

An illustration of a clothing store with a white rectangular box overlaid on the center. The box contains the text 'Designing responsibly in the time of a pandemic'. The background shows a clothing rack with several hangers, and a group of people standing in front of it. One person on the left is wearing a mask and holding a sign. The overall color scheme is a gradient of reds and oranges.

Designing responsibly in the time of a pandemic

STACK 2020

You have a way to **quickly isolate people** from a virus.

It involves **collecting people's data**.

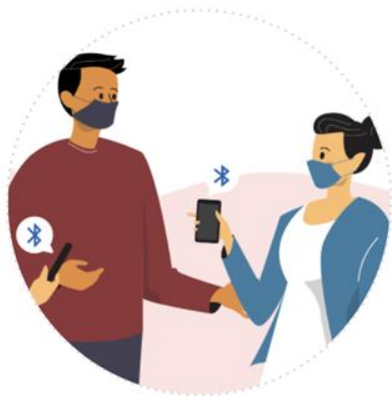
Would developing the technology be less responsible, or more?

Creating responsible technology

WHAT DID WE LEARN?



Design ethics into
the technology



Launch, and create
conversations



Invest in things that
could help to build trust



Fair, ethical, and sustainable

e.g. healthy internet, inclusive tech

◆ ADAPTED SUMMARY



ADAPTED SUMMARY



How TraceTogether works (via Bluetooth)



Ana's phone broadcasts anonymous keys. These **keys change at regular intervals**, which prevents malicious tracking.



Ana sits next to Bob. Their phones exchange anonymous keys.



The anonymous keys "heard" by the phone are **stored only on phone**. Data **after 25 days is deleted**.



Ana tests positive for COVID. With consent, she uploads anonymous keys that her phone "heard" in past 25 days.



MOH decrypts anonymous keys into mobile numbers, and quickly contacts those at risk of infection, including Bob.

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1

Design ethics into the technology





Two ways of managing data

By governance

Data protected by standards and policy

By infrastructure

Ethics designed into the technology

Data cannot be easily misused

DESIGN ETHICS INTO THE TECHNOLOGY

Two ways of managing data

By governance

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Ethics designed into the technology

Data cannot be easily misused

**TraceTogether
relies mainly on
infrastructure**

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◆ DESIGN ETHICS INTO THE TECHNOLOGY

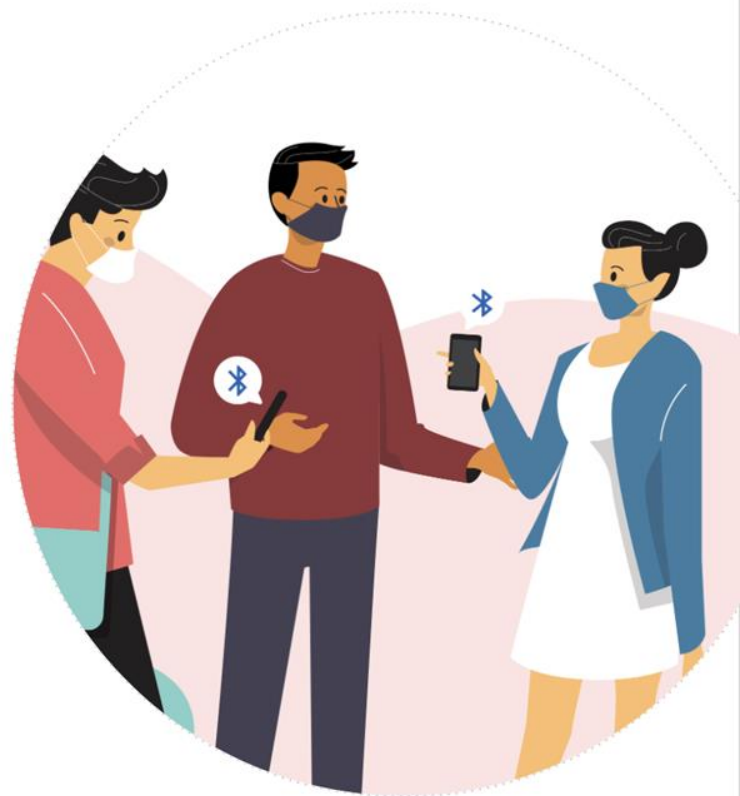
If infrastructure is done well, governance is a lot simpler

- ◆ Less doubts on how data is safeguarded
- ◆ Team can better focus on the tech and other matters



2

Launch, and create conversations



◆ LAUNCH, AND CREATE CONVERSATIONS

PRIORITY

Stop the spread, as
quickly as possible



PRIORITY

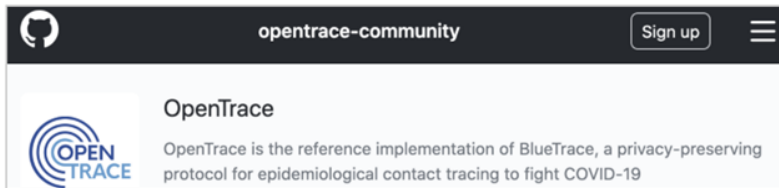
Users' data concerns;
Promise to users



Everyone's perspective was valid. But how do we progress?

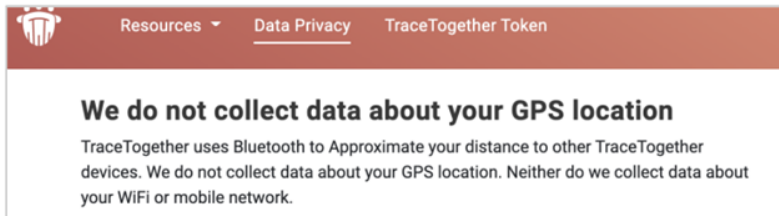
LAUNCH, AND CREATE CONVERSATIONS

Open sourced code on GitHub



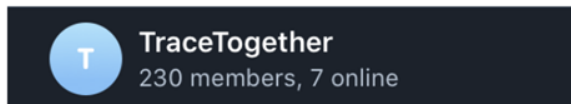
The screenshot shows the GitHub repository page for 'opentrace-community'. At the top, there is a dark navigation bar with the GitHub logo, the repository name 'opentrace-community', a 'Sign up' button, and a menu icon. Below the navigation bar, the repository name 'OpenTrace' is displayed next to its logo, which consists of concentric blue circles and the text 'OPEN TRACE'. A description follows: 'OpenTrace is the reference implementation of BlueTrace, a privacy-preserving protocol for epidemiological contact tracing to fight COVID-19'.

Easy-to-read privacy statement



The screenshot shows a privacy statement page for TraceTogether. It features a dark red header with the TraceTogether logo and navigation links for 'Resources', 'Data Privacy', and 'TraceTogether Token'. The main content area has a white background with a bold heading: 'We do not collect data about your GPS location'. Below the heading, the text reads: 'TraceTogether uses Bluetooth to Approximate your distance to other TraceTogether devices. We do not collect data about your GPS location. Neither do we collect data about your WiFi or mobile network.'

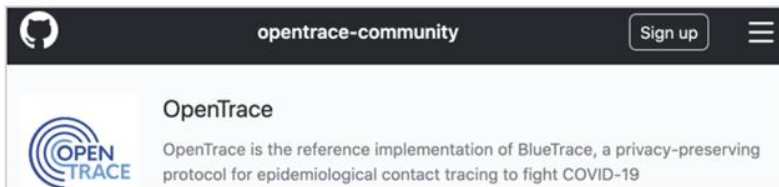
Informal platforms (e.g. Telegram) to clarify doubts, get feedback



The screenshot shows a Telegram channel for 'TraceTogether'. It features a dark blue header with a circular profile picture containing a white letter 'T'. To the right of the profile picture, the channel name 'TraceTogether' is displayed in white, followed by the text '230 members, 7 online'.

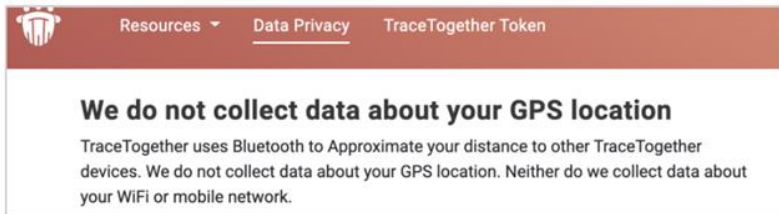
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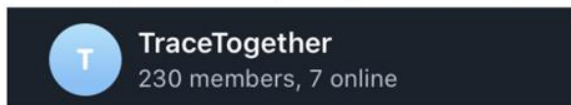
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Easy-to-read privacy statement



The screenshot shows the 'Data Privacy' section of the TraceTogether website. It features a navigation bar with 'Resources', 'Data Privacy', and 'TraceTogether Token'. The main heading is 'We do not collect data about your GPS location'. Below this, it states: 'TraceTogether uses Bluetooth to Approximate your distance to other TraceTogether devices. We do not collect data about your GPS location. Neither do we collect data about your WiFi or mobile network.'

Informal platforms (e.g. Telegram) to clarify doubts, get feedback



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International discussions



The screenshot shows a BBC News article titled 'Coronavirus contact-tracing: World split between two types of app'. The article is categorized under 'Tech' and 'News'. The BBC logo and navigation links are visible at the top.



The screenshot shows a blue box with white text: 'Contact tracing: to centralise or not to centralise, that is the question'. Below this, it says '30 April 2020' and 'An Ada Lovelace Institute virtual event: Friday 1 May, 13.00-13.45 (BST)'.

| | | | | | | | | |
|-----------|---------------------------------|--|---|---|---|---|---|-------------------------|
| Singapore | Trace Together | TraceTogether was the first major Bluetooth contact tracing app. | ★ | ★ | ★ | ★ | ★ | Bluetooth, BlueTrace |
| Iceland | Rakning C-19 | Iceland decided not to use Bluetooth because it was too unreliable and instead uses location data. | ★ | ★ | ★ | ★ | ★ | Location |
| France | StopCovid | Like the UK and Norway, France negotiated with Apple and Google but decided against using their standards. | ★ | ☆ | ★ | ★ | ★ | Bluetooth |
| Germany | Corona-Warn-App | Germany opted for the Google/Apple API after initially aiming to build a centralized system. | ★ | ☆ | ★ | ★ | ★ | Bluetooth, Google/Apple |

<https://www.technologyreview.com/2020/05/07/1000961/launching-mittre-covid-tracing-tracker/>
(Last updated: 30 Jul 2020)

◆ LAUNCH, AND CREATE CONVERSATIONS

Responsible tech pushes for certain standards for how the tech is used.

Standards vary. Your yardstick for 'responsible' is different from mine.

Awareness and conversations allow users to explore what's 'responsible' to them.





*"I won't use it.
No matter what."*



*"I won't use it.
No matter what."*

3

**Invest in things that could help
to build trust**



◆ INVEST IN THINGS THAT COULD HELP TO BUILD TRUST

number. If you google bluetooth, you will realize it is also a short ranged signal which cannot allow the government to track you, unlike wifi. If you believe the government is using this for a nefarious ends, then you should also be wary of 3g, 4g and wifi as well. It does not make sense to be afraid of this app and yet continue to use networks!

[OC] I extracted my own TraceTogether data from my phone to analyze how many close or transient contacts I've had over 1 week

Discussion



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privacy. It always starts with, tracking movements, before the app could get more invasive, like taking control of your cameras and audio.

Say hypothetically, during contact tracing, they realise that one of the infected happens to stay next door to someone who was radicalised and is planning to blow up Istana. Would you let them use the Trace Together data?


What about using it for political purposes?

Oh, and sure, they say they won't use your data unnecessarily. But this is the Government, which decides what is "necessary". PDPA doesn't apply to them.

INVEST IN THINGS THAT COULD HELP TO BUILD TRUST

120 Why lumihealth need to know so many stuff?

Question



13:57

MyInfo

MyInfo retrieves personal data from relevant government agencies to pre-fill the relevant fields, making digital transactions faster and more convenient.

This digital service is requesting the following information from MyInfo, for the purpose of authentication

- > Email
- > Date of Birth
- > Sex
- > Dialect
- > Mobile Number
- > Registered Address
- > Occupation
- > Employment Sector
- > Marital Status
- > Children Birth Records - Sex
- > Children Birth Records - Date of Birth
- > Sponsored Children Records - Sex
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“I just won't trust you”

privacy. It always starts with, tracking movements, before the app could get more invasive, like taking control of your cameras and audio.

Say hypothetically, during contact tracing, they realise that one of the infected happens to stay next door to [redacted] as radicalised and is planning to blow up Istana. Would you let them use the Trace Together data?

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How does trust (between government and citizens) look like?



I USED TO THINK TRUST IS

“I’ll go with what you decide”



NOW, TRUST IS STARTING TO LOOK LIKE

*“I’m willing to tell you when I
have a different view,
and I’m willing to be wrong or
have my position changed”*

◆ INVEST IN THINGS THAT COULD HELP TO BUILD TRUST



IF TRUST IS

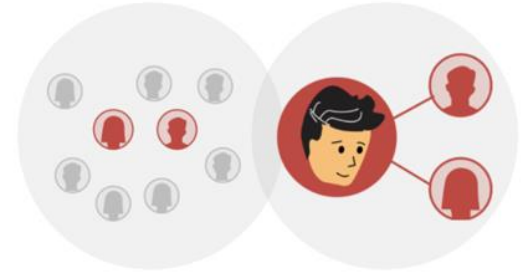
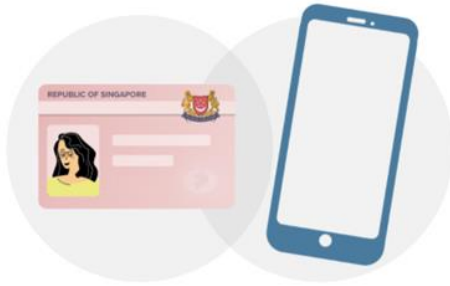
“I’m willing to tell you when I have a different view, and I’m willing to be wrong or have my position changed”

TO BUILD TRUST,

We got to build the skills to have these difficult and honest conversations, at national level.

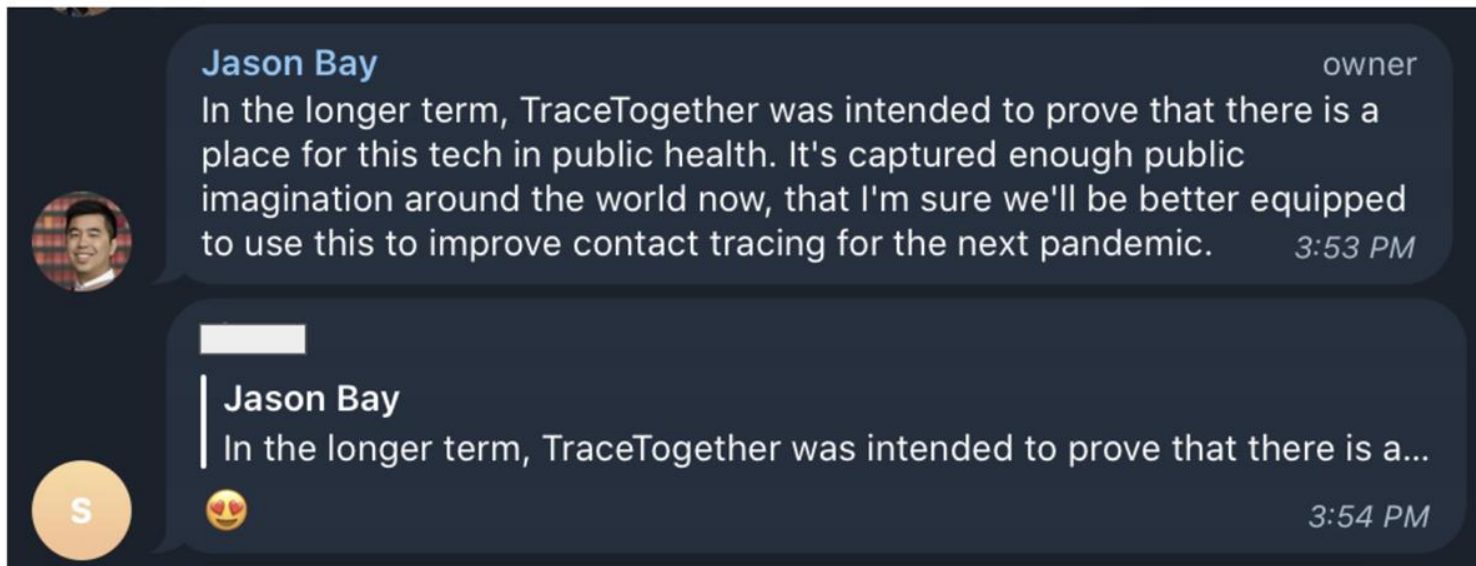
(instead of leaving them in online forums and watercooler chats)

◆ INVEST IN THINGS THAT COULD HELP TO BUILD TRUST



**We're going to face many dilemmas where there's no right or wrong,
only what we agree on.**

◆ CLOSING



thank you! 🙏

credits:

tracetogether team — for the thick and thin ❤️
gloria, kia hwee — without whom these reflections wouldn't have begun
enrico — the master behind tracetogether and safeentry's og illustrations

<https://go.gov.sg/tt-rt>



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