

**立法會**  
**Legislative Council**

LC Paper No. CB(1)1063/06-07  
(These minutes have been seen  
by the Administration)

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**Panel on Information Technology and Broadcasting**

**Minutes of meeting**  
**held on Monday, 15 January 2007, at 10:45 am**  
**in the Chamber of the Legislative Council Building**

- Members present** : Hon Albert Jinghan CHENG (Chairman)  
Hon SIN Chung-kai, JP (Deputy Chairman)  
Hon Fred LI Wah-ming, JP  
Hon Jasper TSANG Yok-sing, GBS, JP  
Hon Howard YOUNG, SBS, JP  
Hon Emily LAU Wai-hing, JP  
Hon Albert CHAN Wai-yip  
Hon Ronny TONG Ka-wah, SC
- Members absent** : Dr Hon LUI Ming-wah, SBS, JP  
Hon Timothy FOK Tsun-ting, GBS, JP
- Public officers attending** : Agenda Item IV  
  
Mrs Marion LAI, JP  
Deputy Secretary for Commerce, Industry and  
Technology (Communications and Technology)  
  
Mr AU Man-ho, JP  
Director-General of Telecommunications
- Agenda Item V  
  
Mr Howard C DICKSON  
Government Chief Information Officer

Ms Linda SO  
Deputy Government Chief Information Officer  
(Planning and Strategy)

Mr Stephen MAK, JP  
Deputy Government Chief Information Officer  
(Operation)

Mr Victor LAM  
Assistant Government Chief Information Officer  
(Digital 21 Policy and Strategy)

Mr Tony LI  
Principal Assistant Secretary for Commerce, Industry  
and Technology  
(Communications and Technology)

**Attendance by  
invitation**

: Agenda Item IV

PCCW IMS Limited

Mr Stuart CHIRON  
Director of Regulatory Affairs

Mr Raymond LUK  
Senior Business Development Manager

Hong Kong Broadband Network Limited

Mr Ricky WONG Wai-kay  
Chairman

Ms Kai Tamara Hare  
General Counsel–Head of Legal & Corporate  
Secretary

Hutchison Global Communications Limited

Mr Oswald KWOK  
Director of Legal & Regulatory

Mr Byron CHIANG  
General Manager - FMC Development

New World Telecommunications Limited

Mr Thomas LEUNG  
Director, Consumer Market

Mr Samuel POON  
Director, Technology and Development

Hong Kong Internet Service Providers Association

Mr Lento YIP  
Vice Chairman

Internet Society Hong Kong

Mr Charles MOK  
Chairman

Professional Information Security Association

Mr Howard LAU Hon-leung  
Chairman

Mr Thomas TSANG Hin-shun  
Treasurer

Individual

Mr Martin OEI  
Information Technology Columnist

**Clerk in attendance** : Miss Erin TSANG  
Chief Council Secretary (1)3

**Staff in attendance** : Ms Debbie YAU  
Senior Council Secretary (1)1

Ms Guy YIP  
Council Secretary (1)1

Ms May LEUNG  
Legislative Assistant (1)6

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**I. Confirmation of minutes of meeting**

(LC Paper No. CB(1)669/06-07 -- Minutes of meeting held on 11 December 2006)

The minutes of the meeting held on 11 December 2006 were confirmed.

**II. Information papers issued since the last meeting**

(LC Paper Nos. CB(1)584/06-07(01) -- (a) Report on 2006 Annual Survey on Information Technology Usage and Penetration in the Business Sector and (02) (b) Thematic Household Survey Report No. 27

LC Paper No. CB(1)620/06-07(01) -- Executive summary of the "Consultation Paper on Review of the Regulatory Framework for Universal Service Arrangements" and the relevant press release issued by the Office of the Telecommunications Authority on 28 December 2006)

2. Members noted the papers issued since the last meeting.

**III. Date of next meeting and items for discussion**

(LC Paper No. CB(1)670/06-07(01) -- List of outstanding items for discussion

LC Paper No. CB(1)670/06-07(02) -- List of follow-up actions)

3. Members noted that the next Panel meeting had been advanced from 12 February to 6 February 2007 at 4:30 pm in the Chamber to tie in with the Chinese New Year break. The following items were proposed by the Administration for discussion:

(a) Public Consultation on Proposed Spectrum Policy Framework (deferred from the meeting on 15 January 2007); and

(b) Consultation paper on mobile TV.

*(Post-meeting note: Upon the instruction of the Panel Chairman, an additional item of "Issues relating to the editorial independence of Radio Television Hong Kong" had also been scheduled for discussion at the*

February meeting, and members had been duly informed of the revised agenda vide LC Paper No. CB(1)794/06-07 on 24 January 2007. As the Secretary for Commerce, Industry and Technology later informed the Secretariat that he could not personally attend the February meeting to participate in the discussion of this item as invited by the Panel, the Panel Chairman had instructed to defer discussion of this item to the meeting to be held on 12 March 2007.)

**IV. Issues relating to Internet disruptions caused by earthquake damage to undersea cables**

4. The Chairman welcomed representatives of the Administration and deputations to the meeting. He requested the deputations to provide their written submissions, if they had not done so, or supplementary submissions, if any, to the Panel after the meeting. He also reminded the deputations that when addressing the Panel at the meeting, they were not covered by the protection and immunity under the Legislative Council (Powers and Privileges) Ordinance (Cap. 382), and their written submissions were also not covered by the said Ordinance. He then invited the deputations to present their views.

Presentation by deputations

*PCCW IMS Limited (PCCW)*

(LC Paper No. CB(1)737/06-07(01) -- Submission (English version only))

*(tabled at the meeting and subsequently issued on 16 January 2007)*

5. Mr Stuart CHIRON, Director of Regulatory Affairs of PCCW stressed that the earthquakes off Taiwan on 26 and 27 December 2006 and subsequent undersea landslides had resulted in an unprecedented outage of seven undersea cables each with multiple breaks spreading over 300 kilometres of ocean floor. PCCW had been tackling the problems arising from the catastrophic outage over the last few weeks. So far, services provided to all of PCCW's retail customers and nearly all of PCCW's wholesale customers had been restored. He then highlighted PCCW's network design and the contingency plans as follows:

- (a) PCCW's network system was probably the most sophisticated system in Hong Kong in terms of route diversity (i.e. capacity on multiple satellites and undersea cables) and redundancy (i.e. capacity greater than actual demand).
- (b) In response to the outage, PCCW had activated its contingency plan to divert congestion to other available routes. For example, traffic was routed via satellite systems, undersea cable systems (northbound towards Taiwan, Korea, Japan and North America, and southbound towards Singapore, South East Asia, etc.) and

terrestrial cable systems through the Mainland. PCCW had worked very hard with carriers in Hong Kong and around the world. In just a few days, PCCW had restored all International Direct Dial (IDD), Internet and International Private Leased Circuit services. Excess capacity had been brought on line, new routes had been established, and underutilized capacity had received additional traffic.

6. Mr CHIRON remarked that since PCCW and other carriers had responded quickly to address and fix the problem, in terms of re-routing traffic, it was evident that the market could be relied upon, and there was no need for Government intervention. Nevertheless, he added that there were lessons to be learnt from the incident:

- (a) Additional investments by PCCW and other carriers in planned undersea cables would ensure greater degree of route diversity and redundancy, and would make networks less susceptible to natural disasters.
- (b) On the role of the Government, in addition to keeping the general public informed of what was happening during Internet outages by the Office of the Telecommunications Authority (OFTA), the Government should also promote operators' investment on backup network capacity and allow for commercial returns. Apart from these, there should be no Government intervention providing free-rider arrangements relating to international services, nor should it mandate wholesale pricing to favour resellers.

*Hong Kong Broadband Network Limited (HKBN)*

(LC Paper No. CB(1)737/06-07(02) -- Submission (Chinese version only))

*(tabled at the meeting and subsequently issued on 16 January 2007)*

7. Mr Ricky WONG Wai-kay, Chairman of HKBN highlighted that among the four major Internet service providers (ISPs), three of them had been able to resume about 80% of their services within 24 to 48 hours by activating their contingency plans, including diverting traffic to alternative routings or acquiring additional bandwidth. Although natural disasters could not be avoided, the three concerned ISPs had made timely response and reasonable re-arrangement of resources to minimize the impact of the incident on their customers, which made up about 50% of local domestic users. Mr WONG considered that early notification made to the public by OFTA might not be highly useful to reduce the impact of the network outage on users since under the current market-led regime, there was not much that the Government could do. On the suggestion of routing network traffic through Mainland cables, he pointed out that the capacity of the Mainland cables was rather limited. Moreover, such move might undermine Hong Kong's status as a regional telecommunications hub.

8. Looking forward, Mr WONG made the following suggestions:
- (a) During contingency, interconnection among networks of ISPs should be made compulsory.
  - (b) The Government should take the lead in installing an additional submarine cable with funding subsidized by other governments joining the venture or by increasing the Universal Service Contributions.

*Hutchison Global Communications Limited (HGC)*

(LC Paper No. CB(1)737/06-07(03) -- Submission)

*(tabled at the meeting and subsequently issued on 16 January 2007)*

9. Mr Oswald KWOK, Director of Legal & Regulatory of HGC pointed out that routing through Luzon Strait to North East Asia such as Japan, Korea, Taiwan, as well as North America, was one of the most popular cabling routings deployed by cable consortia due to technical and geo-political-economical reasons. The telecom traffic between Hutchison's network and those in North East Asia and North America also followed the Luzon Route. However, the recent earthquakes which occurred in south of Taiwan had caused severe damage to the undersea cable systems located in Luzon Strait. After detecting the damages, HGC had immediately activated the contingency plan already put in place as follows:

- (a) using diversified international network, including submarine and terrestrial cable systems, to route traffic and to resume as far as possible the telecommunications capacity of the affected countries/places;
- (b) resorting to the interconnection arrangements, which were established with more than 130 carriers worldwide by way of worldwide mutual capacity matching and interconnecting via HGC's own overseas points of presence, to recover the traffic to the major destinations such as Taiwan, Korea, Japan, the United States (US) and Europe; and
- (c) collaborating with the Mainland carriers to bring up another direct route to Japan and US via Shanghai in order to provide telecommunications services through alternative routing.

10. Mr KWOK said that amongst the operators in Hong Kong as well as in the region, HGC was one of the earliest to restore the affected traffic, and it could also provide assistance to other local and overseas operators in the restoration of their services. He remarked that in case of network outages due to natural disasters, it was the responsibility of the industry, the regulator and the public to

each perform the due share of care to minimize the impact caused by service disruptions. The breakdown of six cable systems all at once during the earthquakes was an unprecedented incident, and consumers' misunderstanding of the actual extent of the disruptions caused was understandable. For better management of similar incidents in the future, HGC supported that the industry and the regulator should work together for an effective process for informing the public of the salient information during Internet outages. HGC would also collaborate with OFTA for establishing appropriate outage reporting mechanisms to safeguard the rights and interests of consumers.

*New World Telecommunications Limited (NWT)*

(LC Paper No. CB(1)737/06-07(04) -- Submission)

*(tabled at the meeting and subsequently issued on 16 January 2007)*

11. Mr Thomas LEUNG, Director, Consumer Market of NWT put forward two suggestions as follows:

- (a) The incident showed that the general public and companies in Hong Kong relied extensively on Internet connectivity. Thus, a stable and non-interrupted telecommunications network was vital to the local economy. As the capital and reserve of the trading fund of OFTA had reached HK\$860 million in 2006-2007, OFTA should consider using those capital and reserve to purchase backup bandwidth capacity from international carriers in order to provide a Centralized Bandwidth Backup (CBB) pool. In case of emergencies and unexpected situations, telecommunications operators could then approach OFTA to acquire additional bandwidth from the central pool at a pre-set price according to the capacity consumed, so that operators could resume services for their customers as soon as practicable. All telecommunications operators, regardless of their business scale, should be treated on a par. Such an arrangement would also free operators from time-consuming negotiations with international carriers, and hence their resumption of services for customers in the shortest time. NWT considered the setting up of a CBB pool a good initiative worth to be considered by the Government, and NWT would fully support its implementation.
- (b) As the current residential and business broadband penetration rates were 67% and 55% respectively, there was still significant room for promoting broadband access in Hong Kong. To maintain Hong Kong as Asia's communications hub, the Government should continue to provide an enabling environment for operators to develop advanced telecommunications and network technologies. To achieve the goal of "broadband connectivity for every citizen with choices of technologies deployed", the Government should expedite the implementation of Broadband Wireless Access (BWA)

by releasing spectrum for deploying BWA technology and issuing relevant licences. As many countries in the region, such as Thailand and Taiwan, had already embarked on the licensing of BWA, Hong Kong should catch up with the regional development so as not to jeopardize its position as the regional communications hub.

12. On improvement measures to be made, Mr LEUNG concurred that the reporting mechanisms among OFTA and other telecommunications operators should be strengthened. In case of emergencies, OFTA should take the lead in conveying the latest situation thoroughly and timely to all parties concerned so as to facilitate the mutual implementation of contingency plans which would help minimize the adverse impact on domestic and commercial users.

*Hong Kong Internet Service Providers Association (HKISPA)*

(LC Paper No. CB(1) 697/06-07(02) -- Joint submission from four deputations (Chinese version only))

13. Mr Lento YIP, Vice Chairman of HKISPA said that according to member organizations of HKISPA, 50% and 70% of the telecommunications services had been resumed in two days and one week respectively after the network outage. So far, telecommunications services for all domestic users had nearly been restored despite the fact that the repairing work of the undersea cables was still underway. In the light of the incident, the following actions would be taken by HKISPA:

- (a) to lobby administrators of domain names, such as ".com", ".net", ".org", to install their route servers in Hong Kong; and
- (b) to promote among HKISPA's member organizations the introduction of Service Level Agreements and Tier services so that more service options could be provided to consumers.

14. Mr YIP also conveyed the following views from member organizations of HKISPA:

- (a) As the contingency plans adopted by ISPs had effectively overcome Internet disruption problem, it revealed that the market was operating in a healthy way. As such, there was no imminent need for ISPs to share network resources since interconnection involved complicated issues such as user rights and access charges.
- (b) Instead of purchasing bandwidth capacity for consumption by citizens, the Government should consider providing financial incentives to promote route diversity, since market players could decide on their own whether it would be economically sound to

acquire backup capacity or invest on the installation of additional undersea cables.

*Internet Society Hong Kong (ISOC-HK)*

(LC Paper No. CB(1) 697/06-07(02) -- Joint submission from four deputations (Chinese version only))

15. In the light of the Internet outage, Mr Charles MOK, Chairman of ISOC-HK, put forward his views and suggestions as follows:

- (a) Since the earthquakes had not only affected the telecommunications services of Hong Kong but also those of other countries in the region, OFTA should liaise with the telecommunications services regulators of those countries affected by the incident for establishing an effective precautionary mechanism as well as putting in place contingency plans.
- (b) Small and medium enterprises (SMEs) had suffered considerable economic losses from the Internet disruptions as they were less advanced in Information Technology (IT) and therefore more vulnerable to IT incidents. The Administration should join hands with the IT industry to step up education for SMEs and general domestic users with a view to equipping them with the skills and knowledge that could help them resolve their problems during network incidents, as well as choosing the right kind of telecommunications services to meet their needs.

16. With regard to some deputations' suggestion that the Government should make available backup capacity, Mr MOK opined that it would be controversial if OFTA, being the regulator, played a role in the operation of the commercial telecommunications market, in particular when contingency measures taken by market players were effective in restoring services in the wake of the Internet outage. Moreover, the suggestion was also contrary to the Government's policy of opening up the telecommunications market. As for the installation of additional undersea cables, he pointed out that multilateral agreements among relevant countries were required.

*Professional Information Security Association (PISA)*

(LC Paper No. CB(1) 697/06-07(02) -- Joint submission from four deputations (Chinese version only))

17. Mr Thomas TSANG Hin-shun, Treasurer of PISA noted that due to the lack of relevant information, some SMEs had failed to anticipate the implications of the network outage at the initial outbreak of the incident, and therefore had not adopted timely measures to maintain their normal operation. To reduce business

risks, he recommended SMEs to consider purchasing insurance plans, such as the Business Continuity Insurance, which would provide coverage on damages as a result of Internet outages. The Government might also consider performing the Critical Information Infrastructure Planning for prior assessment of the impact of information infrastructure outage, including Internet disruptions, on the entire community.

*Mr Martin OEI, IT Columnist*

(LC Paper No. CB(1) 697/06-07(03) -- Submission (Chinese version only))

18. Mr Martin OEI, IT Columnist pointed out that Hong Kong was well served by undersea cables running in both the easterly and westerly directions and was the leading city in the Asian Pacific Region in terms of network connections. While some telecommunications service providers could resume their services between Hong Kong and US within 24 hours after the Internet outage, PCCW, however, failed to resume the same services after 72 hours, which then led to the unprecedented network congestion. He doubted if it was due to PCCW's over reliance on the cable services provided by Reach Global Services Ltd (REACH), a joint venture by PCCW and an Australian consortium, Telstra Group. In this connection, Mr OEI suggested that OFTA, as the regulator, should require PCCW to provide the public with detailed explanation on whether PCCW had implemented any contingency measures during the recent network outage, and whether it had any difficulties in acquiring bandwidth from other ISPs during this incident, etc. He also made the following suggestions:

- (a) The public should be notified of any network incidents 180 minutes after the occurrence.
- (b) The Government might not need to use public resources to purchase reserve bandwidth; instead, it could promote the sharing of resources among ISPs.
- (c) To better protect consumer interests, it would be vital for ISPs to publicize business information on the undersea cables and international bandwidth suppliers they used, so that consumers could make informed choices on their patronage of services provided by ISPs and could also assess the risks they might have to face.

Preliminary response by the Administration

(LC Paper No. CB(1)697/06-07(01) -- Paper provided by the Administration)

19. At the invitation of the Chairman, the Director-General of Telecommunications (DG/Tel) updated members on the latest position of the restoration of external telecommunications services as well as the follow-up actions taken by OFTA with regard to the incident as follows:

- (a) If environment and weather permitted, the first stage of repairing work of the damaged submarine cable systems was expected to be completed within the second half of January 2007 whereas the remaining repairing work would be completed progressively by mid-February 2007;
- (b) As the existing outage reporting mechanism did not cover the reporting on the outage of submarine cable systems, OFTA, in the light of the incident, had convened two working groups for submarine cable operators and ISPs respectively to review the outage reporting mechanisms. It was expected that the new outage reporting mechanisms would be implemented in February 2007; and
- (c) OFTA would review operators' backup capacity as well as their contingency plans. As to whether operators should invest on new cables, it was a commercial decision to be made by individual operators, and OFTA would avoid unnecessary market intervention. Nevertheless, OFTA would consider issuing, where necessary, guidelines or codes of practice in this respect.

20. DG/Tel remarked that the incident had revealed that the market mechanism was in operation as local operators had made arrangements for backup capacity and mutual assistance during the outage, which had resulted in effective restoration of services within a short time. He stressed that to maintain the effective market operation, the Government should refrain from unnecessary intervention unless there was market failure. Moreover, to maintain operators' incentive for investment on backup capacity, consideration should not be given to adopting measures proposed by some deputations such as central allocation of backup capacity acquired by the Government. The reason was that such kind of centralized arrangement could not bring out the differentiation in service quality between operators during outages, and could also affect the effective operation of the market. Nevertheless, OFTA would consider appropriate measures to be undertaken at the Government level or inter-Government level, in particular with the Mainland authorities, to facilitate operators' acquisition of adequate backup capacity under their contingency plans.

### Discussion

21. The Chairman advised members to limit, as far as practicable, their speaking time to five minutes.

*Rate of service recovery*

22. Mr Howard YOUNG remarked that it was lucky that the network outage happened in the midst of public holidays, or else financial activities would be severely affected. In this connection, he enquired about the rate of service recovery in Hong Kong as compared with that in other affected places/countries which also relied heavily on telecommunications services in conducting businesses such as Singapore.

23. DG/Tel responded that it might not be meaningful to draw such a comparison as different places/countries, due to their different geographical locations, were affected differently by the submarine cable damages and hence the difference in their rate of service recovery. He remarked that the professional standard of local operators in activating their contingency plans immediately after the incident had rendered the restoration of telecommunications services to a certain level in a short span of time. Nevertheless, review would be made with individual operators for further improvement of their contingency plans where necessary.

24. Mr Martin OEI, IT Columnist remarked, however, that as he understood it, Singapore had restored its external telecommunications services within 48 hours which was faster than Hong Kong. He considered that one of the reasons for its speedier recovery was due to the fact that the SingTel, the major shareholder of which was the Singapore government, played a proactive role in the operation of the cable systems that passed through Singapore. For example, SingTel owned 60% of C2C Submarine Cable and held major stakes in SEA-ME-WE-3 (SMW3) and SEA-ME-WE-4 (SMW4). However, Hong Kong did not have the same competitive advantage in this respect as the Hong Kong-based submarine cable operator, REACH, only held a major interest in the Reach North Asia Loop (RNAL) cable system.

25. Sharing Mr OEI's view that Singapore had restored its services faster than Hong Kong, Mr Ricky WONG of HKBN cautioned that in the wake of the recent outage which revealed that Hong Kong was slower in service recovery than its neighbouring countries such as Singapore, international organizations might re-assess Hong Kong's position as the regional telecommunications hub.

26. Mr Charles MOK of ISHK, however, remarked that due to Singapore's geographical location, its operators could use alternative routings to pass the telecommunications traffic through other directions. He added that while he did not have objective data on the rate of service recovery in different places/countries, Hong Kong, as the regional telecommunications hub with the highest transmission capacity in terms of submarine cables and satellite, had recovered much quicker than neighbouring places like Taiwan and South Korea. The reason was that unlike Hong Kong's large corporations the network hosts/servers of which were located locally and had thus been able to respond quickly to the incident, similar infrastructures in Taiwan and Korea were located

abroad in places like US, and hence it took the large companies there longer time to resume normal operation. He also shared with the meeting that although the Mainland had suffered a greater degree of damages to its submarine cables, the impact of the incident on the Mainland users was generally smaller as the Mainland did not rely heavily on external telecommunications services and the users were accustomed to slower speed in accessing the Internet. As such, Mr MOK considered that apart from the degree of damages to the submarine cables in the areas concerned, there were also other factors which affected the rate of service recovery in different places/countries.

*Contingency plans activated by operators and backup capacity*

27. Mr Howard YOUNG cited airlines' experience in implementing contingency measures in case of air incident, whereby assistance would be sought from partner airlines, and priority treatment would be accorded to passengers of the first-class or business-class cabins of the concerned airline. Since similar arrangement for mutual assistance had also been made between local operators during the incident, he enquired whether priority treatment had likewise been given.

28. In response, Mr Charles MOK of ISHK said that there was priority treatment amongst operators and hence some operators could restore their services faster than the others. Mr Oswald KWOK of Hutchison informed, however, that as Hutchison could restore its services early, it was able to provide assistance to local operators as well as those in the region such as those in Taiwan, the Philippines and South Korea. Since the objective of Hutchison was to restore telecommunications services in the region as soon as practicable, assistance was rendered to those operators without any priority treatment involved.

29. In this connection, DG/Tel said that arrangements for mutual assistance amongst local operators during the recent outage had proved to be effective in alleviating the impact of the incident. As such, he stressed that unless there was market failure, the Government would not intervene in the commercial arrangements between operators which were currently operating well in the market.

30. Mr Martin OEI, IT Columnist, however, expressed reservation on DG/Tel's response as he considered that the market mechanism was only working effectively among the rest of the local operators but not PCCW, which had failed to completely restore its services within 72 hours.

31. Echoing Mr Martin OEI's view, Mr Ricky WONG of HKBN made reference to the circumstance in which a note-issuing bank (i.e. PCCW in the present case) which was supposed to be financially healthy but turned out to have bank runs. He considered that market failure had already occurred due to unhealthy competition. As such, he called on the Administration to consider

setting up a "safety net" for the telecommunications sector. In this connection, he also questioned why both OFTA and the Consumer Council had refrained from publicizing the name of the operator which had been very slow in resuming its Internet services during the incident.

32. In response, DG/Tel reiterated his view that the difference in the rate of service recovery of individual operators was indeed an effective indication of their service differentiation. If emergency support were to be obtained from the Government during outages and "safety net" provided, operators would not have any incentive to invest on backup capacity, and hence the adverse impact on market competition. As such, DG/Tel stressed that service differentiation in the case of outages could provide incentives for operators to make commercial decisions as to whether investment should be made on backup capacity in order to ensure their service quality during traffic outages.

33. Highlighting the claim that PCCW had been slow in restoring its services was just a competitor's sales talk, Mr Stuart CHIRON refuted the claim. He said that having noted that seven of its eight submarine cables had been damaged as a result of the earthquakes, PCCW had immediately activated its contingency plan, and diverted network traffic northward through the Mainland and southward through Singapore, etc. It had also cooperated with carriers worldwide to bring services back as fast as possible. He stressed that PCCW was not slow in any respect, and the restoration of its services was fast and professional. He added that as evidence had shown that the telecommunications market had been operating effectively, PCCW did not consider that there was any particular role for OFTA to play other than the establishment of the two working groups for review of the outage reporting mechanisms. On the suggestion that OFTA should purchase backup capacity, Mr CHIRON said that he could not see how OFTA could suddenly make a huge investment on capacity as the investment on which required careful and prudent planning. He maintained that the issue of backup capacity should be left to be determined by the market.

34. Referring to Mr CHIRON's refutation that PCCW was slow in restoring its services was but a sale's talk, Mr Ricky WONG of HKBN requested OFTA to provide the number of complaints received against individual operators during the recent outage so that the public could have a clear picture on the performance of each local operator. In response, DG/Tel remarked that as the number of complaints received by OFTA during the outage might not reflect the actual service standard of local operators, the publication of it might be misleading.

35. Agreeing with deputations' views that it was of paramount importance for Hong Kong to maintain its status as the regional telecommunications hub and to be able to meet challenge, Ms Emily LAU was pleased to note that OFTA had convened a meeting on 3 January 2007 with local and external FTNS operators, and established two working groups to review the outage reporting mechanisms. She was of the view that the meetings of the working groups should preferably be held in public to enhance transparency. She also considered that it might not be

entirely desirable to adopt a government-led approach in the local telecommunications market if the market could operate effectively. The Government should instead provide a conducive business environment to promote market competition. In this connection, she sought clarification from OFTA as to whether it knew of the reasons for PCCW's slow response in the incident, and whether OFTA considered the performance of PCCW in this incident acceptable.

36. In reply, DG/Tel said that regarding individual operators' performance during the incident in the restoration of their services to customers, OFTA would review with them their backup capacity and contingency plans, and would provide them advice where necessary. Guidelines/code of practice would be issued for their observance. OFTA would also encourage them to publicize details of their contingency plans to enable consumers to make informed choices.

37. Ms Emily LAU was very surprised to note that OFTA, being the regulator of the telecommunications services, was unaware of the backup capacity as arranged by the local operators.

38. DG/Tel advised further that subsequent to the liberalization of the telecommunications market, individual operators had rolled out their own networks to provide telecommunications services, and their network design was not subject to the Government's approval. He assured members that the capacity of these networks as a whole could provide the entire territory sufficient backup capacity to meet emergency needs. Nevertheless, individual operators might consider making additional investment on their network capacity in order to maintain, as well as enhancing, their competitiveness. Highlighting the effectiveness of the local telecommunications infrastructure which had rendered Hong Kong the renowned reputation as the international financial and commercial centre, he remarked that the public should remain confident in its reliability as the current outage was only caused by a rare and unpredictable natural disaster.

#### *Role of OFTA and its reaction in the incident*

39. On the role of OFTA, DG/Tel stressed that in line with the Government's policy of "Small Government, Big Market", OFTA had adopted a market-led approach in regulating the telecommunications market. Mr Charles MOK of ISHK added that as the local industry supported an open telecommunications market, he also considered it undesirable for the Government to adopt a government-led approach in the regulation of the telecommunications services.

40. While agreeing that the Government should not have too much intervention in the telecommunications market, Mr Ronny TONG expressed concern on the role played by OFTA as the telecommunications market was subject to regulation under the Telecommunications Ordinance (TO) (Cap.106). He considered that OFTA should be incumbent to ensure that licensed operators

could, inter alia, meet the required standard when delivering services to customers, such as putting in place contingency measures for restoration of services in case of outages without any delay. In this connection, he sought information on why OFTA, being the regulator, did not immediately notify the public of the outage.

41. In response, DG/Tel said that detailed explanation on the outage, including reasons for service disruptions and estimated time required for repairing the damaged submarine cables, was made by OFTA at 5:30 pm on 27 December 2006. The reason for not making earlier notification was due to the fact that reporting on the outage of submarine cable systems was not required under the existing mechanisms since cable outage in the past normally did not have significant impact on telecommunications services because of the availability of alternative routings. As such, OFTA had not received any report from the operators about the impact of cable damages on the telecommunications services in the evening of 26 December or the morning of 27 December 2006. He pointed out that in fact, only one to two cables were damaged after the earthquake took place on 26 December 2006 when the external telecommunications services could still be maintained normal. However, due to subsequent quakes in the morning of 27 December 2006, the other cables broke down one by one, which had resulted in serious disruptions to external telecommunications services and Internet traffic congestion, especially when business had partly resumed on 27 December 2006 after the public holiday.

42. DG/Tel advised further that as soon as OFTA had received public and media enquiries in the morning of 27 December 2006, it had immediately requested the operators to provide information on whether there had been outage with Internet and IDD services, the extent and the cause. Having received reports from the operators in the late afternoon of 27 December 2006, and gained a better picture of what had happened, the scale of outage and the actions that the operators had been taking, a senior directorate officer of OFTA immediately updated the electronic media at 5:30 pm, and a press statement was also prepared for issue to the public.

43. DG/Tel considered that both the operators and OFTA should bear the responsibilities for reporting to the public major network outages. For users who experienced difficulties in accessing the Internet, they should approach their service providers for enquiries, and the latter should, as far as practicable, notify users of the service disruptions via their service hotlines or websites. In case the service disruption was a major one which affected the telecommunications services of the entire territory, OFTA would, after collecting and collating the relevant information from operators, report to the public the details of the outage. Regarding the recent outage, he considered that it was the outage reporting mechanisms, rather than OFTA's reaction, which required review and improvement. As such, two working groups were established for such purpose.

44. Noting that the Telecommunications Authority (TA) had the role to ensure that the service standard was to be maintained, Mr Ronny TONG enquired whether OFTA had mapped out any contingency plans for major incidents, and if so, the details of the contingency plans and the reasons for not activating the plans during the recent outage, and if not, whether OFTA would consider putting in place contingency plans. Moreover, for effective regulation of operators, Mr TONG considered that OFTA should also request operators to put in place, as well as implementing, appropriate contingency measures during outages.

45. In response, DG/Tel advised that OFTA had contingency mechanism for handling network congestion in the event of inclement weather or other emergency situations. Upon receipt of notification from operators about network congestion, the contingency mechanism would be activated immediately, whereby coordination among network operators would be made to minimize the adverse impact of the network congestion on the general public. Where necessary, OFTA would also make public announcement through television or radio stations to notify the general public of the network congestion. DG/Tel pointed out, however, that this contingency mechanism was not applicable to the present incident as reporting on the outage of undersea cable systems was not required under the existing reporting mechanism. Nevertheless, individual operators had already activated on their own the contingency plans, and arranged for the re-routing of the traffic via terrestrial cables or west-bound submarine cables. Some operators had also approached other operators for backup bandwidth capacity in order to restore their services as soon as practicable. DG/Tel considered that for further improvement to contingency measures during emergencies, cooperation between the operators should be enhanced, but the Government would not interfere with the operators' commercial negotiations for interconnection.

46. Mr Ronny TONG was unconvinced. As it was obvious to him that the market-led approach had resulted in slower restoration of services by some operators, he considered that OFTA, as the regulator, should draw up an overall emergency plan in order to ensure that there would be consistency in service restoration amongst all operators. In this regard, he sought clarification on whether TA was empowered to do so under TO.

47. DG/Tel reiterated that the difference in the level of backup capacity as secured by individual operators for restoration of their services would result in service differentiation, which was an indication of the operation of the market mechanism that OFTA had all along strived to encourage and promote. On TA's power as provided under TO, DG/Tel advised that TA might direct a licensee to coordinate and cooperate with another licensee to share the use of the bandwidth facility only when the facility was a bottleneck facility. He, however, pointed out that the outage in question had not given rise to bottleneck situations as there were a number of alternative routings such as overland cables and submarine cables to the west for diversion of the congested traffic.

48. While agreeing that under the market-led approach, network operators should be left to decide on their own network design and network capacity, Mr SIN Chung-kai queried about the asymmetric arrangement under which cables from the Mainland could pass through Hong Kong but not vice versa. He also enquired whether any measures would be taken by the Administration/OFTA in addressing the issue.

49. Highlighting that the Mainland terrestrial cable systems had attributed to the efficient restoration of Hong Kong's external telecommunications services during the incident, DG/Tel said that consideration would be given to assisting, at policy or regulatory level, local operators in acquiring sufficient bandwidth from the Mainland networks. As to whether local operators could install cables which could run through the Mainland, it was a matter involving the regulatory policies of the Mainland authorities. Nevertheless, OFTA would step up communication and cooperation with the Mainland authorities so as to facilitate the acquisition of network capacity by local operators.

50. Noting the Administration's response, Mr SIN Chung-kai reiterated that the local operators could only lease capacity from the Mainland cable operators whereas Mainland cables could route through Hong Kong, and hence the unfair competition between the two sides. As such, he urged that proactive assistance should be provided by the Government and OFTA to local operators on their access to the Mainland market. DG/Tel took note of Mr SIN's concerns, and assured that OFTA would continue to explore with local operators the assistance they required.

51. Mr Albert CHAN expressed grave concern on OFTA's slow reaction in the incident and in undertaking appropriate actions. He said that notwithstanding the news published on Mainland websites about network disruption a few hours after the occurrence of the earthquake at 8:26 pm on 26 December 2006, OFTA still seemed to be unaware of the incident until the receipt of the first public enquiry on the network outage. He considered OFTA's inaction during the 13 hours between the occurrence of the earthquake (i.e. at 8:26 pm on 26 December 2006) and the receipt of the first enquiry (i.e. at 9:25 am on 27 December 2007) unacceptable. Even worse, OFTA had to analyze and collate information collected from all operators before briefing was made to the electronic media and the press release was issued in the evening of 27 December 2006. Mr CHAN opined that OFTA's slow reaction had aggravated the congestion problem as members of the public had not been timely informed of the situation, and hence their competition for limited services which had worsened the network congestion problem.

52. Mr Martin OEI, IT Columnist added that Radio Television Hong Kong had already broadcast about network outage as early as 10:30 am on 27 December 2006. He was very surprised to note that OFTA had been unaware of the damages caused by the earthquakes to the submarine cables.

53. In reply, DG/Tel clarified that OFTA was not unaware of the damages to the undersea cable systems. However, having regard to the public expectation for specific and accurate information about the incident, OFTA had to obtain reports from local operators before accurate information, such as the extent of cable damage, the estimated time for repairing the cables and actions taken by local operators, could be provided to the media and the public for useful reference. As such, the press statement was issued in the evening of 27 December 2006 after OFTA had received reports from local operators in the late afternoon and had gained a relatively comprehensive picture of the situation.

54. Mr Albert CHAN was unconvinced. Citing the example of road traffic congestion, he pointed out that the Transport Department would notify the public immediately after the congestion occurred with a view to diverting the flow of traffic away from the congested area. In the present case, he opined that to safeguard public interest, OFTA should have publicized as soon as possible any information available about the outage so that the public could be informed earlier of what had happened. He considered OFTA wanting in the sense of crisis management.

55. Concurring with Mr Albert CHAN that OFTA should make public announcement as soon as possible so that users could choose alternative means for communication, the Chairman also could not accept that it had taken OFTA 22 hours after the occurrence of the earthquakes for making announcement to the public about the network outage.

*Small and medium enterprises (SMEs)*

56. Ms Emily LAU was very concerned about the impact of the incident on the operation of SMEs which had all along been quite reluctant to migrate to e-business due to the various difficulties encountered. She then sought information and figures, if any, on the extent of damages suffered by SMEs in the incident, and whether they had been covered by insurance, if such was available.

57. In response, DG/Tel said that although OFTA had not received any related complaints from SMEs, the Government was mindful of the serious impact of the incident on SMEs. Consideration would be given to issuing guidelines to help SMEs improve their IT applications so as to minimize the adverse impact brought on them by similar incidents in future.

58. Ms Emily LAU did not subscribe to the Administration's response. Apart from issuing the guidelines, she urged the Administration to be more proactive in rendering assistance to SMEs such as by gaining more understanding about their losses so suffered, and whether their external telecommunications services had been restored.

59. In this connection, Mr Howard LAU of PISA informed that as SMEs might not have the resources to acquire dedicated leased lines, ISPs might have prioritized SMEs' needs for resumption of Internet applications below those of large corporations and banks. Moreover, as free email services provided by overseas websites such as Yahoo and MSN were completely unavailable during the outage, SMEs using those email services were unable to communicate with their business partners. Furthermore, some local websites maintained by SMEs, which had used overseas domain names such as ".com" or ".net" and required decoding by overseas servers, had suspended operation during the outage. As such, the recent outage had cast severe impact on SMEs' operation and hence their suffering of great losses.

*Consumer information in relation to broadband Internet services*

60. Recalling that OFTA had commissioned Hong Kong University of Science and Technology R&D Corporation Limited to carry out a technical study by conducting technical tests on five key performance indicators for each of the four major broadband ISPs, Mr Ricky WONG of HKBN called on the Administration to publicize the findings of the study to enable consumers to make informed choices for subscription of broadband service.

61. In response, DG/Tel said that the technical performance study was conducted in late 2005. He then referred to the TA Statement subsequently published in May 2006 which had expressed concern about the effect upon the public of the publication of raw technical data. He explained that this was because the engineering features of networks were an incomplete basis for concluding which was a better broadband service from a user's perspective. Moreover, there was a risk that the raw results from the technical study might be misconstrued, which might have bearing on the fair market competition. Since TA did not intend to disrupt market competition in the provision of broadband service, it had therefore resolved to undertake an ancillary study into actual residential user knowledge and use of broadband, which would include specific consideration of the circumstances leading to consumer complaints. A consultant had been appointed to undertake this survey of residential broadband users, and most of the broadband ISPs had agreed to participate in the survey. Since the survey would soon be completed and a report on the way forward would be published in due course, DG/Tel considered that it might not serve any purpose for OFTA to publish at this moment the findings of the technical study.

62. The Chairman remarked, however, that whether the information contained in the report was useful or otherwise would be a matter to be decided by the Panel. He requested OFTA to provide the report of the technical performance study to the Panel for members' reference. He also sought information on when the report on the broadband consumer survey would be available.

Admin

63. DG/Tel advised that OFTA had followed the Government's established procedures in commissioning the survey study. While it was expected that the study would be completed within a few months' time, the actual time required for completion of the study and hence the availability of the report were subject to a number of factors. Nevertheless, he undertook to provide after the meeting information on the deadline as specified in the consultancy contract relating to the survey study.

64. In this connection, Mr Ricky WONG of HKBN pointed out that the nature of the survey study was different from that of the technical performance study. He reiterated his query as to why OFTA had refrained from publicizing the findings of the technical performance study which had evaluated the technical engineering aspects of individual service providers.

65. The Chairman then sought clarification from OFTA as to whether the survey study would cover the technical engineering aspects of the broadband ISPs. In reply, DG/Tel said that if the survey study showed that users were keen to know about the technical performance of broadband ISPs, OFTA would proceed to arrange for the relevant information to be publicized.

Admin

*(Post-meeting note: Mr Ricky WONG of HKBN wrote to Panel members on 22 January 2007 expressing his further concerns on OFTA's non-publication of the results of the technical performance study conducted in 2005. The English and Chinese versions of OFTA's reply were circulated to members vide LC Paper No. CB(1)942/06-07(01) on 13 and 27 February 2007 respectively.)*

#### Way forward

66. Having regard to the views and suggestions expressed by the deputations and members at the meeting, as well as those made in deputations' submissions, Ms Emily LAU requested the Administration to provide a comprehensive report on the incident, including the grounds of accepting or rejecting those suggestions, and the reasons for PCCW's slower response during the incident as compared with other local operators. In examining the suggestions, Ms LAU urged the Administration to consider whether those suggestions were conducive to the overall development of Hong Kong, since the adoption of measures which could improve the telecommunications infrastructure could help attract more people to invest in Hong Kong.

67. Mr SIN Chung-kai agreed with Ms Emily LAU, and considered that a post-mortem analysis on the incident should be made to see what improvement measures could be taken. In particular, the Administration/OFTA should assess the restoration capabilities of local operators and draw a comparison with those of overseas operators in order to ensure that Hong Kong could continue to position itself as the regional telecommunications hub.

Admin

68. In conclusion, the Chairman requested the Administration/OFTA to provide a post-mortem evaluation report on the Internet disruptions, including issues such as actions taken by OFTA during the first 13 hours (i.e. the period between the earthquake happened at around 8:26 pm on 26 December 2006 and the receipt of the first public enquiry relating to Internet service failures at 9:25 am on 27 December 2006); improvements to be made to the outage reporting mechanisms; contingency measures to be drawn up; grounds for accepting or rejecting deputations' suggestions made in relation to the incident; the Administration's comments on PCCW's restoration capabilities; and comparison between the restoration capabilities of local operators and those of overseas operators. OFTA should also provide the Panel with a copy each of the report on the technical performance study and the survey study for members' perusal. Ms Emily LAU added that the post-mortem report should also include detailed information provided by the responsible bureau/government department on the impact of the incident on and the difficulties encountered by the general public, SMEs in particular, as well as measures, if any, to be taken by Government to minimize the impact of similar incidents in future.

69. On the timing for provision of the post-mortem evaluation report to the Panel, DG/Tel advised that OFTA needed more time to discuss with the operators their contingency plans and the new outage reporting mechanisms to be put in place. OFTA would also need to examine whether the report of the technical performance study had contained any information which would be regarded as commercially sensitive.

70. The Chairman said that the Panel would re-visit the subject when the reports were ready.

**V. Report on the progress made by the previous Digital 21 Strategies**  
(LC Paper No. CB(1)670/06-07(03) -- Paper provided by the Administration)

Introduction by the Administration

71. The Government Chief Information Officer (GCIO) said that at the meeting held on 13 November 2006, members requested the Administration to report on the progress made in the implementation of the Digital 21 Strategy since its inception in 1998. As such, the Administration had compiled a report on the progress made in information and communications technology (ICT) development pertaining to the previous Digital 21 Strategies released in 1998, 2001 and 2004, which was forwarded to members vide LC Paper No. CB(1)670/06-07(03). He remarked that through the concerted efforts of the Government, business, industry, academia and the public, good progress had been made. Hong Kong was amongst the leading economies in the world where ICT was widely and prevalently used across the society, e.g. in business, education and all kinds of personal services affecting the daily living. Hong

Kong was ranked by the International Telecommunication Union as the fifth in the world in terms of digital inclusion. He stressed that ICT advancement over the years had enhanced the competitiveness of Hong Kong as a service economy and the quality of living of the citizens. In order to maintain Hong Kong's edge in the fast changing world of technology, the Administration would continue to work on the next update of the Digital 21 Strategy.

72. With regard to the public consultation on the 2007 Digital 21 Strategy which was completed in December 2006, GCIO informed that around 70 submissions were received from organizations and individuals. In general, the public agreed that the Government's continuous leadership and commitment on ICT were required to maintain Hong Kong's position as a world leading digital city as well as building an inclusive, knowledge-based society. Nevertheless, issues relating to information management and intellectual property rights protection had become areas of increasing focus. GCIO advised further that prudent steps had been undertaken by the Hospital Authority to share electronic records with the private sector. Moreover, a strategy for adopting electronic means for information management would be formulated so as to improve data accessibility within the Government, while at the same time strengthening information integrity and security. The Administration aimed to publish the next Digital 21 Strategy within the first half of 2007 after considering comments from the public.

### Discussion

#### *Promotion of ICT and assistance provided to SMEs*

73. Ms Emily LAU opined that to promote ICT among SMEs, the Government should pay heed to the need of SMEs and provide the necessary support to encourage them to migrate to e-business. In this connection, she referred to the discussion made under the previous agenda item on issues relating to Internet disruptions caused by earthquake damage to undersea cables, and expressed grave concern on the economic losses incurred by SMEs in the incident. While little help had been rendered by OFTA, the regulator of the telecommunications industry, to assist SMEs in overcoming the IT crisis and resuming normal operation, she wondered if the Office of the Chief Information Officer (OGCIO), which was responsible for devising IT security policies and guidelines as well as technical measures, had a role to play in the issue, such as making assessment on the impact of the network outage on SMEs and assisting them in overcoming the difficulties so encountered, etc.

74. In response, the Deputy Government Chief Information Officer (Operation) (DGCIO(O)) assured members that OGCIO had all along attached importance to assisting SMEs in pursuing measures to enhance information security. In collaboration with the IT sector, OGCIO had published the SME Information Security Guideline which was uploaded onto the Internet for reference by SMEs. The Guideline provided guidance to SMEs on how to

manage information security threats by providing information on areas such as incident response to minimize the impact of network outages and business continuity planning, backup and recovery. OGCIO would continue its efforts in promoting good practices of information security among SMEs. On the Internet outage caused by the recent earthquakes, DGCIO(O) said that according to his understanding, the external telecommunications services had not been totally suspended but was maintained at a lower service level. As of today, around 70-80% of the services had resumed normal. He added that given the differences in the mode of operation of SMEs, nature of business they engaged in and the trading partners they had, it was difficult to provide information on the specific difficulties encountered by SMEs during this incident. GCIO remarked that as Hong Kong was increasingly dependent upon ICT, he noted members' concern as to whether Hong Kong needed a mechanism to keep abreast of incidents that might impinge upon or cause major outages in the use of the Internet. He undertook to take the matter up with the relevant parties to see if some improvement measures could be made.

*Building a digitally inclusive society*

75. Mr Albert CHAN said that given the slow and unsatisfactory response of OFTA during the current outage, he was of the view that the scope of Digital 21 Strategy should cover the review on the operation of OFTA and identify areas for improvement, before the vision of the Strategy, which was to develop Hong Kong into a leading digital city in a globally connected world, could be achieved. In this connection, he was concerned that notwithstanding the Strategy's objective of moving Hong Kong towards an inclusive, knowledge-based society, low-income families and their children could not afford to buy computers and hence their difficulty in keeping pace with the development of the society.

76. In response, DGCIO(O) advised that as set out in the public consultation document on the Digital 21 Strategy (i.e. LC Paper No. CB(1670/06-07(03)), the Government, in addressing the digital divide issue in the society, had already installed more than 5,000 public computers with Internet access at various locations for free public use. Moreover, under the Computer Recycling Scheme implemented by the Education and Manpower Bureau (EMB), around 20,000 refurbished computers had been made available for application by students in needy families. By the deadline of the Scheme, about 10,000 refurbished computers had been taken up. He added that the Government would lead discussions involving the ICT industry in areas such as "Broadband connectivity for every citizen" and "Allowing every student access to ICT facilities to support learning". A forum involving the ICT industry had been scheduled for February 2007, and the views received would be taken into consideration when the Digital 21 Strategy was finalized. Mr Albert CHAN then requested and DGCIO(O) undertook to seek further information from EMB regarding the details for applying refurbished computers under the Computer Recycling Scheme for members' information.

*(Post-meeting note: The information on application for refurbished computers under the Computer Recycling Scheme as provided by the Administration was circulated to members for reference vide LC Paper CB(1)900/06-07(01) on 6 February 2007.)*

**VI. Any other business**

77. There being no other business, the meeting ended at 12:58 pm.

Council Business Division 1  
Legislative Council Secretariat  
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