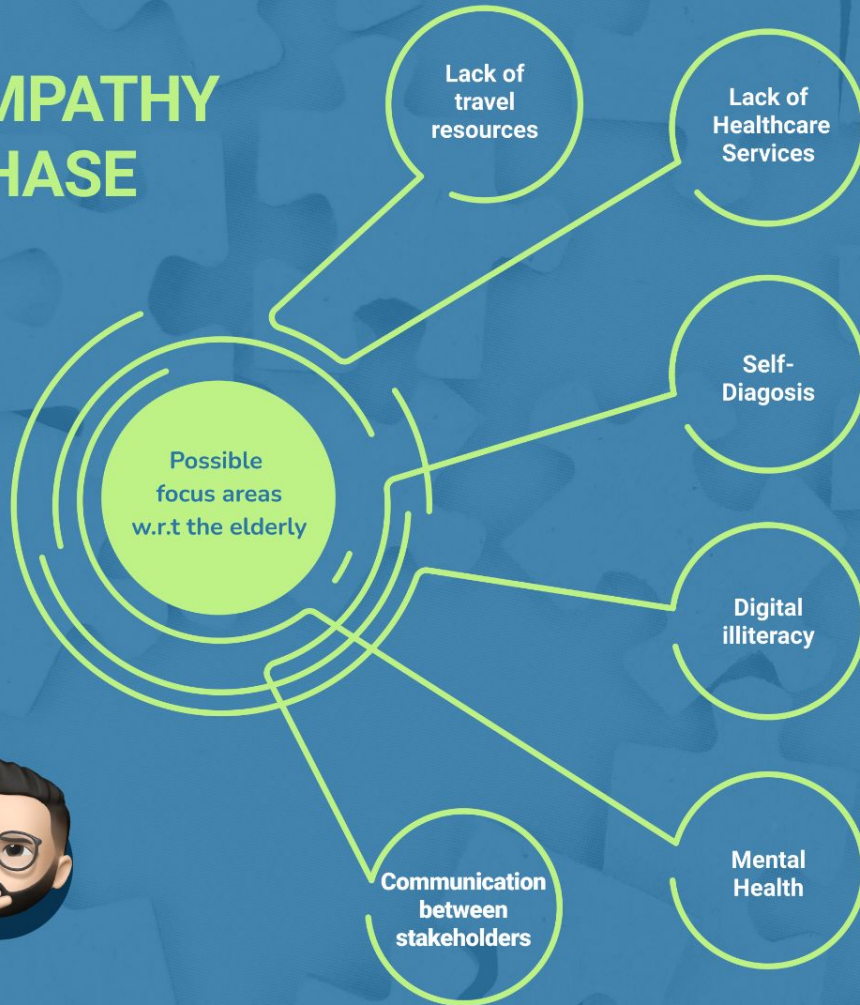
43.1%

DEATHS DUE TO THE
LACK OF RAPID
EMERGENCY RESPONSE

OMG!!! DID YOU KNOW??



EMPATHY PHASE



- **Ambulance response time** is extremely long due to the reduced count (the Indian average is about 18 minutes)
- Patients live in **rural or distant** locations
- **Poor directions** and trouble locating
- Equipment, resources, or doctors are **scarce**
- Forget to take their **medications**
- **Misinterpretation** of sickness & symptoms as normal health issue
- Lack of body health and medical **awareness**
- Believing in **home remedies over modern healthcare**
- In India, **94%** of senior responders were **technologically uneducated**
- **7%** of India's elderly **smartphone users** were unable to perform simple activities such as calling on their own
- **All Covid relief aid was made digital**, which severely reduced the elderly's ability to access the required services
- In India, **17.13 million** of the elderly suffer from **mental health issues**
- As a result of the **isolation, exclusion, and marginalisation** they have been endured

INTERVIEWS WITH THE ELDERLY

To understand and accumulate pain points

"I FACED A LOT OF TROUBLE UNDERSTANDING
HOW TO CONSULT WITH A DOCTOR DURING
COVID ON AN APP AS I ONLY KNOW HOW TO USE
MY MOBILE TO CALL MY DAUGHTER."

"MY SON CALLS ME EVERY FEW HOURS TO CHECK
ON MY HEALTH EVENTHOUGH I'M FINE. IT FRUSTRATES
ME AS **I'M NOT A CHILD! I DON'T NEED THEM
TO CHECK UP ON MY HEALTH SO
FREQUENTLY!!!** BECAUSE OF THIS WE HARDLY
GET TO TALK ABOUT ANYTHING ELSE."



INTERVIEW INSIGHTS

To understand and accumulate pain points

Pain Points of the
elderly (living
alone) during the
pandemic

Feeling
depressed or
alone

Trouble reaching
ambulances or hospitals
due to scarcity and
communication errors

Aren't motivated to
do routine checkups
unless necessary

Caregivers are
more concerned
of their health

Exhaustion as a result of the
additional work due
to Covid

Feeling helpless
when technology is
involved

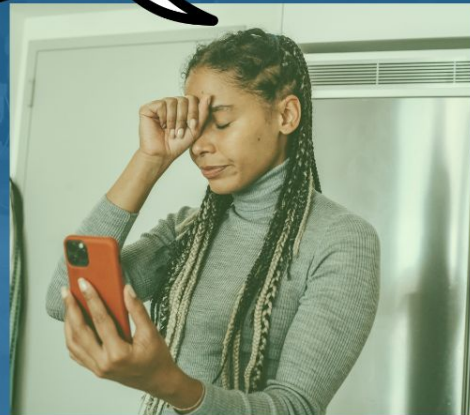
Unawareness of
the situation

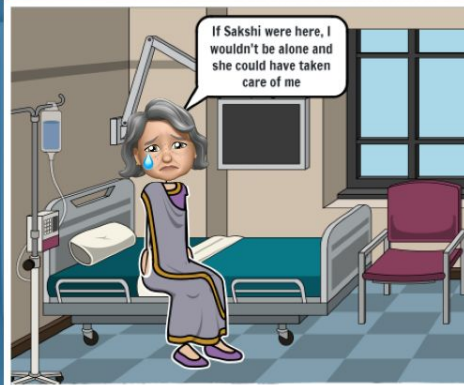
INTERVIEWS WITH THE CAREGIVERS

To understand and accumulate pain points

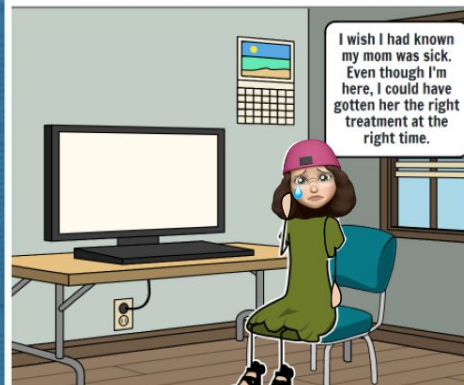
"HOW DO I EXPLAIN TO MY PARENTS THAT I FEEL REASSURED WHEN THEY TALK TO ME ABOUT THEIR HEALTH REGULARLY ESPECIALLY DURING COVID AS I'M AWAY? I ALWAYS **END UP THINKING OF THE WORST** WHEN THEY DON'T PICKUP THEIR PHONES."

"STAYING AWAY FROM MY FAMILY ESPECIALLY DURING COVID HAS GOT ME FEELING EXTREMELY **GUILTY AND ANXIOUS** AS I CAN'T HELP THEM AS MUCH FROM FAR AWAY WITHOUT KNOWING WHAT'S GOING ON."





Mother Admitted in Hospital



Not able to Go to her Mother Due to Travel Restriction

STORYBOARDING

Based on the stories accumulated from our research and interviews.



Shradha Singh

Job title: Home Maker

Gender: Female (she/her)

Age: 60

Family: Widow, Living Alone

Income: <1 LPA

Education: Higher Senior Secondary

Nationality: India

Location: Bangalore

About (Elderly)

Shradha is a 60-year-old single mother of her 28-year-old daughter, Sakshi. She is a widow and lives alone in Bangalore, India, while her daughter studies in the United States. Because she is uneducated, she often finds it difficult to use technology. She was thus, dependent on her daughter and her family doctor to do her routine check-ups but due to the pandemic, she was unable to go out and seek aid and thus tried to make do herself.

Goals

- Lead a peaceful and comfortable life with family
- Help daughter achieve all her dreams

Pain Points

- Digital illiteracy
- Trouble managing household and monitoring health all by themselves during the pandemic
- Loneliness and depression

Ideal Experience

- To be with her daughter
- Being in good physical, mental and emotional condition



Sakshi Singh

Job title: Software Engineer

Gender: Female (she/her)

Age: 28

Family: Single, living abroad

Income: 12.5 LPA

Education: M.Tech

Nationality: India

Location: USA

About (Caregiver)

Sakshi is a Software Engineer who moved to the US for her master's degree. However, owing to the pandemic that caused all international transportation to be shut down, she was unable to see her mom after getting her job. This made her concerned about her mother as she depends on her being her only child. For her own sake and mental comfort, she wants to be able to do more by being able to resolve her problems and keep tabs on her health.

Goals

- To succeed in her job
- To provide for and care for her family

Pain Points

- Resides in a foreign country/ is separated from her family
- Covid's influence on the country
- Concerned about the harm Covid may pose to her family while she is away

Ideal Experience

- To be able to keep tabs on her family's health and safety
- To be able to take the required actions sitting thousands of kilometres apart.

PRIMARY TARGET USER: CAREGIVERS OF THE ELDERLY

*I WISH I COULD FIND AN
EASIER WAY TO TAKE CARE
OF MY MUMMY...*



In India, **5.7% of the elderly live alone**. The caretakers are even more concerned of them contracting the virus, as they wouldn't be able to help them physically.

They found it **difficult** to adjust to the new norms and assist the elderly as most covid relief-aid was provided via **technology usage**.

Due to the absence of physical caregiving help during the pandemic as they are away, they feel more concerned, worried and even guilty of not aiding to their **recipients' physical, emotional, and cognitive performance**.

As a result, caregivers may or may not be **alerted to an emergency situation** in a timely manner, which might quickly become **fatal** for the elderly segment of the population.

How might **distant caregivers** stay on top of the health needs of the **elderly** without imposing on them?

PROBLEM STATEMENT



IDEA BOOK



PRESENTING..

KHAYAAL!

- The Khayaal ring is a smart ring specially designed for **senior citizens** who are living alone/apart from their **caregivers**.
- The ring is a one-stop-shop for all **COVID-related** symptom monitoring, making it a useful and efficient tool for detecting symptoms and doing the needful as soon as they appear.
- It integrates the smart ring with sophisticated **sensor technology** and a **simplified app** to provide personalised information straight from the most reliable source: your body, giving you the chance **to monitor and enhance your health**.

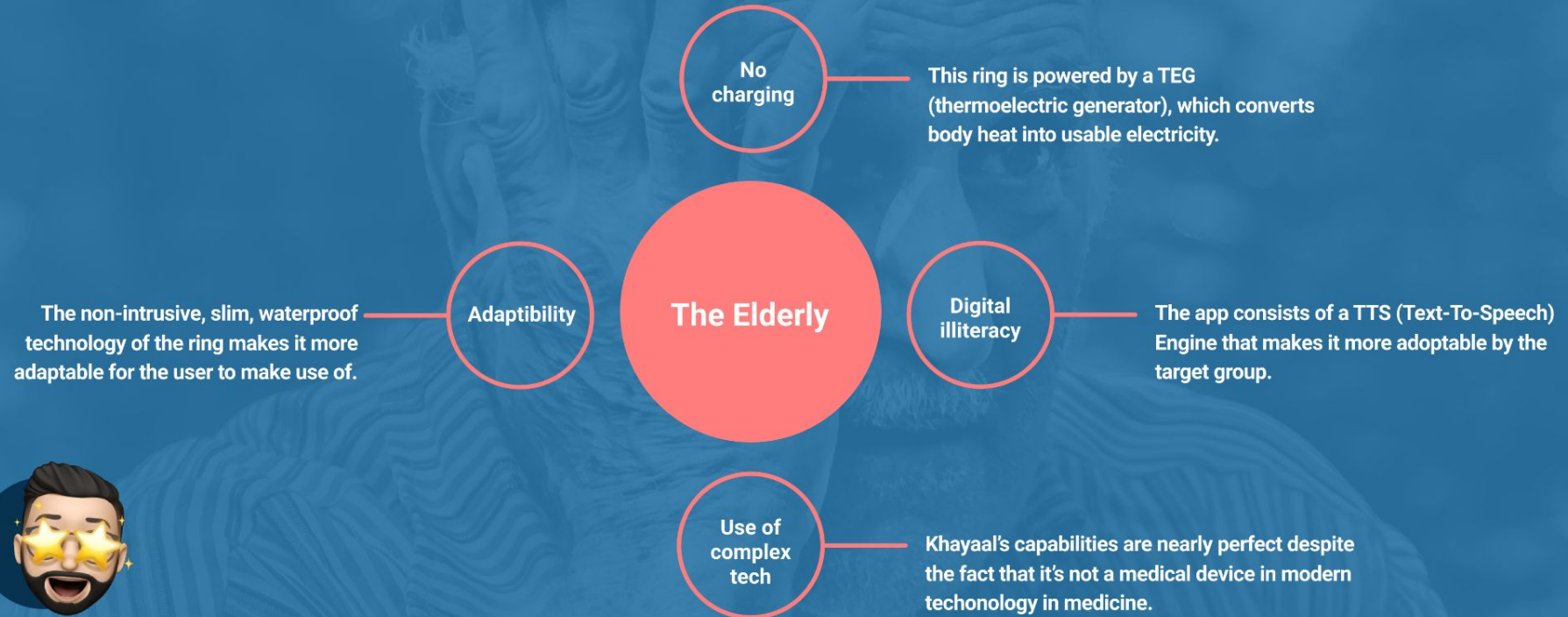


FINALLY LANDED ON SOMETHING
THAT MAY MAKE A DIFFERENCE BY
HELPING THOSE IN NEED!

khayaal



BUT HOW DOES IT ADDRESS PAIN POINTS OF THE USER (THE ELDERLY)?



BUT HOW DOES IT ADDRESS PAIN POINTS OF THE USER (THE CAREGIVER)?

Since Khayaal minimizes the stress factor associated with physical well-being to some level, caregivers can now have meaningful chats with their recipients and focus on their mental health in the little time they have.

Real
conversation

Crisis
management

In the event of an emergency, the caregiver is given some control by receiving real-time updates, SOS panic warnings, and the option of going straight to the hospital without having to wait.

The Caregivers

Guilt of
being away

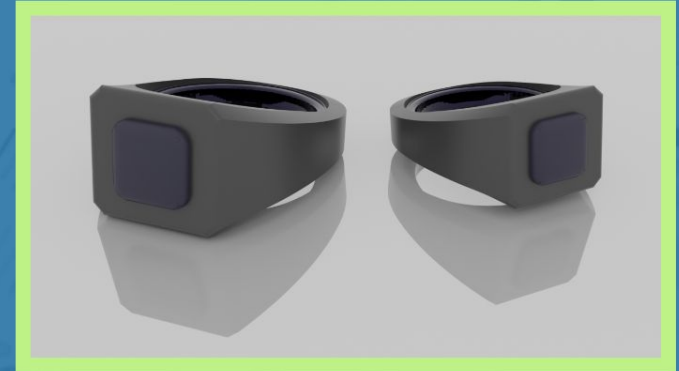
The caregiver is reassured by regular reports on the recipient's health, which makes them feel secure.



WHAT SETS KHAYAAL APART FROM THE REST OF THE PACK?

- Khayaal is distinctive in how it focuses on society's most vulnerable citizens, **the elderly**, who are often overlooked when it comes to technological advancements owing to a **lack of acceptance or a steep learning curve**.
- The ring is powered by our body heat which makes it **easy to adopt, less maintainance** and most importantly, **sustainable**.
- Although the Khayaal app is primarily designed for use by caregivers, it may also be used by the elderly as it operates on a **TTS engine** through a customised virtual assistant that uses the **user's language** as a the base language.

NOW WE CAN ENSURE
HELP TO EVERY USER
SEGMENT IN A
PERSONALISED MANNER!



HOW DOES THIS IMPACT OUR USERS?

"NOW I CAN **TALK TO MY DAUGHTER FOR LONG** AS I DONT HAVE TO UPDATE HER OF MY PHYSICAL HEALTH EVERY SINGLE TIME. I WILL ALSO NOT HAVE TO WORRY ABOUT **CHECKING MY STATS** OR **CHARGING** THE RING. IT LOOKS LIKE A **WIN-WIN SITUATION!**"

"I WONT FEEL AS **GUILTY** AS I DID BEFORE OF **NOT KNOWING OR KNOWING TOO LATE**. THIS GIVES SOME SENSE OF **POWER** AND **CONTROL** AND MAKES ME FEEL **REASSURED** EVEN IN THESE TIMES."

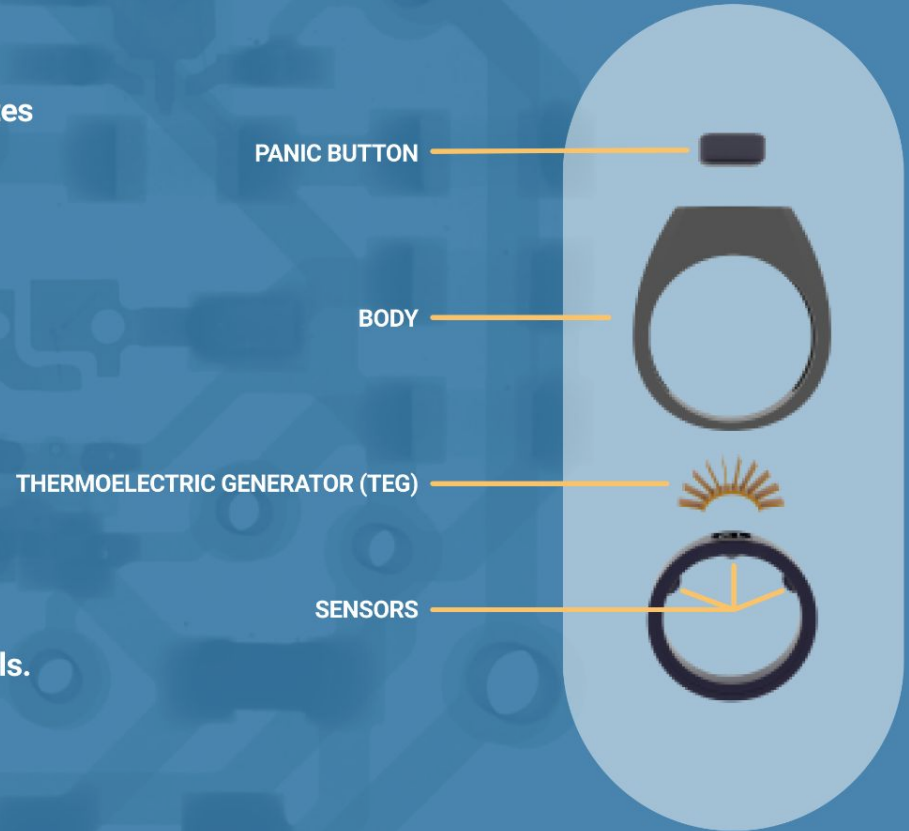


IMPACT ON THE SOCIETY



FEATURES

- Khayaal prioritises the use of appropriate sensors, such as infrared light **photoplethysmography (PPG)**, which penetrates deeper than most others, to guarantee that it provides the most relevant data to its users in a timely manner. This sensor detects the following characteristics, which are the most important vital markers of health, especially during **COVID**:
 - **Body Temperature;**
 - **Heart rate variability;**
 - **SpO2;**
 - **Sleep monitoring technology.**
- **Panic/SOS:** It helps in assisting the elderly in case of an emergency by directly connecting them to the right channels.



HOW DO THESE FEATURES HELP?

Primary users of the ring: **Elderly**

- The ring **tracks** your essential vitals without any hassles or any added work.
- **Native language adaptability + TTS** (text-to-speech) **engine** on the app for easy access by the elderly.
- **No external charging!** The ring never has to come off the finger as it charges using body heat.
- Provides **tips** to improve health on the app.
- **Panic button** could be used in case of emergencies in order to avoid any further delay in receiving help.

Primary users of the app: **Caregivers**

- **Hassle free, real-time status of medical stats** of the aged
- Gives **control** and **reassurance** over the happenings when the recipient is in **crisis/emergency**.
- Provides **tips** to improve health on the app that could be shared with the recipient if they're unable to do so themselves using the app.

WHY A RING?

Khayaal offers reliability, above all.

- The doctor examines your pulse using the finger rather than the wrist because the finger is the most **accurate** and **reliable** source of medically important data.
- They are **non-intrusive** and don't need any particular handling during usage.
- They are easily **adaptable** as majority of the target demographic wears rings of some sort: wedding bands, good luck/religious rings, and so on.
- By conducting more research, experimentation, and revisions on the gadget and its capabilities, we were able to emphasise on **alleviating the pain points** highlighted during user interviews by using a ring.



THE RING OFFERS ME COMFORT
AND SECURITY! THAT IS ALL I NEED
TO KEEP GOING ON!

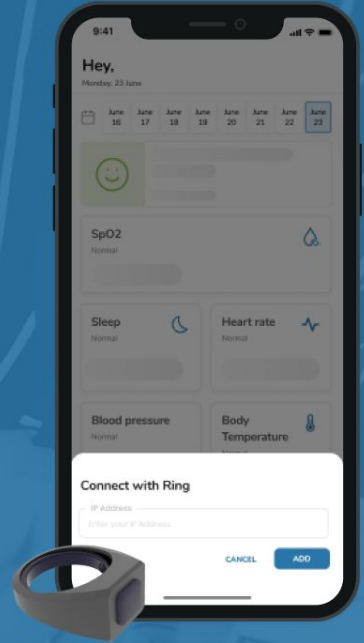
HOW DOES IT WORK?

The ring once connected to the internet updates the elderly user's health data directly to the cloud which can be accessible via the app. The caregiver would be the primary user for the app as they can utilise it to keep track of their recipient's health.

*NOW WE CAN ENSURE
HELP TO EVERY USER
SEGMENT IN A
PERSONALISED MANNER!*

Follow the following steps:

1. Buy the **Khayaal** ring.
2. Download the Khayaal ring app on the app user's phone (caregiver and/or recipient).
3. Set up an account for the elderly user on the app.
4. Pair the ring by entering the **unique static IP address** of the ring.
5. Voila! We're all set to go!



OUR DESIGN PROCESS

Discover

- DESIGN STRATEGY
- STAKEHOLDER INTERVIEWS
- SECONDARY RESEARCH
- COMPETITOR ANALYSIS

Describe

- USER RESEARCH
- USER PERSONAS
- DATA GATHERING
- EMPATHY MAPPING

Ideate

- BRAIN STORMING
- STORYBOARDING
- USER FLOWS
- TASK FLOW

Design

- WIRE-FRAMING
- PROTOTYPE
- DOCUMENTATION
- VIDEO COMPILATION

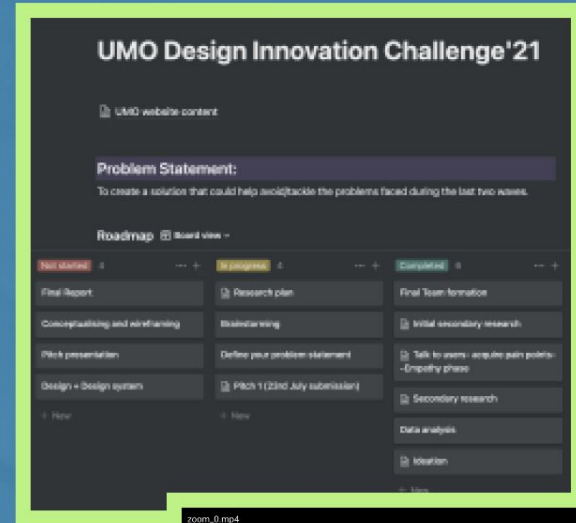


BY FOLLOWING THIS PROCESS, WE WERE ABLE TO
CREATE THE BEST POSSIBLE PRODUCT FOR OUR
TARGET GROUP FROM OUR END!

DISCOVER

- **Design strategy:**
To stay on track throughout the challenge's span.
- **Stakeholder Interviews:**
To have a better understanding of the pandemic's impact.
- **Secondary research:**
To validate all information through facts from studies, research articles, and the news.
- **Competitor analysis:**
To assess the market for products/services.

WE SPENT ABOUT A WEEK ON THIS STAGE BECAUSE IT WAS THE MOST ESSENTIAL PART OF THE PROCESS FOR US TO COME UP WITH A VIABLE SOLUTION.



DESCRIBE

- **User research:**

Focused study on our target group i.e, the elderly.

- **User personas:**

To portray a sort of consumer who would utilise the product so that we could empathise with them.

- **Data gathering:**

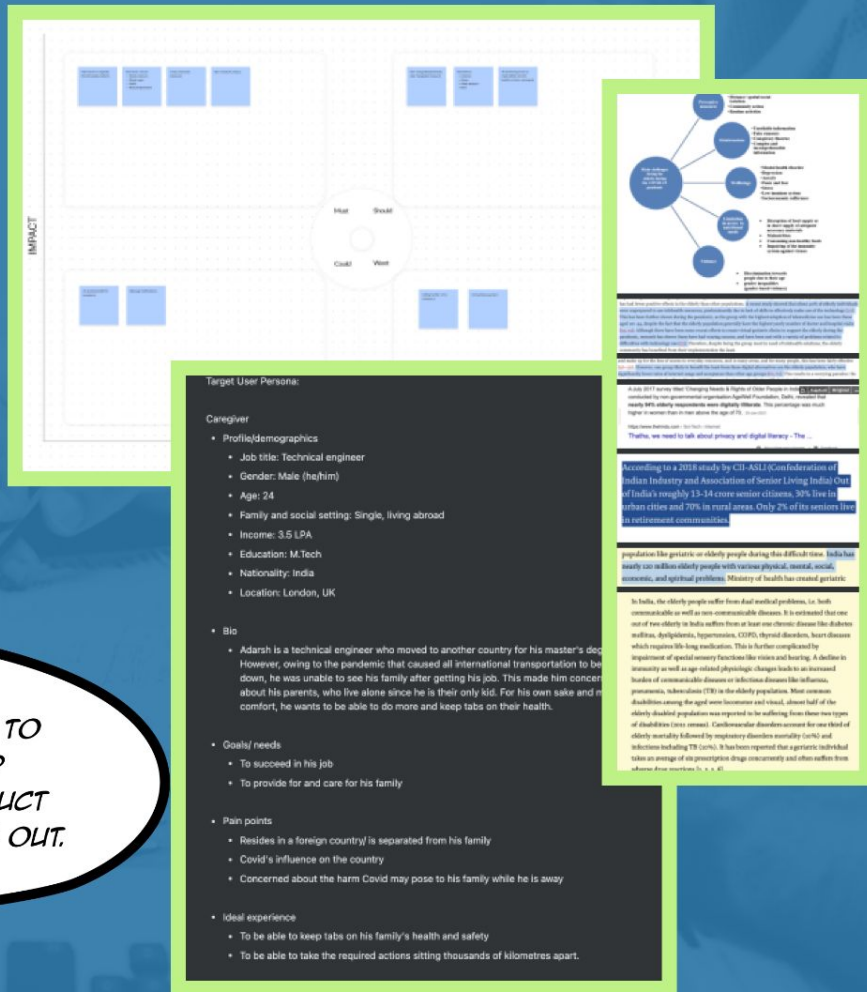
To curate all information collected into meaningful segments.

- **MoSCoW Analysis:**

To acquire a stronger insight of our target group.



THIS WAS A CHALLENGING STEP SINCE WE HAD TO
BREAK DOWN WHAT WE KNEW INTO SMALLER
CATEGORIES THAT COULD BE USED TO CONSTRUCT
OUR FINAL PRODUCT WITHOUT LEAVING ANYTHING OUT.



IDEATION

- **Brainstorming:**

To find at a solution to the given problem by compiling a list of spontaneously submitted ideas from the team members.

- **Storyboarding:**

To visually depict how a narrative will unfold in order to pre-visualize and empathise with the situation.

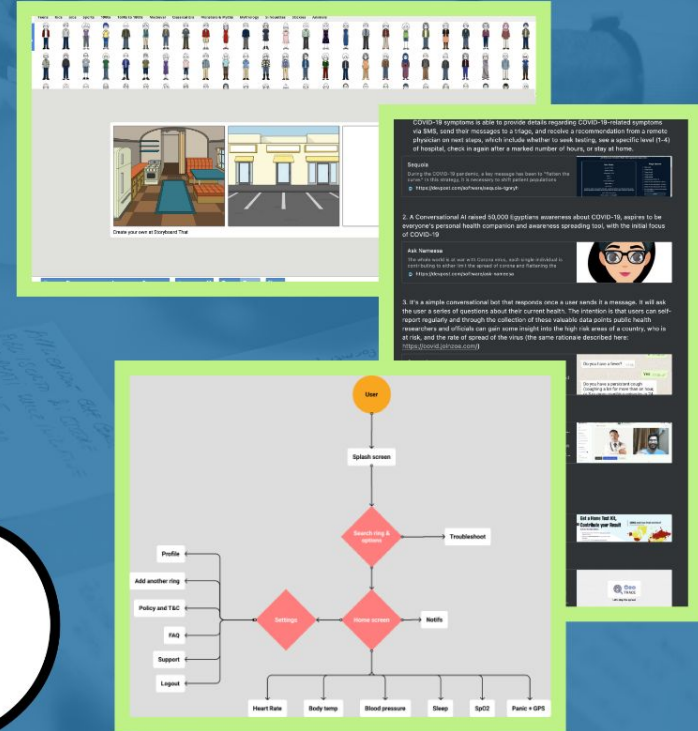
- **User flows:**

To define a prototype user's journey across a website or app to complete a job.

- **Task flow**

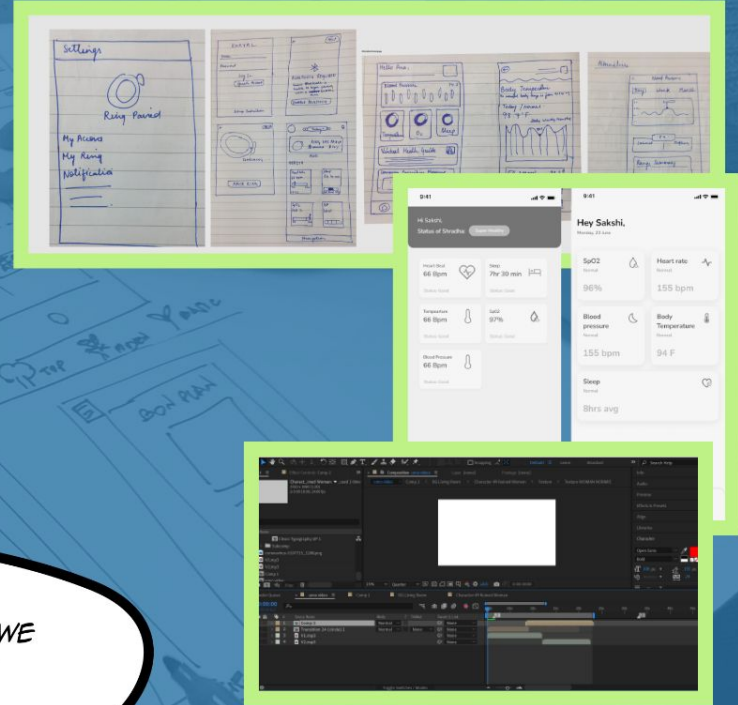
To depict a user's progress through a particular task.

WE NOW HAD A BETTER IDEA OF THE PROBLEM WE WANTED TO SOLVE AND COULD NOW BRAINSTORM ON POTENTIAL SOLUTIONS, FEATURES OR IDEAS.



DESIGN

- **Wire-framing:**
To determine the structure and flow of potential design solutions.
- **Prototype:**
Prototyping is an iterative process in which design teams turn abstract concepts into concrete forms, ranging from paper to digital.
- **User testing:**
To better understand how we can improve the user experience of our target group.
- **Video compilation:**
To get straight to the point and introduce your product to our customer base.



AHH, HERE COMES THE FUN PART ;) THIS IS WHEN WE STARTED PUTTING OUR IDEAS ONTO THE RIGHT MEDIUMS!

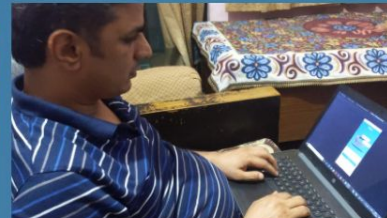
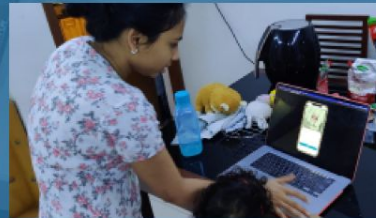


USER TESTING

Following our lo-fi and hi-fi designs , we did user testing to get feedback and reviews on our product, some of which was included into our final designs and then re-evaluated by the same users.

No of users tested:

- Elderly (60+ years of age): 4
- Caregivers: 8



USER TESTING FEEDBACK: WHAT DID THEY LIKE?



- It was a great benefit for them to have everything in one device to get all this information as it was a no-effort task.
- Text to speech feature is great for illiterate/digitally disadvantaged aged.
- SOS is great for managing healthcare emergencies
- Ring is a more user friendly and feasible alternative than a health band.

- Very clean and easy to understand screen designs
- As children/caregivers, it was easy to receive statistics on timewhich in turn helped in giving timely advise to correctly manage their health.
- It is simple to determine if they are healthy or not without any difficulty.



USER TESTING FEEDBACK: WHAT CAN WE IMPROVE?

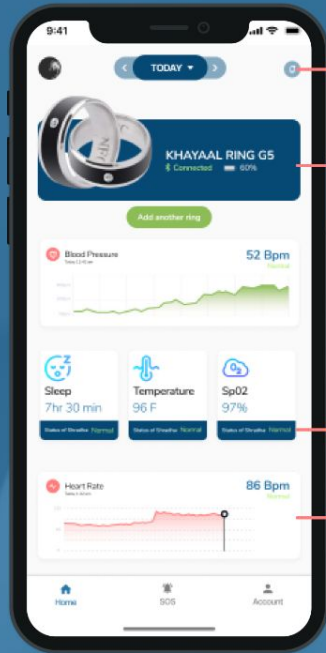


- Ring is presumed to be bulky and heavy based on the mockup.
 - Missing vital parameters such as blood glucose test, thyroid etc.
 - False alarm by accidentally pressing the SOS button.
-
- Feeling a little more anxious than usual when I see abnormalities in these parameters (sometimes these variation will be normal for old people based on their current activity levels/diet and/or medications)
 - A few buttons and texts were too small to perceive.



A FEW IMPLEMENTED CHANGES FROM USER TESTING

BEFORE



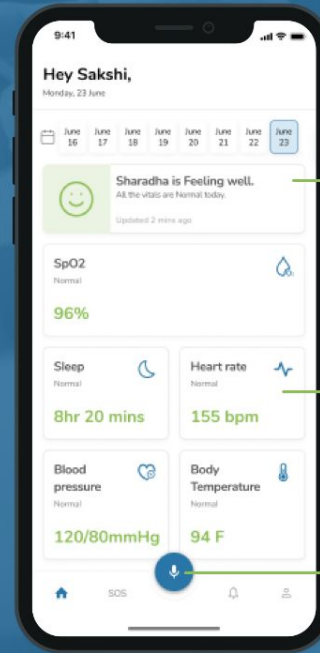
Too small to identify its functioning

Seems irrelevant on the main screen

User status is too small and unclear

Too inconsistent making it confusing in terms of its function

AFTER

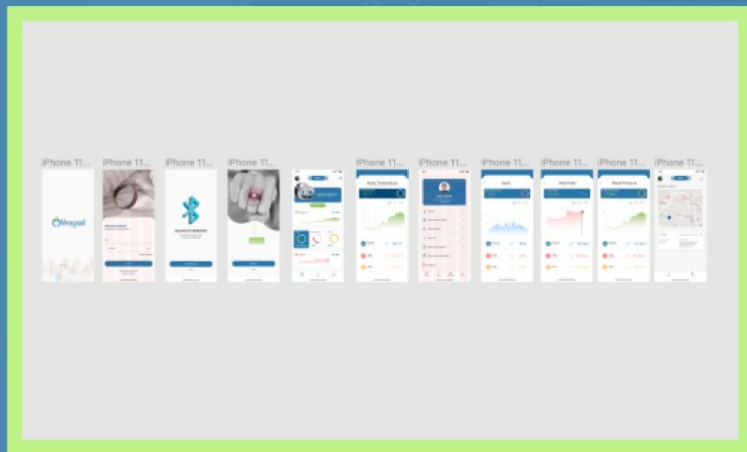


Overall status depiction to give user overall feedback

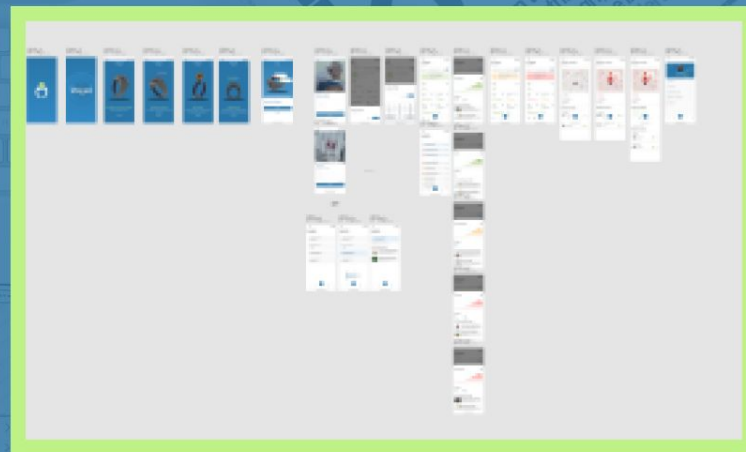
UI that displays user status clearly

Very helpful feature for digitally illiterate people

DESIGN

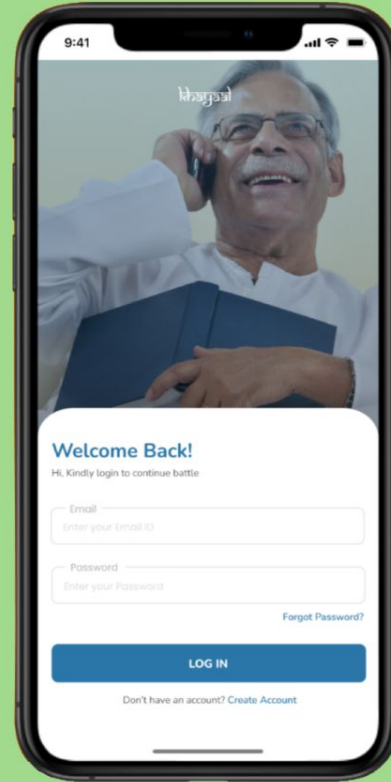
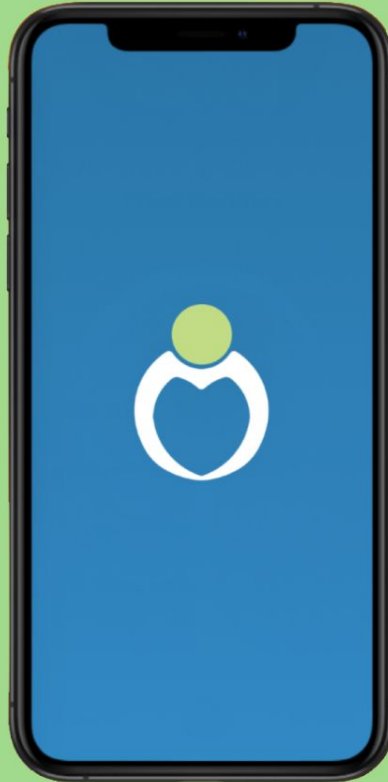
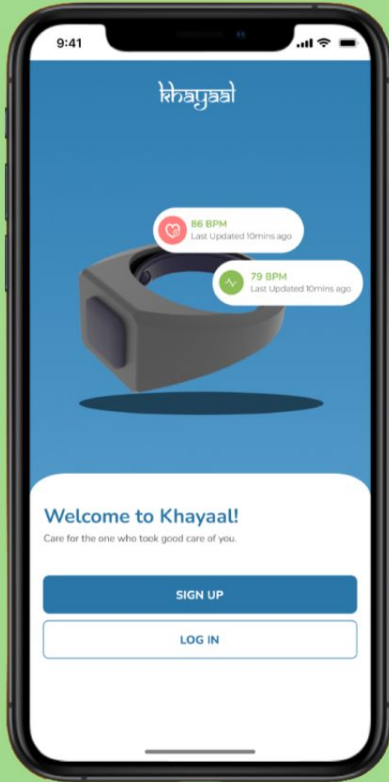


Hifi design 1 (before user testing)



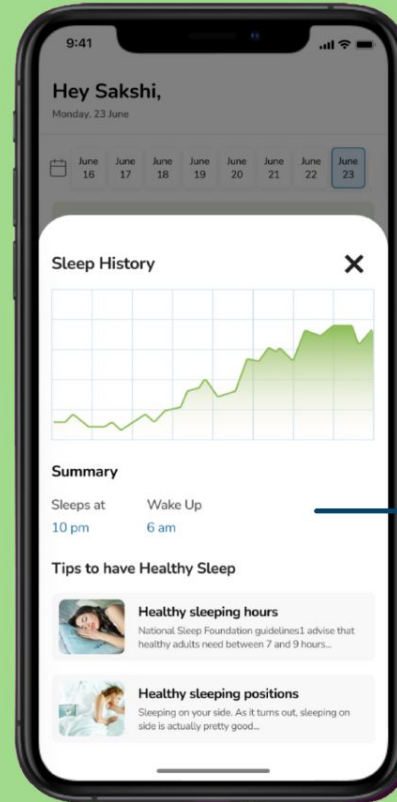
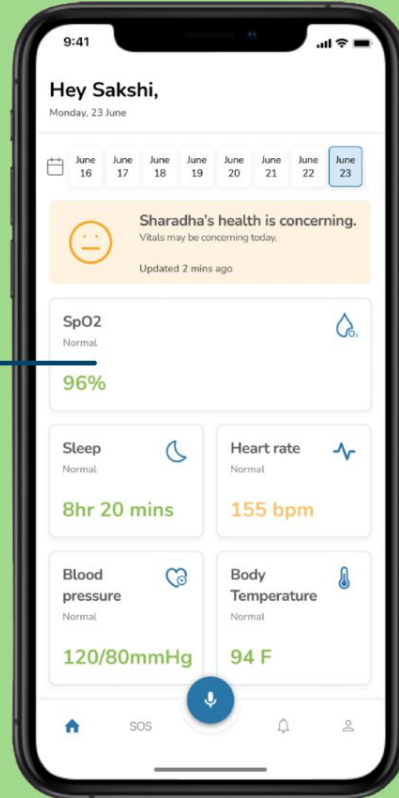
Hifi design 2 (after user testing)







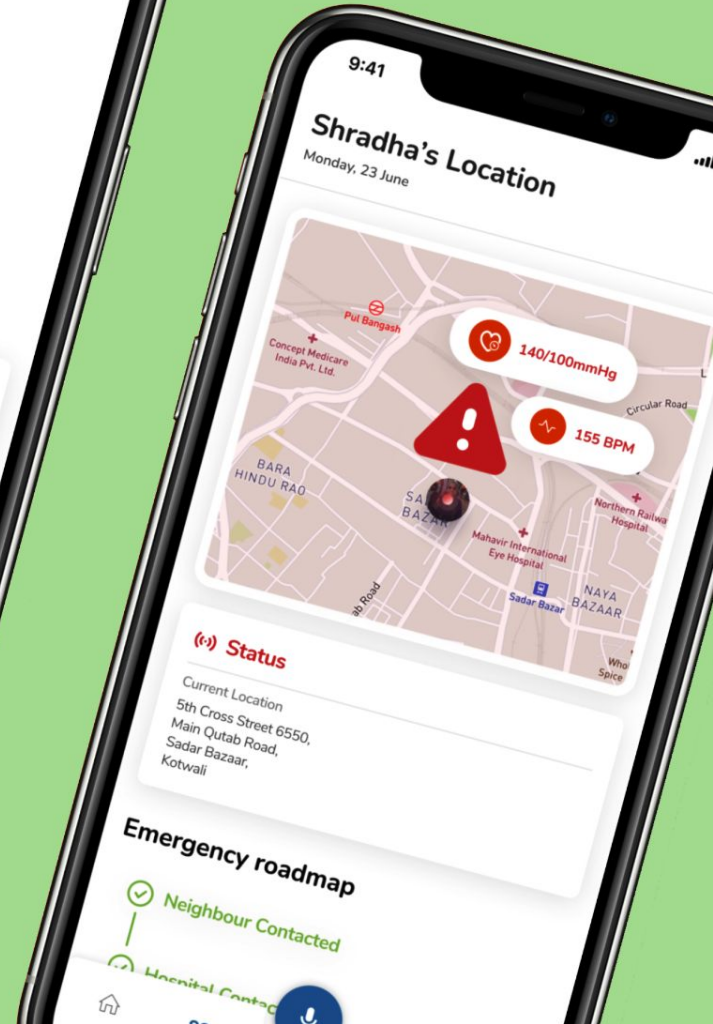
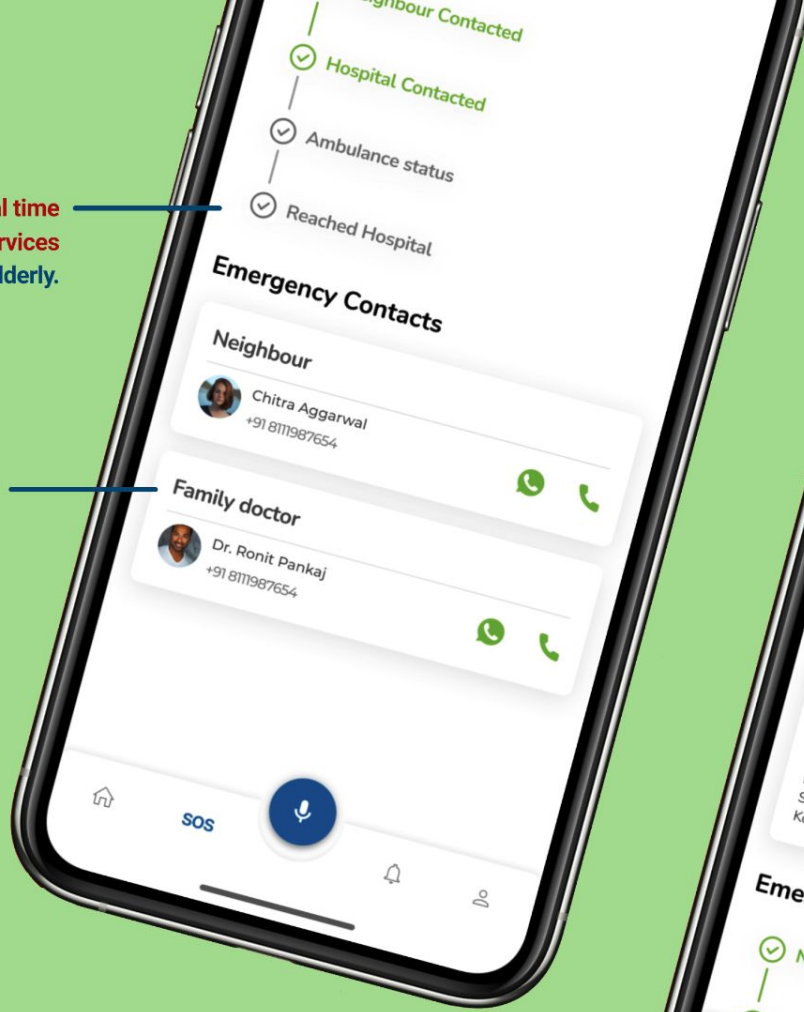
Home page showing all health parameters with real time user status.



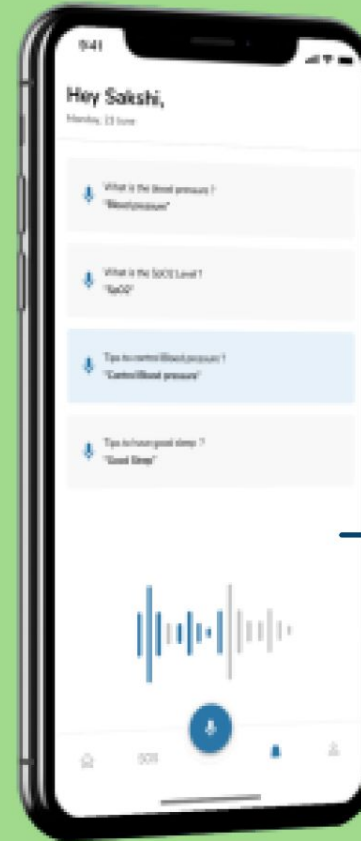
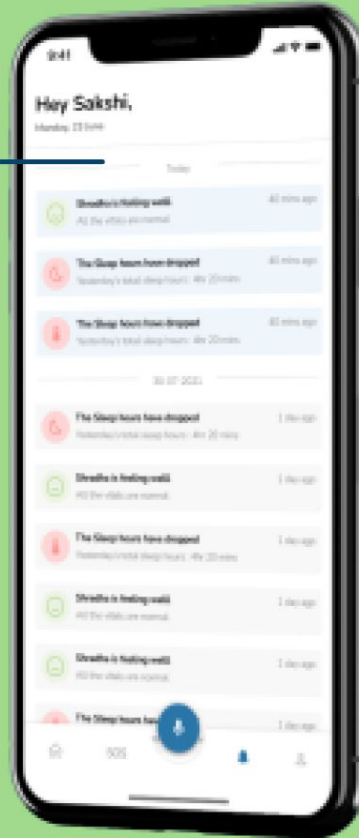
In-depth analysis and tips on all the tested parameters.

SOS page showing the the **real time** health, location and emergency services **status** of the elderly.

The emergency contacts saved by the user are contacted ASA there is an SOS situation through a **pre-recorded voice call**, a **Whatsapp** and an **SMS message** to make sure the user isn't left unattended in these times. If nobody responds to the following within a minute, the nearest hospital is contacted ensuring the best possible care for the aged.



View **notifications** of any user status via the notifs section. In case of an SOS situation, the notifications are sent to the mobile directly via SMS, and as a Whatsapp message to avoid any delay in care.



TTS engine to be more inclusive of the demographic (the illiterate). This feature too adapts to the native language chosen by the user.





Try the prototype out
here!



SUSTAINABILITY

Unless they are severely low on oxygen, a COVID-19-infected individual may not detect a fever, or shortness of breath. Owing to its high-powered, highly precise sensors, Khayaal can detect all of these changes the second they occur.

- Aids in the **early detection** and **management of symptoms**, **lowering** the number of elderly individuals admitted to hospitals as well as the **number of severe cases/deaths**.
- The ring makes use of **newly implemented technologies** that will benefit the elderly today and in the future in the most **feasible** and **user-friendly manner**.
- This will enable the aged to **overcome their fear** of such devices and **empower** them to take the initiative to check others out as well.
- External cost of maintaining the product is almost nil so **depreciation cost is less**.
- Additionally, the **hospital's resources** are now available to other people in need.



EXECUTION AND BUSINESS VIABILITY

How will we make money?

- Profit margin ~10% (competitors based)
- Support groups/investors (MNCs- Infosys, Dr. Reddy's)
- Regular customers (market of ~44 million elderly living in urban India)

How will we budget our product?

We couldn't obtain a definitive figure as we couldn't have determined the pricing for the product without:

- User testing
- Variable costs (tools, technology, resources (people), company set up cost, compliance, legal, product development, running cost, etc)
- Fixed costs

But based on our competitors we would like to maintain **a more affordable margin to increase adoptability** which in turn would bring us more market than a high priced product.

How will we make it more efficient?

- Cost effective
- Easily available
- B2C model
- Leveraging our USP
- Introducing different payment modes (EMI, UPI, Crypto, net banking, etc.)



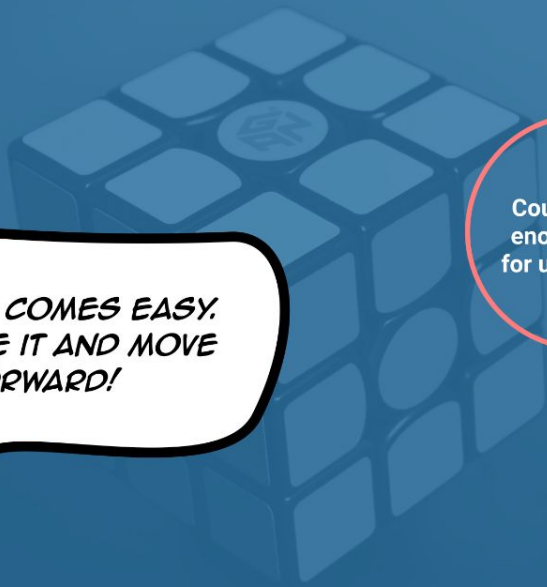
India is indeed a young country, with over 65 per cent of its population under the age of 35 years. However, there are 110 million elders in this country, who are above the age of 60, out of whom, 40 per cent live in urban India. From adult diapers, diagnostic and medical services to senior citizens residential complexes and security devices, the elder care market in India is worth \$1.5 billion. The coronavirus pandemic has seen an over 40 per cent surge



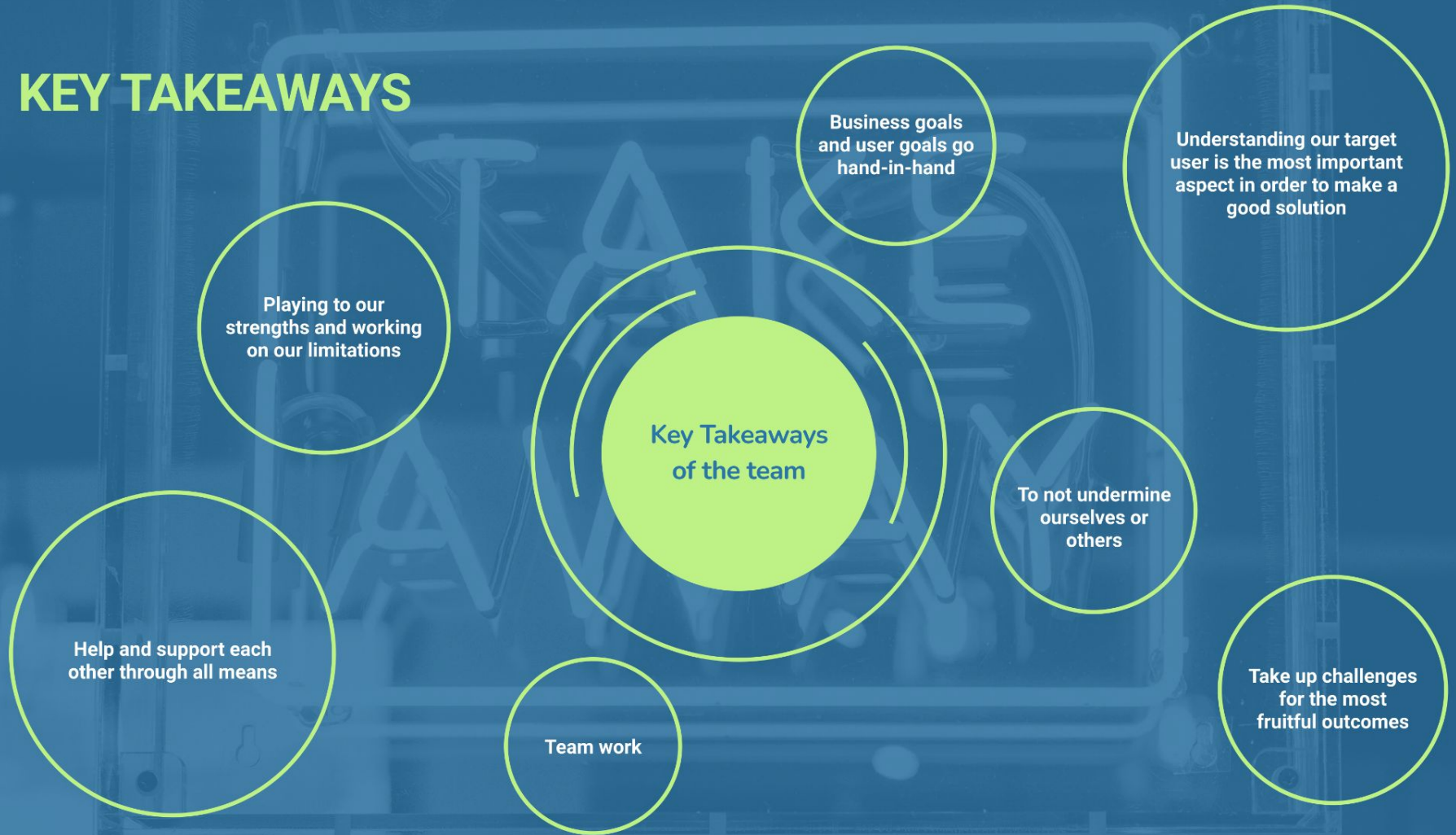
FUTURE SCOPE



CHALLENGES WE FACED



KEY TAKEAWAYS



MEET THE KHAYAAL FAM

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WE, **TEAM DEZAIN** WOULD LIKE TO
THANK YOU FOR TAKING OUT YOUR
PRECIOUS TIME TO GO THROUGH OUR
ENTRY AND HOPE TO TAKE THIS
PROJECT WELL BEYOND THIS
COMPETITION!

A SHOUTOUT TO ALL OUR PEERS AND FAMILIES FOR
THEIR **CONSTANT SUPPORT, INPUTS AND
FEEDBACK!**