Te Tari Taiwhenua
Internal Affairs

Government Digital Services briefing

Hon Kris Faafoi - Minister for Government Digital Services

Title:	**Draft Cabinet paper: The potential for Bluetooth solutions to improve contract tracing in New Zealand**
Date:	11 June 2020

Key issues

On 20 April 2020 Cabinet directed officials (GCDO and Ministry of Health) to provide a report back on the assessment of two Bluetooth technology options to assist COVID-19 contact tracing.

The current draft Cabinet paper recommends that no Bluetooth option be implemented at this time and provides the following potential options for Cabinet to consider:

- continue monitoring the developments in Bluetooth technology;
- continue monitoring and investigate CovidCard through a large-scale trial;
- work on a national rollout of the CovidCard which would include a trial and policy work on deployment options; or,
- stop work on Bluetooth solutions.

Officials have also received substantial feedback from the National Crisis Management Centre (NCMC) and the Ministry of Health regarding the CovidCard report drafted by the COVID-19 Public Private Partnerships (PPP) group.

We will discuss the PPP Report, the current preferred option in the Cabinet Paper and next steps at the GDS Officials' meeting on 15 June 2020.

Action sought	Timeframe
Note the contents of the draft Cabinet paper ahead of discussing at the next officials meeting on 15 June 2020	Before 15 June 2020

Contact for telephone discussions (if required)

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Purpose

1. This briefing seeks your feedback ahead of potential Ministerial, coalition, and support party consultation in respect of the attached draft Cabinet paper: *The potential for Bluetooth solutions to improve contact tracing in New Zealand* (attached as **Appendix A**).

Background

2. The draft Cabinet paper is the report back on the assessment of Bluetooth technologies for COVID-19 contact tracing, as agreed by Cabinet on 20 April 2020 [CAB-20-MIN-0175 refers]. The paper provides an overview of the Bluetooth technologies and recommends continuing to assess the technologies, rather than implement them at this stage.

3. On 29 May 2020 officials briefed you on the results of the initial tests of the CovidCard (the cards) conducted by the Public Private Partnership group (PPP). Officials recommended that a larger trial of the cards be determined by Cabinet in conjunction with whether further investigation of the cards is desired.

4. The PPP have provided officials with their report on the feasibility of the cards for contact tracing in New Zealand (attached as **Appendix B**). These findings are based on a small-scale field trial at Nelson Hospital and extensive product development testing in Waikato. This report was considered in the assessment of Bluetooth technologies.

5. The initial proposed timeline was to lodge a final version of the draft Cabinet paper on 18 June 2020 for consideration by the Cabinet Social Wellbeing Committee on 24 June 2020. We will discuss this timing with you at the officials' meeting on 15 June 2020.

Summary of the Cabinet paper

Technology can support contact tracing

6. Contact tracing, along with other public health measures, is one of the most effective ways to contain COVID-19 without a vaccine. While there are currently no active cases of COVID-19 in the country, it is inevitable that New Zealand will have active cases as the border reopens.

7. Contact tracing is a manual process carried out by experienced investigators. Although technology can support this process, it can also provide false positives (showing someone as a close contact when they are not) and false negatives (not capturing a close contact). People are needed to identify false positives and negatives through manual contact tracing processes.

8. Technology can complement contact tracing by speeding up the process, filling in memory gaps, and identifying strangers as close contacts. It also allows contact tracers to collect information more rapidly, which can improve the chances of self-isolating potential cases of COVID-19 quickly.

9. The Government has already deployed technology to assist contact tracing for COVID-19. On 20 May 2020 the Ministry of Health launched an app, NZ COVID Tracer, which includes the ability for people to scan Quick Response (QR) codes.

10. Officials have assessed two Bluetooth options to assist with contact tracing:

10.1   Bluetooth-enabled cards; and

10.2   Bluetooth functionality for the NZ COVID Tracer app.

Bluetooth technology could improve contact tracing, but it has limitations

11.   Bluetooth is a widely used wireless technology that is used to exchange data between devices over a short distance. In this context, Bluetooth would be used to share information between devices (phones or cards) to create a secure log of someone's close contacts. This log can be used for contact tracing if someone tests positive.

12.   This technology has limitations for contact tracing, such as its ability to accurately determine measures of distance. This could lead to a Bluetooth solution falsely recording another person as a close contact (false positive) or not recording a person as a close contact (false negative).

13.   The uptake and correct use of this technology is crucial to its success. The usefulness of the technology increases as more people use it. Available evidence says that an adoption rate of between 60 percent and 80 percent would see the greatest returns, although a solution with a lower adoption rate may still provide some protection.

NZ COVID Tracer app Bluetooth functionality

14.   Bluetooth functionality through the NZ COVID Tracer app would mean that a phone with the app installed would record the unique anonymous identifier (ID) of any other phone it came into contact with. This ID would be matched with the contact information provided and shared with contact tracers. Contact tracers would then contact close contacts of a confirmed COVID-19 case.

15.   Bluetooth app functionality has two possible designs:

15.1   **Centralised** – If someone tests positive, their anonymous ID and the IDs of the person's close contacts are uploaded to a central database. The IDs from the phone are matched with those on the database and people are contacted; and

15.2   **Decentralised** – If someone tests positive only their anonymous ID is uploaded to the database. Phones with the app would download the database each day and, if a positive case ID matches with one of the close contacts stored on the phone, it sends an alert notifying the owner that they have been in contact with someone who has tested positive.

16.   Singapore's TraceTogether app, and Australia's CovidSafe app are centralised apps. So far, these apps have not had the required adoption rates to enable effective contact tracing. There have also been technical issues with the Apple iOS version of the app which has limited its effectiveness.

17.   Apple and Google's Exposure Application Programming Interface (API) is an example of a decentralised app. This would mean that an app should work well on both Apple and Google mobile devices. Various countries are developing apps using this API. However, as none of these apps have been released yet, it has not been possible to determine how well it would function.

Bluetooth-enabled cards

18. The other Bluetooth option being assessed is a Bluetooth-enabled card. This would be a card attached to lanyard and worn around the neck. Its functionality is similar to the app solution, but it does not require a mobile device, making it accessible to everyone.

19. The PPP has carried out product development testing on the cards in New Zealand and outline in their final report confidence that these would work. However, questions remain regarding how well the card would perform on a larger scale.

20. The card would require a high adoption rate by New Zealanders to be effective. The PPP estimate that the adoption rate would have to be 80%. They suggest the cards may need to be mandated by the Government to ensure this adoption rate is met. This would create some significant human rights, privacy, and Tiriti o Waitangi challenges which would need to be considered and resolved.

21. The cards would likely cost $98.5 million to manufacture, publicise, and distribute. Key drawbacks are:

    21.1 long lead in time - it would take 5-6 months to make and distribute the cards;

    21.2 unproven - there has been some limited testing but no large-scale trial of feasibility; and

    21.3 limited lifespan – the cards would only work for one year (could be extended to two years, at an extra cost of $64 million).

PPP report on the feasibility of the CovidCard for contact tracing

22. Attached as Appendix B is the report the PPP has produced on the CovidCard. This report details the findings from the card trial and testing makes recommendations on the implementation of the cards to accelerate contact tracing.

23. The report states that a limited rollout, such as only to high-risk workplaces, would not be effective. With the cards needing to be implemented nation-wide to be effective.

24. Officials are uncertain of the benefits outlined in the report, as they depend on many factors, including making the cards mandatory, and significant changes to the public health contact tracing system. However, we consider that the card, or a combination of a card and an app, does have some potential.

The draft Cabinet paper recommends monitoring developments with Bluetooth solutions

25. As officials cannot determine the effectiveness of Bluetooth solutions currently, we recommend that we continue to monitor the developments of this technology, rather than implement them right now. This would give officials more time to assess how effective this technology could be for contact tracing.

26. The draft Cabinet paper suggests four options to implementing these technologies:

    26.1 **Continue to monitor –** no Bluetooth technologies are deployed but officials continue to and monitoring Bluetooth technology for contact tracing overseas and in New Zealand; or

26.2 **Continue to monitor and investigate CovidCard –** Continue monitoring developments in Bluetooth technology while also investigating the CovidCard further. This would include a larger-scale test; or

26.3 **Work on a national rollout of the CovidCard** – work towards implementing the CovidCard national-wide. This would include conducting a larger trial as soon as feasible, as well as policy work on deployment options; or

26.4 **Stop work on Bluetooth solutions** – work on assessing Bluetooth solutions stops.

Officials will report back to Cabinet if there is a case for deploying a Bluetooth solution

27. Depending on the option agreed by Cabinet, officials would report back to Cabinet in the case of a significant development that warrants reconsidering a Bluetooth option for implementation. For example, if there is another COVID-19 outbreak.

28. Officials propose that the Minister of Finance, Minister of Internal Affairs, Minister of Health, Minister of Justice, and the Minister for Government Digital Services continue to oversee the work on Bluetooth technologies, including making decisions on further trials of the cards.

Next steps

29. Officials will discuss the feedback received from other agencies as well as timeframes with you at the next officials meeting on Monday 15 June 2020.

Recommendations

30. We recommend that you:

   a) **note** the attached draft Cabinet paper meets the requirement to report back to Cabinet on assessment of two Bluetooth technology options to assist COVID-19 contact tracing in New Zealand;

   b) **note** the PPP has presented their report on the feasibility of the CovidCard;

   c) **note** officials are continuing to refine the Cabinet paper following Departmental consultation; and

   d) **note** we will discuss the draft Cabinet paper, PPP report and next steps at the officials meeting on 15 June 2020.   **Yes/No**

Michael Woodside
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Hon Kris Faafoi
Minister for Government Digital Services
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Appendix A: Draft Cabinet paper: *The potential for Bluetooth solutions to improve contact tracing in New Zealand*

Appendix B: PPP Report: Sustaining elimination with CovidCard and enhance digital contact tracing