

# PROVISION OF GovWiFi SERVICE

## Executive Summary

1. The Government Wi-Fi (GovWiFi) service has been in operation since March 2008. It provides the public with free Wi-Fi Internet connection service on selected government premises with high public patronage (e.g. public libraries). As at 31 December 2012, there were around 400 premises installed with such service. Up to January 2013, the expenditure of the service amounted to \$212.4 million. The Government adopted a total outsourcing approach for the installation of Wi-Fi facilities, provision of Wi-Fi service and their ongoing operations. The Office of the Government Chief Information Officer (OGCIO) oversees, coordinates and manages the provision of the service. The Audit Commission (Audit) has recently conducted a review on the service.

### Monitoring of GovWiFi contracts

2. *Sample checks.* The OGCIO performs sample checks (about three premises per month) on access to the Internet, Wi-Fi signal strength and coverage, and content filtering of the GovWiFi service. Audit found that: (a) the OGCIO conducted 154 sample checks involving only 137 government premises during the period May 2008 to November 2012. Another 300 premises remained to be checked. It needs to implement measures to expedite the sample checks and conduct checks on more premises; (b) the items used for testing (e.g. websites for testing the content filtering mechanism) had remained unchanged since 2008 despite new developments in technology; (c) the notebook computer used for testing did not have a limit on the maximum bandwidth usage as ordinary user devices had. The testing therefore could not reveal the normal connection speeds of ordinary user devices; and (d) sample checks were only conducted during office hours, which were not ideal for some premises (e.g. outdoor premises such as public parks) (paras. 2.4 and 2.5).

3. *User feedback.* According to the GovWiFi contracts, the contractor has to conduct web-based user satisfaction surveys on the GovWiFi service periodically, and to follow up the suggestions received. There were 8,671 users who took part in the surveys during the period October 2011 to September 2012. Out of these users,

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19% had encountered problems in using or connecting to the GovWiFi service. There were also some 2,900 comments on problems encountered, many of which were related to service quality. There are merits in analysing the problems encountered and comments made by users to identify trends and common issues, so that proactive action can be taken to minimise service interruptions (paras. 2.20, 2.22 and 2.23).

### Quality of GovWiFi service

4. *Audit survey.* The OGCIO's surveys (see para. 3) were restricted to users who had successfully connected to the Internet using the GovWiFi service and did not cover those who used other Internet connection services (e.g. a subscribed 3G network). In December 2012, Audit conducted a survey and ascertained the views of 153 users of the GovWiFi service and 301 users of other Internet connection services. Of the GovWiFi users, 8% expressed dissatisfaction on the overall service, and 13% to 24% expressed dissatisfaction on coverage, connection stability and connection speed. Of the users of other services, 54% knew that the GovWiFi service was available but chose not to use it. The main reasons included: (a) GovWiFi coverage on the premises concerned was inadequate; (b) Internet connection services of telecommunications companies were faster and more stable; and (c) they had difficulties in logging onto the GovWiFi service (paras. 3.2 to 3.4).

5. *Wi-Fi coverage, access to the Internet and connection speed.* Audit field tests indicated that, on 2 of 20 selected government premises, Wi-Fi coverage was not available in areas where public use could reasonably be expected. Audit also used mobile devices to connect to the GovWiFi service. Audit found that on outdoor premises, Audit was unable to: (a) connect to the service in 17.7% of the 288 tests of connecting to the service; and (b) access the websites in 19.6% of the 720 tests of accessing websites. Moreover, in Audit's 279 connection speed tests, Audit could not complete 33 tests due to weak or unstable Wi-Fi signals. For the remaining 246 tests, Audit examined whether the download and upload speeds could attain the OGCIO's stipulated bandwidth of at least 1 Megabits per second (Mbps) for each user. Audit found that: (a) the download speeds of 25% (for indoor premises) and 55% (for outdoor premises) of the tests conducted were less than 1 Mbps; and (b) the upload speeds of 17% (for indoor premises) and 40% (for outdoor premises) of the tests conducted were less than 1 Mbps (paras. 3.6, 3.9 to 3.11).

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### Security of GovWiFi service

6. *Usage of encrypted channel.* GovWiFi users are provided with two Wi-Fi connection options — encrypted and unencrypted channels. They are advised to use the encrypted channel whenever possible for better protection of their privacy when transmitting sensitive information. Audit found that: (a) for the period October 2010 to September 2012, the usage of the encrypted channel was low, and the percentage of encrypted connections decreased gradually from 20% to 13%; (b) of the 153 people covered by the audit survey who used the GovWiFi service, 57 (37%) did not know that encrypted Wi-Fi connections could reduce the risk of data interception in the course of wireless transmission. Furthermore, 41 of the 102 people who did not use the encrypted channel did not know that such channel was available; and (c) the setup procedures of some mobile devices for using encrypted connection were cumbersome. For example, in an extreme case, 25 steps were required to login to the encrypted channel using a laptop computer (paras. 4.5, 4.7, 4.10 to 4.13).

7. *Content filtering mechanism.* The GovWiFi service has implemented content filtering mechanism to prevent users from accessing inappropriate websites. Audit's field tests on 20 government premises indicated that: (a) 2 websites containing pornographic contents and 1 illegal gambling website were not blocked; (b) an online game website was not blocked in the 3 public libraries where tests were conducted; and (c) by using mobile applications, the content filtering mechanism of the GovWiFi service could be bypassed (paras. 4.18, 4.19 and 4.24).

### Promotion of GovWiFi service

8. In examining the promotion of the GovWiFi service, Audit found that signages indicating the availability of the service were sometimes not posted at conspicuous areas or were posted in areas without Wi-Fi coverage. Furthermore, of the 454 people interviewed by Audit, 139 said that they did not know that there was GovWiFi service available. For some government premises, over 50% of the respondents were not aware of the service (paras. 5.5 and 5.6).

### Future development of GovWiFi service

9. In the longer term, the OGCIO is facing the challenge of how best to take forward the development and enhancement of the GovWiFi service and to run the

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service more cost-effectively, taking into account the following issues: (a) 108 (27%) of around 400 existing government premises had average number of daily users below 15, and the average cost per Wi-Fi connection on some premises could be expensive (say over \$50); (b) the need to extend the provision of free public Wi-Fi service to venues such as public hospitals, clinics, health centres, post offices and more tourist spots; and (c) the proliferation of mobile devices and mobile data services offered by telecommunications companies that generally provide better services at competitive subscription plans (paras. 6.5, 6.8, 6.10, 6.11 and 6.13).

### Audit recommendations

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

#### *Monitoring of GovWiFi contracts*

- (a) **take measures to expedite sample checks on government premises (e.g. by increasing the inspection frequency or exploring the feasibility of engaging the staff of user departments in performing the checks) (para. 2.6(a));**
- (b) **review and revise the test procedures, including the timing of checks, and the websites and applications used (para. 2.6(b));**
- (c) **request the contractor to analyse the feedback of users on the quality of the GovWiFi service, and take appropriate follow-up action (e.g. site inspection) (para. 2.24(a));**

#### *Quality of GovWiFi service*

- (d) **consider conducting periodic surveys to obtain the public's views on the quality of the GovWiFi service (para. 3.13(a));**
- (e) **conduct a comprehensive review of the Wi-Fi coverage areas to ensure that Wi-Fi coverage is available in areas where Internet connection is reasonably expected (para. 3.13(c));**

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- (f) take measures to enhance the connection to the GovWiFi service, the accessibility to the Internet websites and the connection speed, where appropriate (para. 3.13(e));

### *Security of GovWiFi service*

- (g) take effective measures to improve the utilisation of the encrypted channel, such as stepping up education and publicity to raise the public's awareness of wireless security (para. 4.16(b));
- (h) enhance the user-friendliness of using the encrypted channel (e.g. by exploring the availability of simplified procedures for commonly used mobile devices for the encrypted connection setup) (para. 4.16(c));
- (i) take action to ensure that the content filtering mechanism is operating effectively (para. 4.25(a));
- (j) review and update the existing content filtering mechanism in the light of the growing popularity of using mobile applications for accessing online information (para. 4.25(c));

### *Promotion of GovWiFi service*

- (k) step up the promotion of the GovWiFi service and regularly engage the user departments to visit government premises to ensure proper display of signages (para. 5.8(a) and (d)); and

### *Future development of GovWiFi service*

- (l) take on board the audit recommendations in this Audit Report and conduct a strategic review to determine the way forward of the GovWiFi service (para. 6.14).

## Response from the Administration

11. The Government Chief Information Officer agrees with the audit recommendations.