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**Panel on Information Technology and Broadcasting**

**Meeting on 8 June 2020**

**Updated background brief on e-Government development and  
iAM smart platform**

**Purpose**

This paper provides updated background information on the development of e-Government services and iAM smart platform. It also summarizes the major views and concerns expressed by Members in previous discussions on the subject.

**Background**

2. In the 2017 Policy Address, the Chief Executive announced that the Administration would implement a number of key infrastructure projects to support the development of smart city in Hong Kong. Some of the projects are relevant to the development of e-Government. These include provision of electronic identity ("eID"), which is officially named as "iAM Smart" platform, for Hong Kong residents, and the implementation of the Next Generation Government Cloud Infrastructure ("GovCloud") equipped with a new Application Architecture.<sup>1</sup> Meanwhile, the Administration has adopted measures and initiatives to enhance e-Government services, and to support government bureaux/departments ("B/Ds") in achieving their policy objectives through wider and better adoption of information technology ("IT"). These measures are presented in the ensuing paragraphs.

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<sup>1</sup> On 11 May 2018, Finance Committee approved the creation of a commitment of \$112.0 million for implementing a one-stop online system for the provision of electronic identity, and a commitment of \$533.3 million for implementing the Next Generation Government Cloud Infrastructure and big data analytics platform.

## Providing the public with more convenient services

### *Opening up government data*

3. The Administration announced an open data policy in October 2018 to drive B/Ds and encourage public and private organizations to open up more data in machine-readable formats via the Public Sector Information ("PSI") portal for free use by the public. A city dashboard function has been added to the PSI portal by end-2019 to facilitate the public to understand city-related open data.

### *Using mobile communications devices*

4. At present, GovHK has adopted a responsive design, facilitating the public in browsing the portal and using the searching and transactional functions provided on the websites with various devices, including tablets and smartphones. To further enhance the user experience of e-Government services, the Office of the Government Chief Information Officer ("OGCIO") has requested B/Ds to adopt mobile-friendly design in developing new e-Government services and update all websites by end-2020.

### *"iAM Smart" platform*

5. The Administration will launch the "iAM Smart" platform in the fourth quarter of 2020 to provide one-stop personalized digital government services. Over 20 online services (including the application for Home Ownership Scheme, eTAX, renewal of full driving licence, registration for employment services by job-seekers, etc.) will be provided upon commissioning of the platform. In addition, the platform will provide other personalized digital services, such as "e-ME"<sup>2</sup> for default form-filling for basic information as well as receiving personalized notifications like outbound travel information, payment of eRVD bills<sup>3</sup> renewal of vehicle licences, etc.

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<sup>2</sup> Users of electronic identity may set up e-ME accounts which store their personal data such as name, gender, Hong Kong identity card number, date of birth, residential address, contact telephone number, etc. Users may then complete Government e-forms using the data stored in their e-ME accounts without having to provide the personal information again.

<sup>3</sup> The eRVD Bill was launched by the Rating and Valuation Department in December 2010 to provide a convenient, efficient service and to reduce paper consumption. The eRVD Bill allows the public to receive the quarterly demands for rates and/or Government rent via the Internet in advance of the paper bills.

### *Electronic payment*

6. Online and electronic payment is another essential component of e-Government services. At present, the Administration provides various online payment services to facilitate payment of government bills and fees by the public with credit card, PPS, e-cheque and e-wallet, including Apple Pay and Google Pay. Besides, the Administration adopts the Faster Payment System and common QR codes launched by the Hong Kong Monetary Authority to facilitate the public to settle payments of tax, rates and water charges. The public can scan the QR codes on the bills via different mobile banking applications ("apps") and e-wallets to make payment easily and conveniently.

### Building digital infrastructure

#### *Next generation government cloud infrastructure*

7. OGCIO is establishing GovCloud to enable B/Ds to share resources, expedite system development and enhance operational efficiency so as to cope with the growing demand for digital public services. GovCloud is expected to come into operation in the third quarter of 2020. B/Ds have to adopt GovCloud services when developing new e-Government services or improving existing ones, unless with justifiable reasons. According to the Administration, GovCloud would adopt a hybrid cloud design, which was made up of "In-house Private Cloud", "Outsourced Private Cloud", and "Public Clouds" with certain level of security features. Its system hosting capacity could be expanded to meet the growing demand of the public for digital public services.

#### *Centrally managed messaging platform and electronic recordkeeping system*

8. OGCIO is developing a new Centrally Managed Messaging Platform ("CMMP") to replace the current decentralized email systems progressively from the third quarter of 2019 in order to enhance the ability in tackling increasing cyber security risks, utilize computing resources optimally and enhance operational efficiency. CMMP would support instant messaging to increase efficiency to meet business needs. Moreover, individual B/Ds have implemented the Electronic Recordkeeping System ("ERKS") to store and access records electronically, thereby strengthening the security control of records, reducing the risk of record loss and enhancing efficiency of record search. On 20 April 2020, the Administration sought the Panel on Information Technology and Broadcasting ("the Panel")'s support for the full implementation of ERKS across the Government. The Panel supported in principle the funding proposal.

## Applying new technologies

### *Smart Government Innovation Lab*

9. To tie in with the pro-innovation government procurement policy and facilitate the development of innovation and technology, OGCI, in promoting "Smart Government", established the Smart Government Innovation Lab ("Smart Lab") in April 2019 to facilitate the industry, in particular local start-ups as well as small and medium enterprises, to provide B/Ds with IT solutions that cater to B/Ds' service needs. OGCI has shared on the thematic website of the Smart Lab the challenges faced by B/Ds in providing various public services, and has invited the industry to submit technical solutions and product suggestions for addressing such challenges. OGCI has also organized technical forums quarterly in collaboration with Cyberport and Hong Kong Science Park for industry players to share with B/Ds their innovative technologies and solutions as well as success stories, and how such technologies can be applied to improve public services.

### *Multi-functional smart lampposts*

10. The original plan of the multi-functional smart lampposts pilot scheme is to install some 400 multi-functional smart lampposts equipped with smart devices in four selected urban locations (namely Central/Admiralty, Causeway Bay/Wan Chai, Tsim Sha Tsui and Kwun Tong/Kai Tak Development Area) in phases to collect real-time city data such as air quality, traffic flow, etc. and support fifth generation ("5G") mobile network development. The pilot scheme started in 2019 and 50 smart lampposts were installed along Sheung Yuet Road in Kowloon Bay, Shing Kai Road in Kai Tak and in the Kwun Tong town centre by end-June 2019.

11. OGCI established the Smart Lampposts Technical Advisory Ad Hoc Committee ("Ad Hoc Committee") in August 2019 to review the privacy protection technologies and measures of relevant applications. After reviewing the design and operation of smart lampposts as well as the functions and technologies employed in the applications, the Ad Hoc Committee submitted the report to the Government on 9 March 2020. The Administration will decide the way forward having regard to the views and recommendations of the Ad Hoc Committee.

### *Artificial intelligence and big data analytics platform*

12. OGCI is implementing the big data analytics platform, providing big data analytics and artificial intelligence ("AI") cognitive tools, parallel computing management system and a "Digital Highway" which will facilitate

B/Ds' transmission and sharing of real-time data (such as traffic, weather and environment data) and conduct big data analytics so as to adopt a data-driven approach in policy making and service delivery for raising government operational efficiency and improving city management. The Administration has informed the Panel that the big data analytics platform will come into operation in the third quarter of 2020.

13. OGCIO has introduced chatbot functions to the GovHK portal to facilitate search and use of e-Government services by the public. OGCIO also has piloted the use of chatbot in 1823 public enquiry services.

#### *Pilot blockchain project*

14. OGCIO launched a pilot project on application of blockchain technology at end-2018 to explore the applicability, benefits and limitations of adopting blockchain technology in government services. OGCIO has discussed with four departments to jointly implement pilot projects, among which Intellectual Property Department will apply blockchain technology in the transfer of registered trademarks, so as to facilitate the receipt and access of relevant information by concerned parties. Companies Registry, Environmental Protection Department and Department of Health will also progressively implement pilot blockchain projects that are conducive to their businesses.

#### **Previous discussions**

15. The Administration consulted the Panel on the funding proposals for implementing three key infrastructure projects in connection with the smart city development at the meeting on 12 March 2018. Panel members supported the funding proposals. Relevant issues were also discussed at the Finance Committee meeting on 11 May 2018. During the 2018-2019 session, the Panel continued to discuss with the Administration on the development of e-Government services, including the implementation of eID. The major views and concerns expressed by Members are summarized in the ensuing paragraphs.

#### Next generation government cloud infrastructure and big data analytics platform

16. Some Members commented that the progress of upgrading IT systems of B/Ds was unsatisfactory over the years. They hoped that with the implementation of GovCloud, the Administration would not have to seek funding frequently to upgrade their computer systems. Some Members enquired about the amount of savings that could be achieved by implementing the proposed project.

17. Some Members commented that the utilization of the Government cloud was low. They enquired about how the Administration would promote the use of GovCloud so as to expedite the development and delivery of digital government services.

18. The Administration advised that GovCloud would enable user departments to operate their systems at a lower cost. They could upgrade their system hosting capacity flexibly according to operational needs. The time for procuring and installing the required resources would also be reduced substantially. Moreover, GovCloud would provide 24-hour monitoring and support services, so that B/Ds could provide digital government services more efficiently and securely to meet the development needs of a smart government. It should be attractive for B/Ds to use the new GovCloud platform. The Administration added that the GovCloud platform could bring about savings of about \$570 million from 2019-2020 to 2024-2025.

19. Members had queried whether all B/Ds would make use of the platform. The Administration advised that B/Ds were encouraged to use GovCloud when developing new systems or revamping existing systems wherever possible. The 260 e-Government services and application systems currently running on the existing cloud platforms would be progressively migrated to the new platform when it came into operation in the third quarter of 2020.

#### Application of big data in promoting tourism

20. Some Members asked if the Administration would apply chatbot technology in museums, tourist hotspots and other public facilities to increase interactivity and enhance visitors' experience. They also asked if the Administration would provide more real-time transport information at bus stops. The Administration advised that consideration was being given to the application of big data, AI and chatbot technologies in promoting tourism in Hong Kong. The Administration would introduce measures and provide resources for the provision of real-time bus traffic information at bus stops over the territory.

#### Electronic identity

##### *Private sector participation in the development of electronic identity system*

21. Members pointed out that the IT industry was concerned about the opportunities for local companies to participate in the development of major information technology infrastructure projects. They queried when and how the Administration would engage private organizations to participate in the

development of Application Programming Interfaces ("APIs") related to the use of eID, and whether fees would be charged for their use by private organizations.

22. The Administration advised that APIs and relevant technical information would be provided to interested public organizations and private companies for their adoption in their online services as appropriate. Whilst the Administration expected that more private organizations would make use of eID, any organization adopting eID would be required to comply with the information security and related technical requirements as set out in the terms of use of eID. As the development of APIs involved significant public resources, the Administration would consider whether fees would be charged for the use of APIs by private organizations.

23. Some Members asked if eID would be used in financial applications such as know-your-customers ("KYC") utilities to enable more effective compliance with regulatory requirements by financial institutions. The Administration said that detailed arrangements were being considered in collaboration with the relevant stakeholders/regulators in the development of APIs and KYC utility applications.

#### *Registering and using electronic identity*

24. Members expressed concern that, by mid-2020 when the eID system was in operation, many people might still not have received their new smart identity cards ("ID cards") with holders' biometric information that was needed for using the eID system. Some Members asked whether residents could register their eIDs with older mobile phones or computers.

25. The Administration clarified that each eID was a digital identity and either new or existing smart ID cards could be used with eID for registration and usage of online services. Members of the public could still access online services using conventional methods even if they were not able to obtain an eID. The public could register their eIDs using tablets and other mobile devices. The Administration would try to make the eID registration and operation platforms compatible with different models of mobile devices in use as far as possible.

#### *Scope and range of government services that would use electronic identity*

26. Some Members queried what public services would be supported by the eID system when it was launched, and by when eID would be adopted in all e-government services. The Administration advised that 26 e-government services would adopt eID upon its launch in mid-2020. Most of the 110 types

of e-government services would accept user login using eID by mid-2021. The remaining e-government services would adopt eID progressively by 2023 when the major upgrade of the relevant systems was completed. By then, all e-government services would adopt eID as their only or primary access means.

27. Some Members asked whether the Administration had any plans to expand the application of eID, including whether the Administration would consider incorporating electronic customs clearance functions into the eID system so that the public could use facial recognition technology to go through customs clearance procedure, thereby shortening the time required for immigration clearance. The Administration advised that the public could make use of the biometric functions (including facial recognition, fingerprint identification, etc.) available in their personal mobile devices to authenticate their identities and access various government and commercial e-services in a simple, convenient and secure manner. Further discussions might be held among relevant departments on the wider adoption of eID for identity authentication.

#### Protection of privacy

28. Some Members expressed concern about the security risk of the eID system. They asked how the Administration would ensure that personal data would not be leaked through the eID system to other organizations or other jurisdictions outside Hong Kong.

29. The Administration advised that prevailing internationally recognized security technologies and standards would be adopted in the eID system for authentication of users' identity. Users' data would be encrypted and stored in government data centre facilities to protect the security of users' data. Meanwhile, independent third parties, normally selected from audit firms with relevant experience in information security compliance audits, would be engaged to conduct privacy impact and information security risk assessments and audits to protect personal privacy and ensure system security.

30. Some Members expressed concerns about whether the vast amount of personal data contained in the big data analytics platform would be used by the Government for mass surveillance purposes, including whether the Administration would, with the use of the platform, introduce a system similar to the Social Credit System launched in the Mainland. Members considered that the Administration should communicate with the Office of the Privacy Commissioner for Personal Data ("PCPD") in advance in order to ensure that the operation of the platform would not result in abusive use of personal data.



31. The Administration advised that it had maintained communication with PCPD regarding the promotion of the eID system and the implementation of big data analytics platform, and strived to comply with the Personal Data (Privacy) Ordinance (Cap. 486). The big data analytics platform aimed to improve the capability of various departments in data analytics and to provide them with aggregate data in order to facilitate the provision of appropriate public services and increase the operational efficiency of the Government. The Administration assured Members that the aggregate data would not show the identities of individuals, and the purpose of establishing the big data analytics platform was to enhance data sharing.

#### Open data

32. Members pointed out that there were criticisms about the quality and usefulness of government data that had been opened up. Some people had commented that the data in the PSI portal were obsolete, the relevant government department was slow in updating the data and that there was no correlation between data provided by various B/Ds. Members expressed concern about how the Administration would ensure continuous improvement in the quality of government data being opened up.

33. The Administration advised that it had promulgated a new policy on opening up of government data, under which B/Ds should as a matter of principle endeavour to release their data for free public use via the PSI portal, unless with justifiable reasons (such as where the data included personal information). The Administration had received many suggestions on the opening up of government data since the launch of the new policy, and would take into account public feedback and suggestions on the types of data to be further opened up and their potential applications. Relevant B/Ds had taken and would take appropriate follow-up actions accordingly.

34. Noting that the Transport Department ("TD") was discussing with the Mass Transit Railway Corporation Limited ("MTR") for MTR to open up its real-time arrival data, some Members asked what the status was on the matter. They also queried whether the Kowloon Motor Bus Company (1993) Limited ("KMB") would likewise open up real-time arrival information.

35. The Administration confirmed that TD had reached an agreement with the MTR Corporation on opening up real-time arrival data on four of its rail lines including the Airport Express, Tung Chung Line, Tseung Kwan O Line and West Rail Line. TD would review the need to open up data of other rail lines in consultation with MTR when necessary. In addition, TD had been liaising with public transport operators (including KMB) and encouraging them to open up real-time arrival data. An announcement would be made when appropriate

in the light of latest developments.

### Smart Government Innovation Lab

36. Members commented that the Administration should facilitate the industry, especially local start-ups, to support B/Ds in adopting IT to improve public services. Moreover, the Administration should invite industry players such as accelerators to share with B/Ds their technology solutions. The Administration undertook to invite start-ups to put forward proposals on IT applications and product suggestions for various public services.

### Mobile applications developed by Government and relevant organizations

37. Members asked whether and when the Administration would review the development of mobile apps by B/Ds. The Administration replied that OGCIO would regularly review the development of mobile apps by B/Ds and, subject to the nature and target user groups of these mobile apps, request B/Ds to consider decommissioning those that had been launched for some time but recorded fewer than 10 000 downloads, so as to save the maintenance expenditures.

38. Members asked about the mechanism for regulating the development of mobile apps for e-Government services, including whether the Administration would issue relevant guidelines to B/Ds reminding them to evaluate the cost-effectiveness of the mobile apps when considering the development of the government app. The Administration explained that the revised "Practice Guide for Developing Mobile Apps" issued by OGCIO to B/Ds in November 2018 stipulated that B/Ds were required to set the objectives of the mobile app and understand the needs of target user groups before developing a mobile app.

### Common Spatial Data Infrastructure

39. Noting that the Common Spatial Data Infrastructure ("CSDI") was aimed at facilitating the consolidation, exchange and sharing of geospatial information for organizations in the public and private sectors, Members asked about the implementation progress in this regard.

40. The Administration indicated that in his 2019-2020 Budget Speech, the Financial Secretary had earmarked a non-recurrent funding of \$300 million to expedite the development of CSDI and 3D digital map. CSDI was expected to come into full operation by the end of 2022. The Administration would launch several quick-win projects such as Map Application Programming Interface by 2020 to demonstrate the benefits of CSDI as early as possible. Besides, the Administration's target was to develop a comprehensive 3D digital map in

phases for completion by 2023. The Lands Department ("LandsD") was conducting a pilot project to create and publish 3D digital maps showing the interior layout of 150 buildings by end-2019. Furthermore, LandsD launched the Hong Kong GeoData Store (geodata.gov.hk) in December 2018 as the alpha version of the CSDI portal. OGCIO would assist individual B/Ds and public organizations in releasing more datasets and enhancing data quality.

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

41. Members have raised questions relating to e-Government services, including GovCloud, the eID system, blockchain technology, protection of personal data privacy and government mobile applications, at Council meetings. Details of the questions and the Administration's replies are given in the hyperlinks in the **Appendix**.

### **Latest position**

42. The Administration will brief the Panel on 8 June 2020 on the measures and technology applications adopted to promote e-Government, including the preparatory work for launching the "iAM Smart" platform.

### **Relevant papers**

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

## Appendix

### List of relevant papers

Committee	Date of meeting	Papers
Panel on Information Technology and Broadcasting	12 March 2018	<p>Administration's paper on the key infrastructure projects for smart city development  <a href="#">LC Paper No. CB(4)701/17-18(03)</a></p> <p>Administration's response to issues raised at the meeting on 12 March 2018  <a href="#">LC Paper No. CB(4)1051/17-18(01)</a></p> <p>Minutes of meeting  <a href="#">LC Paper No. CB(4)1197/17-18</a></p>
Finance Committee	11 May 2018	<p>CAPITAL WORKS RESERVE FUND            HEAD 710 – COMPUTERISATION            Office of the Government Chief Information Officer            New Subhead "Electronic Identity (eID)"            New Subhead "Digital Transformation for Agile Delivery of e-Government Services"  <a href="#">FCR(2018-19)9</a></p> <p>Minutes of meeting  <a href="#">LC Paper No. FC9/18-19</a></p>
Panel on Information Technology and Broadcasting	9 July 2018	<p>Administration's paper on e-Government  <a href="#">LC Paper No. CB(4)1337/17-18(03)</a></p> <p>Updated background brief  <a href="#">LC Paper No. CB(4)1337/17-18(04)</a></p> <p>Minutes of meeting  <a href="#">LC Paper No. CB(4)1596/17-18</a></p>

<b>Committee</b>	<b>Date of meeting</b>	<b>Papers</b>
Panel on Information Technology and Broadcasting	10 May 2019	Administration's paper on electronic identity <a href="#">LC Paper No. CB(1)1020/18-19(03)</a>  Updated background brief on electronic identity project <a href="#">LC Paper No. CB(1)1020/18-19(04)</a>  Minutes of meeting <a href="#">LC Paper No. CB(1)1290/18-19</a>
Panel on Information Technology and Broadcasting	10 June 2019	Administration's paper on e-Government <a href="#">LC Paper No. CB(1)1135/18-19(03)</a>  Updated background brief on e-Government development <a href="#">LC Paper No. CB(1)1135/18-19(04)</a>  Minutes of meeting <a href="#">LC Paper No. CB(1)1327/18-19</a>
Council	27 February 2019	Question No. 11 raised by Hon WU Chi-wai <a href="#">Making use of next generation government cloud infrastructure</a>
Council	17 April 2019	Question No. 15 raised by Hon Charles Peter MOK <a href="#">Implementation of electronic identity system</a>
Council	29 May 2019	Question No. 15 raised by Hon Charles Peter MOK <a href="#">Application of blockchain technology</a>

<b>Committee</b>	<b>Date of meeting</b>	<b>Papers</b>
Council	13 November 2019	Question No. 5 raised by Hon Charles Peter MOK <a href="#">Application of artificial intelligence and protection of personal data privacy</a>
Council	26 February 2020	Question No. 6 raised by Hon Paul TSE <a href="#">Government mobile applications</a>
Council	13 May 2020	Question No. 2 raised by Hon Charles Peter MOK <a href="#">Information technology support for government personnel working from home</a>