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**Panel on Information Technology and Broadcasting**

**Meeting on 12 July 2021**

**Background brief on  
the application of information technology to combat COVID-19**

**Purpose**

This paper provides background information on the application of information technology ("IT") to combat Coronavirus Disease 2019 ("COVID-19"). It also provides a summary of views and concerns expressed by members of the Panel on Information Technology and Broadcasting ("the Panel") during previous discussion on the subject.

**Background**

2. Since the outbreak of the COVID-19 epidemic, the Government has endeavoured to make use of information and communications technologies to assist the public in the prevention from and fight against the epidemic. The relevant initiatives are set out below.

Support mandatory home quarantine

3. To tie in with the mandatory home quarantine measures implemented in early February 2020 to prevent inbound travellers from outside Hong Kong spreading the virus in the community, the Administration has developed the "StayHomeSafe" system and electronic wristbands, which can effectively monitor whether a large number of persons under quarantine are staying at designated dwelling places while protecting their personal privacy. The system makes use of a Bluetooth Low Energy electronic wristband and a monitoring solution developed by a local research and development centre, complementing with the "StayHomeSafe" mobile app that adopts geo-fencing technology to detect electronic signals, including mobile communications, Wi-Fi and

Bluetooth signals of electronic wristbands etc., around the dwelling places of persons under quarantine, and by means of artificial intelligence to analyze changes in various signal strength to monitor whether persons under quarantine are staying at their designated dwelling places.

#### COVID-19 Dashboard

4. To facilitate more comprehensive understanding of the latest situation of the COVID-19 epidemic by the public, the Government and the industry collaborated and, with the use of relevant open data, launched the "Interactive Map Dashboard on the Latest Situation of Coronavirus Disease in Hong Kong" ("the Dashboard") in early February 2020. Since its launch, the Dashboard has been continuously enhanced to include more information, including details of probable and confirmed cases, buildings in which such cases have resided/visited, flights/trains taken by confirmed cases, collection points for submission of specimen, statistics on testing etc.

5. In addition, the datasets under the Dashboard are made available via the Office of the Government Chief Information Officer ("OGCIO")'s Public Service Information portal in machine-readable formats for free use by the public. With the Application Programming Interfaces provided by OGCIO, the industry and other interested parties can make use of such data conveniently to conduct further analysis and develop other websites and programmes/mobile applications ("apps").

#### "LeaveHomeSafe" mobile application

6. The Government launched the "LeaveHomeSafe" mobile app in November 2020 to provide members of the public with a convenient digital tool that helps them form a habit of recording the time of their visits to different venues and taxi rides during the epidemic. The mobile app will notify a user if he or she is later identified to have visited the same venue that a confirmed patient has visited at about the same time or taken the same taxi that a confirmed patient has taken on the same day. In the unfortunate event of infection, the user's visit records can also assist the Centre for Health Protection ("CHP") in epidemiological investigations.

7. OGCIO announced on 1 June 2021 that a new function has been added to the "LeaveHomeSafe" mobile app, allowing the public to store their COVID-19 vaccination records (electronic vaccination records) or electronic testing records in the app to facilitate easy display of the records when necessary. As advised by the Administration, the "LeaveHomeSafe" mobile app does not require registration for use and does not have a tracking function. As with users' check-in data, the electronic vaccination records saved in the mobile app

via the new function will not be uploaded or transferred to the Government or any other systems. All information will only be saved in users' mobile phones. Users can replace or remove the electronic vaccination or testing records from the mobile app anytime. OGCIO has consulted the Privacy Commissioner for Personal Data regarding the implementation of the new function in the "LeaveHomeSafe" mobile app to ensure its compliance with the Personal Data (Privacy) Ordinance.

### Universal Community Testing Programme

8. OGCIO had put in place a number of IT systems to facilitate efficient execution of the Universal Community Testing Programme launched on 1 September 2020. They include an online appointment booking system and a registration system to enable speedy registration at the Community Testing Centres to reduce bunching of people at registration counters. Through integration with the Laboratory Test System which records the testing results uploaded by laboratories, the testing results will be made available to participants, mostly within 72 hours. All personal information in the booking and registration systems will not be passed onto the laboratories, thereby fully protecting the personal privacy of programme participants.

### Health code system

9. OGCIO has worked together with the Department of Health ("DH") to develop the Hong Kong Health Code system. The system leverages blockchain technology for the secured exchange of health codes upon the consent of applicants. It will enable recognized testing institutions in Hong Kong to upload valid nucleic acid testing results of persons eligible for exemption from compulsory quarantine. Eligible persons who need to travel to Guangdong or Macao can download their nucleic testing results through the Hong Kong Health Code system for conversion to the health code systems of Guangdong or Macao (i.e. the "Yue Kang Code" or "Macao Health Code") for health declaration purpose when entering Guangdong or Macao. Eligible persons arriving at Hong Kong from Guangdong or Macao can also choose to use the code conversion function on the "Yue Kang Code" and "Macao Health Code" systems to directly convert their valid nucleic acid testing results for use on the electronic Health Declaration Form platform of Hong Kong for their entry.

### Return2hk Scheme

10. Starting from 23 November 2020, Hong Kong residents in Guangdong Province or Macao who fulfil specified conditions could be exempted from the 14-day compulsory quarantine requirement when they return to Hong Kong under the "Return2hk Scheme". For completion of the electronic health

declaration, residents returning to Hong Kong could transmit their valid negative nucleic acid test result to the electronic health declaration system of DH through "Yuekang Code" or "Macao Health Code".

## **Previous discussion**

11. At the Panel meeting held on 9 November 2020, the Administration briefed members on the application of IT in combating COVID-2019. The major views and concerns expressed by members are summarized in the ensuing paragraphs.

### "LeaveHomeSafe" mobile application

12. Some members considered that the "LeaveHomeSafe" app would help trace asymptomatic travellers of COVID-19, and suggested that inbound travellers from high-risk places, particularly those that were subject to 14-day compulsory quarantine at hotels upon entry, should be required to download the "LeaveHomeSafe" mobile app with a view to recording their whereabouts after completion of the compulsory quarantine at hotels. Some members queried the effectiveness of the "LeaveHomeSafe" mobile app and whether the app would have a low utilization rate if participation by venue operators and individuals were entirely voluntary. Members pointed out that the public was most concerned whether the Administration could effectively combat the COVID-19 pandemic in a bid to achieve zero infection level so that cross-boundary travel could be resumed and the economy could restart. They also commented that the Administration should consider introducing compulsory infection control measures to combat the next wave of the epidemic so that the economy could recover.

13. The Administration advised that it would continue with anti-epidemic efforts to suppress the epidemic. For example, OGCIO launched the "LeaveHomeSafe" mobile app to encourage the public to keep a more precise visit record so as to help contact tracing. Meanwhile, the Administration had been actively engaging various sectors and enlisting their support for the "LeaveHomeSafe" mobile app.

14. Some members held the view that taking public transport would expose a person/passenger to higher health risks, and they queried why the Administration had proposed to display the venue QR codes at markets and libraries but not public transport. They also asked about the criteria for selecting venues for displaying the QR codes.

15. The Administration explained that the implementation of "LeaveHomeSafe" mobile app should cover premises where a large number of people were congregating and in close distance with each other, or where activities were conducted with people/participants taking off their masks. To encourage wider participation of the private sector in the scheme, the Administration would start with the public sector and display venue QR codes at public places, such as markets and indoor venues. As for public transport where most passengers were already wearing masks, DH considered that there would not be significant risk of spreading the virus.

16. Noting that visit records collected by the "LeaveHomeSafe" mobile app would be kept in users' mobile phones only and removed automatically after 31 days, some members queried if other government departments could obtain such data within the 31-day period. They also asked whether the Administration would set out in the terms of use of the "LeaveHomeSafe" mobile app that all the recorded data would only be used for assisting DH in relevant contact tracing so as to allay public concerns towards the protection of user's privacy.

17. The Administration assured members that the relevant venue check-in data would only be kept in the app inside the user's mobile phone. The data would not be transferred to the Government's repository or any other systems. Meanwhile, user's check-in data would be erased automatically after 31 days and therefore no data would be kept by other departments. CHP had been releasing information on premises visited by people/patients with COVID-19 confirmed cases in the form of open data. The "LeaveHomeSafe" mobile app would download the data from CHP for comparing with user's venue check-in data regularly inside the mobile phone, in order to notify any user who had visited the same venue as the COVID-19 confirmed case at around the same time automatically.

18. In response to some members' enquires on whether the source code of the "LeaveHomeSafe" app would be made public, the Administration advised that the "LeaveHomeSafe" mobile app had undergone privacy impact assessment conducted by an independent third party. The fact that the mobile app was available for public download in the Apple Store and Google Play meant it had passed the review of the two app stores and that they met the relevant user privacy requirements.

#### Compulsory quarantine arrangements and the use of electronic wristbands

19. Some members considered that there were flaws in the quarantine arrangements. For example, if a person under compulsory quarantine did not activate the "StayHomeSafe" mobile app immediately upon arrival at the Hong

Kong International Airport ("HKIA"), it might delay the activation of the mobile app and the authorities would have difficulties in tracing the location of a person under compulsory quarantine.

20. The Administration explained that the activation of "StayHomeSafe" app involved two steps. All inbound travellers were required to put on an electronic wristband and install the "StayHomeSafe" mobile app at HKIA. To allow "StayHomeSafe" app to collect the wireless signals of the location, confinees were required to walk around their dwelling places after returning home. Generally speaking, nearly 99% of persons under compulsory quarantine had activated "StayHomeSafe" mobile app within one day after returning home. OGCIO would offer appropriate assistance to those who had not activated the mobile app and would report to DH and Police for suspected cases where the quarantine conditions were suspected to have been breached.

21. Despite the fact that inbound travellers were required to present negative nucleic acid test results for COVID-19 before entering Hong Kong, and to undertake testing for COVID-19 upon entry, some members expressed concerns about the risk of transmission in the community before inbound travellers had arrived at the hotel or a designated place where they underwent the compulsory quarantine. Members questioned whether and, if so, how the Administration would make use of technologies to reinforce contact tracing measures.

22. The Administration said that it had adopted a multi-pronged approach to contain the spread of the disease. All persons would be required to undergo testing for COVID-19 upon their arrival at HKIA and wait for their test results at a designated location, such as a holding hotel. Only with negative test results would they be allowed to leave HKIA/holding hotel and return home or other residences as soon as possible to undergo the compulsory quarantine.

#### "Hong Kong Health Code" system

23. Some members called on the Administration to expedite the launch of the "Hong Kong Health Code" system. Some members pointed out that there were public concerns over potential privacy issues, such as whether the Health Code would be used for accessing to certain venues in the Mainland, including shopping arcades, markets and restaurants. They queried whether the Health Code system was in fact a means to restrict people's freedom in Hong Kong.

24. The Administration responded that the "Hong Kong Health Code" was prepared solely for the purpose of facilitating movement of people across the boundary, while "LeaveHomeSafe" exposure notification mobile app would be for voluntary adoption to help combat the COVID-19 epidemic.

### **Questions raised at Council meetings**

25. Members have raised questions relating to health codes and the application of technologies in combating epidemics, including the "LeaveHomeSafe" mobile app, at various Council meetings. Details of the questions and the Administration's replies are given in the hyperlinks in the **Appendix**.

### **Latest position**

26. The Administration will brief the Panel on 12 July 2021 on the latest progress and development of the application of IT to combat COVID-19.

### **Relevant papers**

27. A list of the relevant papers is set out in the **Appendix**.

Council Business Division 1  
Legislative Council Secretariat  
6 July 2021

## Appendix

### List of relevant papers

Committee/ Legislative Council meetings	Date of meeting	Papers
Panel on Information Technology and Broadcasting	9 November 2020	Administration's paper on application of information technology to combat COVID-19 <a href="#">LC Paper No. CB(1)97/20-21(02)</a>  Minutes of meeting <a href="#">LC Paper No. CB(1)406/20-21</a>
Council	3 June 2020	<a href="#">Question 11 - Application of technology in efforts to combat COVID-19 pandemic</a>
	24 June 2020	<a href="#">Question 2 - Mutual recognition system for health codes of Guangdong, Hong Kong and Macao</a>
	15 July 2020	<a href="#">Question 12 - "New normal" of co-existence with virus</a>
	18 November 2020	<a href="#">Question 5 - "LeaveHomeSafe" mobile application</a>
	16 December 2020	<a href="#">Question 8 - "LeaveHomeSafe" mobile application</a>
	6 January 2021	<a href="#">Question 3 - "LeaveHomeSafe" mobile application</a>
	20 January 2021	<a href="#">Question 1 - Making good use of technologies to prevent and combat epidemics</a>