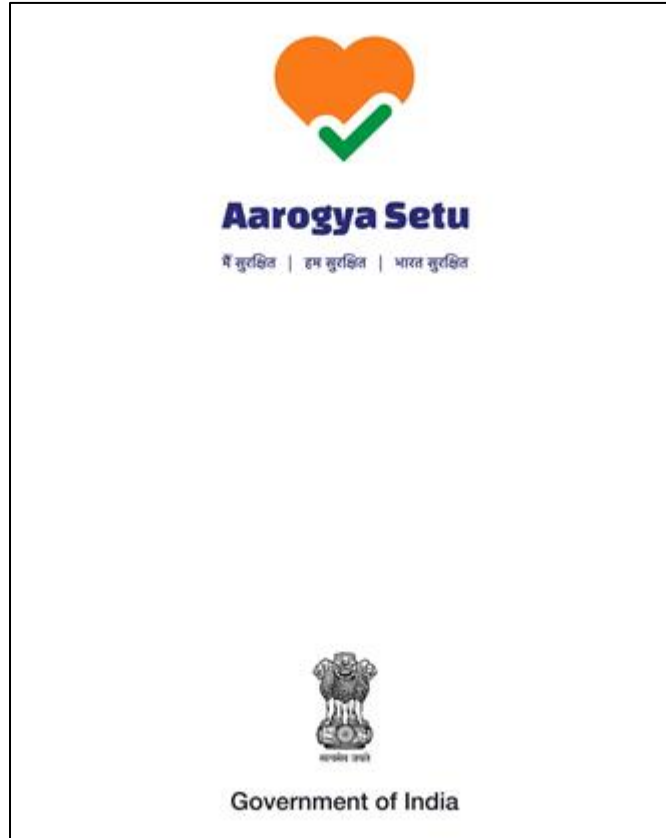


# **AAROGYA SETU APP - RECOMMENDATIONS FOR A BETTER ETHICAL DESIGN**



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## **EXECUTIVE SUMMARY**

- Aarogya Setu App has been serving as the first line of defence against the coronavirus and has proved to be an effective tool for the government of India in order to keep track of the Covid-19 positive cases.
- Less than 10% of the entire Indian Population is currently using the application.
- The app has been facing wide criticism due to its privacy policies, false positive alerts, lack of legal rules and laws pertaining to it, data insecurity, and data retention policies.
- We have analyzed the app based on ethical considerations and suggested a better ethical design.
- The pandemic has posed another major challenge to the Indian government with the increase in violence and spread of negative thoughts based on discrimination, inequities of the caste system, and religion.
- In addition, the lack of proper awareness of the pandemic has led to attacks on police and medical officials.
- We have suggested an add-on feature being a Multi Functional Data Display Plug In that displays awareness message for the public to prevent discrimination/violence based on race, religion, caste linked with COVID pandemic

# INTRODUCTION

Public Health Ontario defines contact tracing as a process that is used to identify, educate and monitor individuals who have had close contact with someone who is infected with a virus. These individuals are at a higher risk of becoming infected and sharing the virus with others. Contact tracing can help the individuals understand their risk and limit further spread of the virus [1].

Technology has touched almost every facet of human life. Especially in these tough times when the world is facing a pandemic, leveraging technology to trace the spread of the COVID-19 virus digitally has proved to be a boon for the governments across the globe. Contact tracing has universally agreed to be a useful method of reducing the spread of the virus. Many countries across the globe have developed their personalized contact tracing applications, such as ‘Ha Magen’ in Israel, ‘Trace Together’ in Singapore, ‘Home Quarantine’ app in Poland and ‘Aarogya Setu’ application in India [2].

Aarogya Setu application has been serving as the first line of defence against the coronavirus and has proved to be an effective tool for the government in order to keep track of the Covid-19 positive cases, tracing of their contacts and segregating containment zones from the non-containment zones in the locality. The application has been downloaded by over 100 million people [3] and its efficacy in monitoring the health status of the masses in a densely populated country like India has reduced the burden on the already fragile health infrastructure and the overburdened bureaucracy. With so many people using the application currently, it is necessary to make sure that the application satisfies the ethical considerations necessary for a nation with the greatest number of religions, cultures, and languages. In this report, we will be analyzing the

application and identify the major drawbacks that is a threat to ethical values of the users. In addition, we suggest an add-on feature to be embedded in the application which we consider is very necessary for the Indian population and would encourage harmony among people during this unprecedented period.

## **CURRENT SITUATION**

As the days of Covid-19 are passing by, the number of infected people cannot be seen to slow down, rather, the number of such cases are increasing at an alarming rate. Every country's government has taken steps in order to slow down the pandemic which includes lockdown, personal care as well as use of certain applications, known as Contact Tracing Apps, that can monitor the affected people and reduce the spread of coronavirus. One such application that we are focusing on is Aarogya Setu App, an application made by the government of India to keep a track of the trends of COVID-19 which has crossed more than 100 million downloads till date.

This application makes the use of GPS and Bluetooth of the smartphone and will alert you if a person comes in contact with anyone who has or had Covid-19 in his system. During its registration phase, it prompts us the language that you want to choose out of 11 languages, and along with that asks the user his/her age, gender, location, mobile number and if the user travelled outside to the country, in the past 30 days. Even though the user provides his details, he/she is assured that tracking will be done using the Unique Digital ID (DID), which is different for every device. Apart from that the latitude and longitude of the user is uploaded to the device every 15 mins. Moreover, a user can take a self assessment, to check if he has been exposed to covid 19 patients and how high the risks are. Apart from the advantages of using such application, there are numerous features

that create issues related to privacy, security and some other minor issues revolving around the same factors <sup>[4]</sup>.

One such major issue is that because of the absence of data protection law, there are very high chances that the contact tracing app is being misused to get to know the movements of the users, by some third person which is very scary. The other major issue that arises is the legality of making the application mandatory for all the government officials as well as for all the employees in most of the private companies. Taking this into consideration, India is the only democratic country that has made this application a mandatory one for the public. But mandating such application's use under the Disaster Management Act, does not make it enough for taking our private data into their database, rather an authorized law should be produced that makes the usage of this app legit keeping in mind the rights it is going to infringe and other bases of infringement <sup>[5]</sup>.

Moreover, the usage of GPS and Bluetooth raises privacy and security concerns too. This application allows to collect the latitude, longitude of the user, contact, self assessment details of the user which in turn means that multiple data points are been produced by this application, as compared to other apps where only one data point is been considered and converted into unique ID, which increases the chances of intrusion of personal data <sup>[6]</sup>. Apart from that, knowing that the technology used is Bluetooth, there have many cases related to data intrusion in the past namely BlueFrag, in which numerous androids and IOS got affected <sup>[7]</sup>. The functionality of Bluetooth sometimes provides false positives, if we consider two successive floors in a building, even if the two guys were on different floors, it may show that they have been in contact <sup>[6]</sup>.

Furthermore it's a wrong assumption that everyone has a smartphone and mandating it has created a major issue for some of the areas in India, as there are still certain weaker societies that cannot

afford a smartphone <sup>[4]</sup>. Rather “Group Dynamics” referring to human design guides should be taken into consideration to keep in mind about every section of the society and come to a collaborative decision. Despite the government’s policies to make its applications code available for the public, its source code is still not made open source. One such action that the government should have taken after making this app mandatory for downloading is making this application source code open. Making the code open source will help the community to audit the application and they might get to know the way their data is being handled as one is supposed to be conscious of the way his/her personal data is being used. The lifespan of data within the server was 30 days for healthy guy and 60 days for the sick individual but now the government has set a new protocol that the personal information will be removed from the system permanently after 180 days from the date of collection, within which different government departments can access the information for the same cause but nobody can actually check whether there data is permanently being deleted or not and as this server is linked to other government databases, it may lead to permanent mass surveillance which creates insecurity. Also, the data that the user fills up during the registration process can be an incorrect or fake one and as this information is in no way verified by the government, the potency of data becomes questionable <sup>[5]</sup>.

Apart from that one of the technical issue that the application currently has is that right now it gives alerts only if a person with whom you came in contact with COVID, rather it should provide the alerts to the user as soon as that person starts experiencing some of the symptoms, so that he/she can take precautions to prevent the spread.

Moreover the government is not liable to any unauthorized access of user’s information which means the government will not be liable if anyone’s information is being leaked, after looking at

the liability clause in the terms of agreement, which also removes the government from any liability if the application provides false positives <sup>[5]</sup>.

## **ANALYSIS**

### **I. Key Facts:**

Aarogya Setu App, India's main contact tracing technology, was launched on April 2nd this year. The app was developed by the National Informatics Centre under the Ministry of Electronics & Information Technology. According to NITI Aayog CEO Amitabh Kant, it has become the world's fastest app to reach 50 million downloads in just 13 days. The app reached more than 100 million installs in 40 days. On 26 May, amid growing privacy and security concerns, the source code of the app was made public <sup>[7]</sup>. Ethically app is strong in the perspective of reliability as open source makes the world to experience unbiased information.

The key features of Aarogya Setu include <sup>[8]</sup>:

- Automatic contact tracing using Bluetooth
- Self-Assessment test based on ICMR guidelines
- Risk Status of User
- Updates, advisory and best practices related to COVID-19
- Geo-location based COVID-19 statistics
- Nationwide COVID-19 statistics
- Emergency COVID-19 Helpline contacts



- List of ICMR approved Labs with COVID-19 testing facilities
- e-Pass integration
- Support for 12 Languages

## **II. Privacy:**

The records are stored on the phone till the time any user tests positive or declares symptoms of COVID-19 in a self-assessment survey in the app. In such cases, the records are uploaded to the servers. As Internet privacy and anonymity are paramount for users and the users have all the rights to the data which is considered to be their asset. But concerns have been raised by experts and even ethical hackers on the privacy of the application. Critics say that Arogya Setu, and applications like Sahyog that link to it, could infringe privacy as there was no clarity on how data would be shared between the two applications <sup>[7]</sup>.

The policy goes into some detail on where and how long the data will be retained. But it leaves the language around who will have access to it vague.

## **III. Legal aspects of the App <sup>[9]</sup>:**

- The main goal of data protection is to ensure that information relating to individuals is collected and used in such a way that all their other fundamental rights are protected.
- The dataflow proposed must be clear, including all the categories of data that will be collected and used.
- The purpose(s) should be clear, specific, granular and well-defined

But the above pointers when considering the app, there is no legislation that spells out in detail how the online privacy of Indians is to be protected. Therefore, Arogya Setu users have little choice but to accept the privacy policy provided by the government.

#### **IV. Key Stakeholders:**

The app is available in 11 languages. All Central government officials, including the outsourced workforce, have been directed to download it <sup>[8]</sup>.

#### **V. Transparency:**

There should be more transparency on the inner workings of an app that is being promoted by the government and which is asking for the personal details of millions of citizens <sup>[7]</sup>. But experts have raised doubts about the government claim. Mr. Alderson has said there are flaws in the app which make it possible to know who is sick anywhere in India <sup>[10]</sup>. "Basically, I was able to see if someone was sick at the PMO [prime minister's office] or the Indian parliament. I was able to see if someone was sick in a specific house if I wanted," he wrote on his blog <sup>[10]</sup>. Arogya Setu denied any such privacy breach in a statement.

#### **VI. Is App system reliable:**

To register, users have to give their name, gender, travel history, telephone number and location. "People can fill the form incorrectly and the government cannot verify it, so the efficacy of the data is questionable," Mr Pahwa told the BBC <sup>[10]</sup>. According to a Buzzfeed report, an Indian software engineer had hacked the app to bypass the registration page, and even stopped the app from gathering data through GPS and Bluetooth <sup>[10]</sup>.

## VII. **Economic Drivers:**

- App Administration <sup>[11]</sup>:

Any app that requires a backend to manage the app, such as to push new content to the app or to manage users, will be more costly as the complexity of that backend increases. This complexity arises due to the government updating the privacy laws or protocols. Government of India (“MeitY”) is designated as the agency responsible for the implementation of this Protocol and its developer, the National Informatics Centre shall, under this Protocol be responsible for collection, processing and managing response data collected by the Aarogya Setu mobile application.

- People or User-Centricity <sup>[12]</sup>:

Aarogya Setu uses contact tracing to record details of all the people you may have come in contact with as you go about your normal activities. If any one of your contacts, tests positive for COVID-19, you can be informed and proactive medical intervention be arranged for you, in order to break the chain of infection.

## VIII. **Cultural values:**

Keeping cultural values in mind, especially in India which is a very diverse country, in order to reach each and every individual, the app supports 12 different major languages. There is no barrier when ethically speaking, reaching to all kinds of cultures.

But it raises some concerns regarding the communities in the Indian subcontinent. It may indirectly encourage the practice of ostracising, which is untouchability. Untouchability has been outlawed in India but due to the practices followed now there may be a mis-concern and some people in the society can do propaganda again which can be a serious ethical concern of the society disturbing

the harness. The situation should be clearly understood that the practices followed now are due to the emergency situation and app should also be framed to convey the same.

Since the outbreak of the pandemic, Asians and people of Asian descent have been targets of derogatory language in media reports and statements by politicians as well as on social media platforms, where hate speech related to Covid-19 also appears to have spread extensively. US President Donald Trump's use of the term "Chinese virus" and Secretary of State Mike Pompeo's use of "Wuhan virus" may have encouraged the use of hate speech in the US <sup>[13]</sup>.

Governments should take urgent steps to prevent racist and xenophobic violence and discrimination linked to the Covid-19 pandemic while prosecuting racial attacks against Asians and people of Asian descent <sup>[13]</sup>. This can be done through tuning or framing the app accordingly enlightening the people of the world.

## **IX. Our Suggestion for Added Feature:**

We suggest for the application to include a Multi Functional Data Display Plug In. The plugin could display awareness message for the public to prevent discrimination/violence based on race, religion, caste linked with COVID pandemic. Though there is a video section in the app currently, we suggest to not include this feature as a video due to limited accessibility. Instead, the plug-in must be displayed at all times during the usage of the application. In a country like India, with vast cultural differences, it is important to maintain peace and prevent the ongoing violence and discrimination issues due to cultural differences during the pandemic.

## ETHICAL CONSIDERATIONS OF THE PRODUCT

Employing digital tracing on the population level for identifying early cases poses multiple ethical challenges. Let's try to examine ethically the contact tracing apps in general and Aarogya Setu as an example in various aspects <sup>[14]</sup>.

### I. **Testing:**

Contact tracing apps cannot be considered as a reliable platform to ascertain the positive Covid-19 cases and an alternative to Testing. Infact widespread testing is a crucial component in order to ensure the efficacy of this application. India is conducting 5500 tests/1M population which is way lower considering it's 134 crore population <sup>[19]</sup>. It is therefore the moral responsibility to ramp up the testing infrastructure as the ability to conduct testing should not be linked to digital contact tracing.

### II. **Aggregated vs Identifiable Data:**

Systems must be designed to guarantee the security and confidentiality of user data exclusively through their encryption and anonymization concept and the verifiability of the source code. Anonymized aggregated data can be shared with government and researchers within the constraints of regulations and existing laws. At the same it is necessary for contact tracing apps to ensure that there should be enough safeguards in place to ensure that the data collected is used for epidemiological purpose only. The Law Ministry of India has made it clear that the data stored is fully encrypted and is deleted within 45 days for non-risk users and 60 days from date of discharge/cure for Covid-19 patient <sup>[2]</sup>.

### III. **Voluntary consent:**

Consent based data sharing is the most ethical approach to data sharing for contact tracing as a way to mitigate privacy risks. In the case of Aarogya Setu application, the Indian government has made it mandatory to download the application for the all private and government employees and people living in the Covid-19 containment zones. The user consent in this case has become inconsequential with the mandated usage of the app. On the other hand, government has been advocating the mandatory usage of the application on the pretext that it is impossible to carry out manual contact tracing considering the size and population of India and therefore app is an effective tool to contain the spread of Covid-19. This is an ethical dilemma which when examined from a Pragmatist point of view tilts towards the greater public good weighing against privacy and voluntary consent.

#### **IV. Privacy risks:**

Privacy is the most important concern while dealing with contact tracing apps. Access to a user's personal data, his location coordinates and constant surveillance is a violation of his/her privacy. The Indian legal system considers 'Right to Privacy' as a fundamental right and employing a surveillance tool on a country level with no institutional oversight is a breach of privacy. The Supreme Court of Israel adjudicated that the government cannot use surveillance techniques for Covid-19 without any legislative sanction. A 'French' ethical hacker recently claimed that there were security issues with the Aarogya Setu app and the privacy of over 100 million Indians is at stake, however the government clarified that there was no data or security breach <sup>[2]</sup>. It is necessary that verifiable technical measures such as cryptography and anonymization techniques must be employed to ensure user privacy. The researchers at MIT have developed the PACT protocol which is used to develop contact tracing apps keeping privacy as the focal point <sup>[15]</sup>. In these apps Bluetooth is employed to

ascertain proximity of the users rather than GPS and the PACT protocol broadcasts constantly changing and randomly chosen ‘chirp’ values, which are not useful in identification of the user. This PACT protocol ensures integrity, transparency and openness giving the autonomy to its users to have full control over the lifecycle of the system. However, it is worth noting that it is not possible to have absolute privacy and therefore the decision should be left at the behest of the people in a democratic country like India to strike an appropriate balance between social health and civil liberties.

#### **V. Data Security:**

A multiple layered protection against data loss and unauthorized access is the need of the hour. Ensuring that data is stored locally on the smartphone and not passed on to third party benefitting from it such as health insurance companies or employer is the moral responsibility of the government. The Aarogya Setu privacy policy is in compliance with these principles and ensures that the personal information is securely encrypted before being stored on the cloud and is incapable of being accessed by the user <sup>[16]</sup>. A plausible exception for data usage for medical researchers i.e. epidemiological purpose should be granted via a voluntary consent explicitly taken in a separate section in the application to ensure transparency and trust.

#### **VI. Governance and equitable access:**

A governing body should be framed to provide oversight in determining data uses, collection and resulting intervention. The Aarogya Setu is managed by the Empowered Group on Technology and Data Management, a body that overlooks collection, processing, storage and sharing of ‘anonymized data’ <sup>[17]</sup>. This is paramount in building trust among the users of the app regarding the safety of their data and an intervening body to prevent gross misuse.

One other element of the application should be its accessibility. Efforts to curb the pandemic should not be turned into people's mobile phones into a digital version of the medieval leper bell. It should not be implemented in a punitive way such as providing treatments to only those who use the app. Aarogya Setu is freely available on Google Playstore & Apple App store in 11 languages considering the fact that India is a multilingual diverse nation. The idea behind the name of the application is about bridging the divide. "Aarogya" means Health and "Setu" means Bridge. This builds an perception and trust image, thus motivating citizens to be a part of 'Corona Defeating Army', and establish a sense of responsibility and moral obligation to fight together the pandemic as a community.

The ethical examination conducted can also be correlated with some of the 'The ACM Code of Ethics & Professional Conduct' principles which serves as a base document for applying them in a professional setting and laying out the basis for ethical decision making [18].

- **'Respecting Privacy'**: A critical aspect for those in the computing profession. They should use personal information only for legitimate ends and without violating individual rights. Establish transparent policies & procedures, clearly define , enforce and communicate retention & disposal periods to data subjects, and prevent re-identification of anonymised data as well as unauthorised data access.
- **'Honor Confidentiality'**: Ensure non-disclosure of personal data except in cases where it is evidence of law, medical research purpose, etc.
- **'Be Fair and take action not to discriminate'**: Honesty is an essential component of trustworthiness. It is the duty of professionals to ensure equitable access as well as clearly defined the privacy policies and make the source code open in order to ensure fairness.



- **‘Avoid harm’:** It is the duty of the responsible authority to avoid harm and in cases where even well intended actions may lead to harm, minimize the harm. The computing professional also has an obligation to report any system risks that might result into harm i.e. there should be an active ‘whistle blower’ policy.
- **‘Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing’:** This ethical principle, concerning quality of life of all people, affirms an obligation for computing professionals to promote fundamental human rights & protect individual’s right to autonomy and minimize negative consequences of computing.

## **BENEFITS OF THE PRODUCT**

One of the most important benefits of implementing suggested changes would be the significant increase in a number of traced coronavirus cases using the app. Aarogya Setu is the world's most downloaded contact tracing app with more than 100 million users <sup>[20]</sup>. However, the number is not good enough considering the fact that India has 1.35 billion people which means not even 10% of the total population is currently using the app. In contrary, 40% of the population in Ireland is using the contact tracking app <sup>[21]</sup>. The project focuses on investigating the reason behind the lower percentage of app users in India and to provide solutions to increase the user base.

The contact tracing app’s success depends on what percentage of the population uses it <sup>[22]</sup>. One of the main reasons many people are still not using the app is privacy issues associated with it. There are a growing number of concerns among individuals that their personal information may get shared with third-party and even can be used by the government to spy on them. Addressing such issues will build trust among the general public; as a result, an increasing number of people will

sign up for the app. With more numbers of individuals using the app, the accuracy to report potential cases will increase dramatically.

By addressing privacy issues we are also protecting users' information from the potential data mishandling. Hackers may steal the sensitivity information of users and can make it public. For that reason, it is important to ensure that the app stores a minimal amount of personal information about the users.

Implementing such suggestions will not affect the overall cost of the project much owing to the fact that the principal design of the app will remain nonetheless the same. However, to make sure the app follows the proposed ethical aspects, the government may need to hire dedicated personnel for it. Apart from that, the additional cost may also occur to educate the technical team about the ethical frameworks. Moreover, the proposed changes will not cost a massive amount of money but do need willingness.

## **CONCLUSION**

Our motive with choosing Aarogya Setu app is firstly, due to the wide criticism it has been receiving based on many factors. We have successfully analyzed the app to identify the problems and justify the criticism placed. Secondly, we intended to suggest a better ethical design to overcome these criticisms, which has been met with our ethical suggestions explained. In addition, we have successfully suggested for the app to include an add-on feature, based on the current problem the country is facing and has not taken any steps to overcome it. The issue of discrimination and violence based on the pandemic may not seem to be an issue of priority to the government right now. But, when lives are lost, be it due to disease, or violence, it is the same.

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## APPENDICES

### Human Design Worksheet

Humane Design Guide				
Use this worksheet to identify opportunities for Humane Technology.			What are Human Sensitivities?	
Product or feature:	Aarogya Sethu App – Recommendation for a better ethical design		<b>Human Sensitivities</b> are instincts that are often vulnerable to new technologies.	
Value proposition:	Multi-functional data display plugin			
Measure of success:	Increase in number of stakeholders and their diversity			
Human Sensitivity	We are inhibited when	What inhibits	We are supported when	Opportunity to improve
<b>Emotional</b> What we feel in our body and in our physical health. <small>The added feature focusses on the emotional perspective. Hence there is a good opportunity to improve</small>	We are stressed, low on sleep, afraid or emotionally exhausted.	<ul style="list-style-type: none"> <li>Artificial scarcity</li> <li>Urgency signalling</li> <li>Constant monitoring</li> <li>Optimizing for screentime</li> </ul>	Design engenders calm, balance, safety, pauses and supports circadian rhythms.	<input checked="" type="radio"/> High <input type="radio"/> Low
<b>Attention</b> How and where we focus our attention. <small>The app is straight forward with its first step being self-assessment tool</small>	Attention is physiologically drawn, overwhelmed or fragmented.	<ul style="list-style-type: none"> <li>Constant context switching</li> <li>Many undifferentiated choices</li> <li>Fearful information</li> <li>No stopping cues (e.g. infinite scroll)</li> <li>Unnecessary movement</li> </ul>	Enabled to bring more focus and mindfulness.	<input checked="" type="radio"/> High <input type="radio"/> Low
<b>Sensemaking</b> How we integrate what we sense with what we know. <small>The app makes sense as its main motive of contact tracing is met but there are some glitches that affect the same</small>	Information is fear-based, out of context, confusing, or manipulative.	<ul style="list-style-type: none"> <li>Facts out of context</li> <li>Over-personalized filters</li> <li>Equating virality with credibility</li> <li>Deceptive authority (ads vs. content)</li> </ul>	Enabled to consider, learn, express and feel grounded.	<input type="radio"/> High <input checked="" type="radio"/> Low
<b>Decisionmaking</b> How we align our actions with our intentions. <small>Intentions and agency are not solicited nor supported as the app is owned by the government</small>	Intentions and agency are not solicited nor supported.	<ul style="list-style-type: none"> <li>Avatars to convey authority</li> <li>Stalking ads and messages</li> <li>Push content models</li> <li>Serving preference over intent</li> <li>Quantified social status</li> </ul>	Enabled to gain agency, purpose, and mobilization of intent.	<input type="radio"/> High <input checked="" type="radio"/> Low
<b>Social Reasoning</b> How we understand and navigate our personal relationships. <small>Numerous privacy issues to be considered for the app</small>	Status, relationships and self-image are manipulated.	<ul style="list-style-type: none"> <li>Viral sharing</li> <li>Implied obligation</li> <li>Enabling impersonation</li> <li>Suppressing views and nuance</li> </ul>	Enabled to connect more safely and authentically with others.	<input type="radio"/> High <input checked="" type="radio"/> Low
<b>Group Dynamics</b> How we navigate larger groups, status, and shared understanding. <small>High opportunity to inclusiveness and the add-on feature concentrates on improving the same</small>	Excluded, divided and mobilized through fear.	<ul style="list-style-type: none"> <li>Enabling ad hominem or hate speech</li> <li>Enabling viral outrage</li> <li>Lack of agreed-upon norms</li> </ul>	Enabled to develop a sense of belonging and cooperation.	<input checked="" type="radio"/> High <input type="radio"/> Low
[ Center for Humane Technology ]    www.humanetech.com			Now rank the sensitivities 1-6 based on what you now see as the largest opportunities for Humane Design. Then use the second sheet to develop an action statement.	

## Humane Design Guide

Now develop an action statement for Humane Technology using your evaluation and prioritization from the previous sheet.

### 1. In what ways does your product/feature currently engage Human Sensitivities?

- Which sensitivities are engaged with which feature?
- How is the value proposition delivered?
- Which specific elements might warrant redesign?
- Are the success criteria in tension with any sensitivities?
- There is high scope to improve emotional sensitivities as lot of privacy issues can be revised which does not drain out the users even though they feel they are constantly monitoring. Regarding the group dynamics high opportunity to inclusiveness and the add on feature concentrates on improving the same.
- The value proposition can be delivered in the form of text, video or play cards that is frequently displayed throughout the app usage.
- The app only gives the warning if the person is in contact with Covid-19 positive user. The effective redesign would be to give the warning while in contact with the person who started showing symptoms. The Bluetooth is vulnerable to be hacked easily and also can lead to false positives which can rise unnecessary concern in the society. High chances of Impersonation since there are no verification.
- Success criteria effects the sensitivity positively.

### 2. How might your product/feature support or elevate human sensitivities?

- Where are humans naturally brilliant at manifesting the value proposition?
- How might a design element change to better support that brilliance?
- With social sensitivities, could the design encourage people to meet the goal in real life?
- Do any success criteria need to shift to support human sensitivities?
- The plugin should be in simple language and easily should make sense to the users distributing positive energy.
- Plugin should be added enabling text to speech function for visually impaired.

### 3. Action Statement

- What is one thing you want to learn more about?
  - What would you like to discuss with your team?
  - What would you like to design or prototype?
  - Are there any new design principles you might employ?
- Use extra space for text, diagram, wireframes...

- Finding an alternative to Bluetooth tracing to increase privacy as it is vulnerable.
- Increasing privacy and accuracy.
- Introducing the Multi-functional data display plugin to enlighten the users spreading positive energy and support in the pandemic.
- Discussing with the team to decide if the plugin has to be in text or video format or both to spread the awareness.
- To discuss about feature of the app regarding data retention policy
- To discuss about the legal aspects or framing of the laws for the app as currently there are none.

## Video Recording:

[https://lakeheadu.zoom.us/rec/share/uv4kFbvUrHlOZq\\_m4UjdavQnRonuaaa80yJP\\_6dfnkuv0u-86AUGMYsq1Dhq9IpV](https://lakeheadu.zoom.us/rec/share/uv4kFbvUrHlOZq_m4UjdavQnRonuaaa80yJP_6dfnkuv0u-86AUGMYsq1Dhq9IpV)

Password: 5l#@VR\$%

