OGCIO'S PROGRAMMES AND PROJECTS IN PROMOTING THE WIDER USE OF IT IN THE COMMUNITY

Executive Summary

1. The Government defines information and communications technology (ICT) as all technologies and applications that involve information processing and/or exchange over communication network(s), including the Internet. ICT is often used as an extended synonym for information technology (IT). The Office of the Government Chief Information Officer (OGCIO) promotes and facilitates the wider use of IT in the business sector and the community, and contributes to building a digitally inclusive society under one of its programme areas, namely "IT in the Community". In 2016-17, the total expenditure for the initiatives of the OGCIO to promote the wider use of IT in the community was $117.6 million. The expenditure comprised expenditure of $98.7 million under the programme area "IT in the Community", and $18.9 million for the provision of free public Wi-Fi services funded by the Capital Works Reserve Fund. The Government's strategy on promoting the wider use of IT in the community evolves over time. It was first promulgated in the Digital 21 Strategy document in 1998 and updated in 2001, 2004 and 2008 respectively. The Audit Commission (Audit) has recently conducted a review of the OGCIO's programmes and projects in promoting the wider use of IT in the community.

Digital inclusion initiatives

2. ***Low take-up rate and utilisation rate of the Internet Learning Support Programme (ILSP).*** In May 2010, the Finance Committee (FC) of the Legislative Council approved a funding of $220 million for the implementation of the ILSP for five years to help needy students and parents from low-income families to gain access to the Internet for learning. The ILSP was launched in July 2011 and will end in August 2018. Audit noted that the annual take-up rate (i.e. the percentage of eligible families served) for the school years from 2011/12 to 2016/17 was generally low, ranging from 4% to 14%. The take-up rate of the ILSP services for the six-year period was 18%. Moreover, the utilisation rate (i.e. the percentage of enrolled families served) for each year from 2011/12 to 2016/17 was low, ranging

from 12% to 24%. The utilisation rate for the 6.5-year period from the launch of the ILSP in 2011/12 to December 2017 was 47% (paras. 2.4, 2.5, 2.10, 2.11 and 2.14).

3. ***Lukewarm response from target organisations and small number of downloads for some mobile applications (mobile apps).*** The OGCIO has launched three rounds of Funding Scheme for Digital Inclusion Mobile Apps since 2012 to provide funding support for non-profit-making social service organisations to develop mobile apps that cater for the needs of underprivileged groups for free use. Up to December 2017, 17 mobile apps with a total funding of $6 million had been developed and launched. Audit noted that: (a) the number of proposals received in each round of invitation decreased from 45 in 2012 to 15 in 2015. Moreover, the number of organisations which had submitted proposals decreased from 40 (9% of 445 invitations) in 2012 to 14 (3% of 522 invitations) in 2015; and (b) the OGCIO requires the grantees to set and meet target number of downloads within the first 12 months after the launch of the digital inclusion mobile apps. Audit examination of the number of downloads of the 12 digital inclusion mobile apps funded by the OGCIO in the first and second rounds revealed that 8 (67%) of them failed to achieve the target number of downloads within the first 12 months after the launch of the mobile apps (paras. 2.29 to 2.31).

4. ***Need to improve government mobile app accessibility and lukewarm response to Web Accessibility Recognition Scheme.*** The OGCIO launched the Web/Mobile App Accessibility Campaign in October 2011 to promote the adoption of accessible design in websites and mobile apps. Audit noted that: (a) all government mobile apps developed on or after 1 December 2014 should be made accessible for all users, including persons with disabilities, and conform to all the baseline accessibility criteria, e.g. providing text resize function and sufficient colour contrast. According to the survey conducted by the OGCIO in October 2017, one (4%) of the 23 mobile apps developed on or after 1 December 2014 and 58 (65%) of the 89 mobile apps developed before 1 December 2014 did not conform to the baseline accessibility criteria; and (b) Audit analysed the response rates of local enterprises/organisations for submission of applications in each round of the Web Accessibility Recognition Scheme held in the period 2013 to 2016 and noted that the response rates ranged from 7.8% to 13% (paras. 2.35, 2.37 and 2.40).

Executive Summary

Free public Wi-Fi services

5. ***Need to improve Government Wi-Fi (GovWiFi) services.*** Since 2007, the GovWiFi services have provided the public with free Wi-Fi services on selected government premises. The FC approved $217.6 million in 2007 and a supplementary provision of $68 million in 2011 for the provision of the GovWiFi services for a total of 10 years from December 2007 to December 2017 (under two 5-year outsourcing contracts). In November 2017, the Government awarded the third contract for a contract sum of $119.8 million. Audit noted that: (a) in the 2016 Policy Address, the Government pledged to progressively double the existing speed of GovWiFi connection to 3 Megabits per second (Mbps) to 4 Mbps per user. Based on the results of the OGCIO's annual service check in 2017, the download speed of 1,171 (38%) of the 3,087 hotspots was lower than 3 Mbps, and no Wi-Fi connection could be established at 10 (0.3%) hotspots; (b) as at 31 December 2017, there were 616 GovWiFi venues. Audit examined the OGCIO's record on the usage of the GovWiFi services at the 616 venues in the period from 2014 to 2017. The usage at some venues was low. For 196 (32%) of the 616 venues, the average daily number of users was less than 15; (c) amongst the 20 GovWiFi venues visited by Audit in the period from January to March 2018 to ascertain whether GovWiFi signages were put up, at 6 (30%) venues, no signages were put up at any of the hotspots and at 13 (65%) venues, signages were only put up at some hotspots; and (d) the use of encrypted channel cannot provide sufficient network security protection to users against hacking as it cannot protect the data during its transmission across the Internet. However, in the security tips and the usage guide provided on the thematic website on the GovWiFi services, users were not explicitly alerted to the limitation of encrypted channel (paras. 3.2, 3.5, 3.7, 3.10, 3.13 and 3.17).

6. ***Need to improve the Wi-Fi.HK brand.*** Wi-Fi.HK is the common branding launched in August 2014 through collaboration of the Government with a number of public and private organisations for providing free Wi-Fi services in Hong Kong. Information on location of the venues offering the Wi-Fi.HK services are available at the Wi-Fi.HK website and the Wi-Fi.HK mobile app. Audit noted that the percentage of Wi-Fi.HK venues where Wi-Fi connections could not be established increased from 5% (9 of 165 venues checked) in 2015 to 13% (37 of 284 venues checked) in 2017. The Government pledged to progressively expand the number of Wi-Fi.HK hotspots from 17,000 to 34,000 by 2019. However, the progress of expanding the coverage of the Wi-Fi.HK services was slow. As at 31 December 2017, the number of Wi-Fi.HK hotspots had increased only by 3,339, from 17,000 to 20,339. Up to 28 February 2018, the response from the private organisations to join the Wi-Fi.HK

brand had been lukewarm. Only 19 private organisations had joined the Wi-Fi.HK brand since May 2016. Furthermore, according to the Thematic Household Survey conducted by the Census and Statistics Department in 2016, 55% of the respondents who had used public Wi-Fi services during the 12 months before the survey were not aware of the Wi-Fi.HK brand. While the OGCIO intended to enhance the security measures for the Wi-Fi.HK services by adopting digital server certificate, in the Wi-Fi.HK sample service check conducted in 2017, digital server certificate was not found at 82 (33%) of the 247 Wi-Fi.HK venues checked (paras. 3.20, 3.22 to 3.24, 3.26 and 3.27).

7. ***Slow progress of providing Wi-Fi services under public-private collaboration (PPC).*** On 20 December 2016, the Government entered into licence agreements with four service providers to provide Wi-Fi services for a service period of five years at 185 government venues across 18 districts in Hong Kong with high patronage such as parks, sitting-out areas, promenades, tourist spots and public transport interchanges. According to the agreements, the service providers would be allowed to provide their commercial mobile and Wi-Fi services and other information services at these venues, and should commence the provision of the Wi-Fi services within 12 months (i.e. by 19 December 2017). The progress of the implementation of the PPC pilot project by the service providers was slow. Free Wi-Fi services had been launched at only 12 (6%) of the 185 venues by the deadline. As at the deadline of 19 December 2017, a service provider (i.e. Service Provider D) had commenced the Wi-Fi services at all of its seven allocated venues. The other three service providers (i.e. Service Providers A, B and C) had not commenced the Wi-Fi services at some or all of the allocated venues due to commercial considerations, unavailability of the venues for installation work or technical difficulties encountered. Audit noted that: (a) on 9 October 2017, Service Provider A informed the OGCIO that it could only deliver Wi-Fi services at 4 of its 160 allocated venues by the deadline and sought advice from the OGCIO on the arrangements for the remaining 156 venues. On 14 December 2017, the OGCIO accepted Service Provider A's request to extend the deadline for commencing the provision of Wi-Fi services at the four allocated venues to 15 March 2018. The OGCIO had not sought legal advice on protecting the interests of the Government in varying the agreement and extending the deadline; (b) on 14 December 2017, the OGCIO accepted the Service Provider B's request to extend the deadline for commencing the provision of Wi-Fi services at 6 of its 11 allocated venues to 30 June 2018; and (c) the agreement signed by the Service Provider C included a term that for all venues, mobile services must be activated at the same time with free Wi-Fi services. However, as the mobile services at these venues had not yet been activated, free Wi-Fi services at these venues were not launched before the

deadline of 19 December 2017. Subsequently, on 23 February 2018, free Wi-Fi services were launched at six of the seven venues (paras. 3.31 to 3.34).

8.   ***Delays in providing free public Wi-Fi services in study rooms and youth service centres.*** The Government aims to offer free Wi-Fi services at all study rooms and youth service centres run by the Government and non-profit-making non-governmental organisations to help students study after school with the use of Internet resources. The OGCIO estimated that the subsidy would cover about 350 study rooms and youth service centres run by the non-governmental organisations, involving around 500 hotspots for a period of 5 years. The maximum annual subsidy for each venue would be set at $12,000 on a reimbursable basis. According to the requirements of the subsidy scheme for providing free public Wi-Fi services in study rooms and youth service centres, grantee non-governmental organisations should provide Wi-Fi services to the public in their venues within three months after accepting the offer. As at 31 December 2017, of the 177 venues approved under the subsidy scheme, Wi-Fi services were launched at 99 (56%) venues. Of the 99 venues, the Wi-Fi services at 41 (41%) venues were launched after the deadline. Of the 73 venues where Wi-Fi services had not been launched, the provision of Wi-Fi services at 52 (71%) venues was overdue. Five venues were withdrawn from the scheme (paras. 3.38 and 3.40).

Other initiatives in promoting the wider use of IT

9.   ***Delay in the sale of two high-tier data centre sites.*** In 2012, the Chief Executive in Council approved the disposal of three dedicated sites of about one hectare each at Tseung Kwan O Town Lots Nos. 122, 123 and 127 (Sites 1, 2 and 3) for high-tier data centres. Site 1 was sold through open tender on 4 October 2013. However, due to a number of issues, such as the termination of existing Short Term Tenancy (STT), closing down of public metered carpark, and arrangement for possible site decontamination works and accessibility, Sites 2 and 3 were not yet available for sale up to January 2018. Site 2 had been occupied by ten recycling operators under STTs granted since 11 January 1999. Site 3 was not put on sale as the OGCIO planned to dispose of Site 2 and Site 3 together. In July 2017, the Lands Department (LandsD) issued letters to the recycling operators notifying them that the STTs would be terminated on 3 October 2017. In August 2017, the recycling operators requested to have the STT termination date postponed to 31 March 2018. In September 2017, as agreed by the OGCIO and the departments concerned, the LandsD extended the termination date of the STTs to 31 March 2018.   In

February 2018, the termination date of the STTs was further extended to 30 June 2018 upon the request of the recycling operators (paras. 4.7 to 4.10).

10.   ***Small number of data centre waiver applications.***   To encourage existing industrial buildings to change their use to data centres, the fees for issuing waivers for using industrial buildings aged 15 years or more for data centres were waived. From 25 June 2012 to 30 November 2017, only 32 waiver applications under this concessionary scheme were received.   The number of waiver applications had increased from 4 in 2012-13 to 14 in 2015-16 and decreased drastically to 1 in 2016-17.   In 2017-18, 2 applications were received up to 30 November 2017 (para. 4.12).

11.   ***Need to promote lease modifications of industrial lots for data centre use.*** One of the measures to facilitate the development of data centres is to accept lease modification (including land exchange) tailor-made for development of high-tier data centres on existing industrial lots for the part of the development proposed for data centre use.   In the period from 25 June 2012 to 31 December 2017, the LandsD received only four applications.   The first application was received in April 2013 and the modification letter was executed in January 2015.   The second application was withdrawn.   As at 31 December 2017, the third and fourth applications were under processing.   The small number of applications received indicates that the OGCIO needs to review the attractiveness of the measures in facilitating the development of data centres (paras. 4.14 to 4.16).

12.   ***Need to encourage more bureaux/departments and organisations to open up their data.***   In an effort to support Hong Kong's development as a knowledge-based economy, in March 2011, the Government launched a pilot scheme to facilitate value-added re-use of Public Sector Information (PSI).   In March 2015, the OGCIO launched the revamped PSI portal entitled "data.gov.hk" to facilitate the dissemination of datasets provided by government bureaux/departments and organisations.   The OGCIO had approached a number of public and private organisations to encourage them to open up their data to the PSI portal.   However, up to 31 December 2017, Audit noted that: (a) only 47 (66%) of the 71 government bureaux/departments released their data to the PSI portal; (b) only 8 public and private organisations released their data to the PSI portal; and (c) only two (50%) of the four major transport operators had released some static information to the PSI portal (paras. 4.20 to 4.23).

13.   ***Need to strengthen the monitoring of the contractor and the Leading Organisers of the Hong Kong ICT Awards.***   The "Hong Kong ICT Awards" Programme was established in 2006 with the collaborative efforts of the industry, academia and the Government.   The Programme is steered by the OGCIO and organised by ICT industry associations and professional bodies (i.e. Leading Organisers).   Each year, the OGCIO appoints a contractor to provide the secretariat service and logistics support for the Hong Kong ICT Awards.   The contractor is required to ensure that personnel engaged in the secretariat service should not be involved in adjudication and assessment work of the Hong Kong ICT Awards except for administrative work.   Audit noted that an assessor and a member of the judging panel of an award category from 2013 to 2017 were members of the project team of the organisation for providing the secretariat service.   On the other hand, for each award category, a Leading Organiser, who is often an industry-related organisation, is appointed for planning, organising, managing and running the award category.   According to the Judging Manual, Leading Organisers should check the eligibility requirements of the award entrants.   In 2016, there were media reports claiming that a company, which won an award, did not meet the entry requirement.   In February 2017, the OGCIO concluded that the claim made by the media report was valid and disqualified the company.   The incident indicated that there was room to strengthen the monitoring of the Leading Organisers' performance of the responsibilities stipulated in the Judging Manual (paras. 4.28, 4.30 to 4.36).

Way forward

14.   ***Need to update the strategies on promoting the wider use of IT in the community.***   The Government's strategy on promoting the wider use of IT in the community was first promulgated in the Digital 21 Strategy published in November 1998 and had been updated in 2001, 2004 and 2008 respectively. However, up to 31 January 2018, the OGCIO had not updated the Digital 21 Strategy, nor has it promulgated any new strategy to replace the Digital 21 Strategy.   The 2008 Digital 21 Strategy was published on the Digital 21 Strategy website of the OGCIO as the latest strategy.   In December 2017, the Government released the Smart City Blueprint for Hong Kong.   Audit noted that only three (i.e. Wi-Fi Connected City Programme, PSI portal and technology start-ups supporting initiatives) of the ten key initiatives in promoting the wider use of IT in the community were mentioned briefly in the Smart City Blueprint for Hong Kong.   The initiatives were only featured briefly in the Blueprint without details of their strategy and programme of work.   The Innovation and Technology Bureau (ITB) and the OGCIO need to update regularly their strategies and work programmes on promoting the wider use of IT in the

community, taking into account the Smart City Blueprint for Hong Kong and other policy directives and strategies on innovation and technology promulgated by the ITB (paras. 5.2, 5.3, 5.5 to 5.7).

Audit recommendations

15.   **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in the Executive Summary. Audit has *recommended* that the Government Chief Information Officer should:**

Digital inclusion initiatives

(a)   **carry out a post-implementation review to evaluate the extent to which the ILSP had enhanced digital inclusion and draw lessons from its implementation (para. 2.21(c));**

(b)   **ascertain the reasons for the low response rates of organisations for submission of proposals for Funding Scheme for Digital Inclusion Mobile Apps and the low number of downloads of some mobile apps (para. 2.33(a));**

(c)   **draw lessons from the implementation of the Funding Scheme for Digital Inclusion Mobile Apps for similar schemes launched in the future (para. 2.33(b));**

(d)   **ascertain the difficulties for government bureaux/departments to conform to the baseline accessibility criteria and take further measures to encourage and facilitate them to conform to the criteria (para. 2.42(a));**

(e)   **ascertain the reasons for the low response rates of the Web Accessibility Recognition Scheme (para. 2.42(b));**

Free public Wi-Fi services

(f)   **monitor the performance and connection speed of the GovWiFi services and take measures to improve the connectivity and connection speed at**

GovWiFi venues with connection problem and slow connection speed (para. 3.18(a));

(g) monitor the usage at each venue from time to time and consider relocating Wi-Fi hotspots when necessary (para. 3.18(d));

(h) ensure that signages indicating the availability of the GovWiFi services are properly put up (para. 3.18(e));

(i) explicitly alert users of the GovWiFi services to the limitation of encrypted channel, and encourage them to use more secured means of communication to transmit sensitive information, such as virtual private network and secure sockets layer, if necessary (para. 3.18(g));

(j) take measures to ensure that the information on venue locations provided by the Wi-Fi.HK participating organisations is correct and the Wi-Fi.HK services are available at all Wi-Fi.HK venues (para. 3.28(a));

(k) take action to expedite the progress of expanding the coverage of the Wi-Fi.HK services, taking into account the public preference on the locations of accessing free Wi-Fi services as far as possible (para. 3.28(b));

(l) review the slow progress in the implementation of the PPC pilot project and take measures to expedite the provision of Wi-Fi services (para. 3.36(a));

(m) critically review the target number of free Wi-Fi hotspots to be provided in the full-scale roll-out of the PPC model (para. 3.36(b));

(n) review whether the interests of the Government have been adequately protected in respect of the variation of the agreement and/or the extension of deadline made with Service Providers A and B (para. 3.36(c));

(o)   **take measures to address the slow progress of the provision of free Wi-Fi services by the non-governmental organisations at the approved venues under the subsidy scheme for providing free public Wi-Fi services in study rooms and youth service centres, and facilitate them to speed up the progress (para. 3.42);**

Other initiatives in promoting the wider use of IT

(p)   **endeavour to expedite the disposal of the two dedicated sites for data centre development (para. 4.17(a));**

(q)   **review the effectiveness of the concessionary measure on exempting the waiver fees for change of use in parts of industrial buildings (para. 4.17(b));**

(r)   **review the effectiveness of the concessionary measure on lease modification tailor-made for data centre use, and step up effort in promoting this measure to the industry (para. 4.17(d));**

(s)   **encourage more government bureaux/departments, and public and private organisations to open up more data for free public re-use via the PSI portal (para. 4.26(a));**

(t)   **ensure that the personnel engaged in the secretariat service are not involved in the adjudication and assessment work of the Hong Kong ICT Awards (para. 4.42(a));**

(u)   **establish a mechanism to strengthen the monitoring of the Leading Organisers' performance of the responsibilities stipulated in the Judging Manual (para. 4.42(c)); and**

Way forward

(v)   **update the Digital 21 Strategy website regularly to reflect the latest developments (para. 5.9).**

16.   **Audit has also *recommended* that the Secretary for Innovation and Technology and the Government Chief Information Officer should update regularly their strategies and work programmes on promoting the wider use of IT in the community, taking into account the Smart City Blueprint for Hong Kong and other policy directives and strategies on innovation and technology promulgated by the ITB (para. 5.8).**

Response from the Government

17.   The Government Chief Information Officer and the Secretary for Innovation and Technology agree with the audit recommendations.