

INFORMATION INFRASTRUCTURE ADVISORY COMMITTEE

**Development of Mobile Multimedia Messaging Services
in Hong Kong**

Purpose

This paper briefs Members on the latest development of Multimedia Messaging Services (MMS) and other types of non-voice mobile services in Hong Kong.

Background

2. MMS is an evolution of Short Message Services (SMS). SMS allows mobile users to send and receive text messages. MMS allows mobile users to send text, sound, graphics, still images and moving video in a single MMS message to other mobile users or computer terminals at fixed locations. Because of the larger amount of information carried, MMS needs to be operated over the upgraded second-generation (2.5G) or the future third-generation (3G) mobile services with higher data speeds and capacity.

3. The launch of 2.5G services in Hong Kong in 2000, based on the technologies of General Packet Radio Service (GPRS) over the GSM systems and IS-95B over the single CDMA system, provides the infrastructure for the introduction of MMS. As of March 2003, there were just over 300,000 2.5G users out of a total of nearly 6.4 million mobile customers or 4.7% of the total mobile customer population. Although this is a relatively low penetration, with the availability of more 2.5G handsets with larger and colour screens on the market, the number of 2.5G users has more than tripled over the six-month period ending

March 2003. The growth trend is continuing.

4. From 19 December 2002, all six mobile operators have achieved full interconnection for MMS. Therefore a MMS message can be sent by a mobile customer to another mobile customer of any network. Even if the intended recipients do not have MMS-enabled handsets, they will receive a SMS notification containing a web link and password so as to retrieve the MMS message via the Internet. In addition, MMS platforms are interconnected with the fixed networks such that MMS messages may be sent to e-mail addresses for retrieval and display on fixed computer terminals.

5. Apart from person-to-person (“P2P”) messaging, MMS provides a “person-to-content (P2C)” environment that allows different content and applications, including information, entertainment and transactions, to be offered to the mobile users. News and weather reports with images, stock quotes with graphics, road conditions with still images or short video clips, wallpaper, polyphonic ringtones, animation, games and other items for information, entertainment and mobile transactional services can be downloaded by the customers as MMS messages.

Future Development

6. MMS is one of many non-voice applications over mobile services. Apart from MMS, other non-voice applications of mobile services include location-based services, mobile e-mail, on-line games, web surfing, file transfer, video telephony, etc. Non-voice or data services contributed to approximately 5% of the revenue from customers. This is generally lower than mobile operators in other developed economies. On the other hand, Hong Kong’s take-up of 2.5G services of 4.7% at the end of March 2003 compares favourably with other countries and territories like Western Europe, Singapore and Taiwan. There are many factors driving the usage of mobile data services. The experience of South Korea and Japan shows that given the right ingredients in the environment, there is tremendous growth potential for mobile data services. We analyse below four key issues relevant to the future development in Hong Kong.

Charges

7. With enriched content and variable message sizes in MMS, the charging mechanism of MMS is necessarily more complicated than that for voice services and SMS. The Appendix gives the service charges offered by the six mobile operators in Hong Kong.

8. Most of packages for consumers for broadband Internet access at fixed locations are based on flat-charges for unlimited usage. There are practical problems with the introduction of such simple price packages over mobile data services because the capacity over the radio channels is limited and the operators cannot tolerate uncontrolled usage. However, the charging method of MMS is relatively complicated because the customers can be charged for a combination of monthly flat rate charges, sending charges on a per message basis, two-way data transmission charges and/or download charges depending on the nature and content of MMS messages. The market is also mixed with a combination of one-way and two-way charging mechanisms. Users may not be fully aware of the volume of data usage and may feel restrained in using the services for fear of being faced with bills of unexpected value.

9. It is more desirable to have a tariff that is straightforward and readily understood by the consumers. The consumers must be able to control their monthly bills for their services. Given our highly competitive mobile market, the Government does not regulate the structure or level of consumer prices. To stimulate take-up and usage of MMS, operators are encouraged to enhance transparency about its pricing, and to promote awareness of its mobile customers on pricing.

Interconnection and Interoperability

10. In December 2002, interconnection of the MMS platforms of the six mobile operators was achieved and they announced the launch of inter-operator MMS (IOMMS) whereby mobile customers could exchange MMS messages across and between all mobile networks in Hong Kong. Hong Kong is among the first in the world to achieve IOMMS.

11. Full interconnection cannot be assured unless the platforms operated by mobile operators are inter-operable, both within Hong Kong and outside Hong Kong, and with consumers' handsets of different makes and models. The interoperability of MMS platforms and handsets is help achieved by the compliance with a set of technical specifications developed by Third Generation Partnership Project (3GPP) and WAP Forum. There are however different options available in the technical specifications to meet different demands. Therefore compliance with the specifications cannot guarantee interoperability. To ensure compatibility, interoperability tests between MMSCs are still required.

12. Feedback from the industry to OFTA indicates that no significant interconnection problem for MMS has been detected. However, given the technical complexity involved, it is inevitable that some interoperability problems still exist at the early stage of service launch and interconnection.

13. To help achieve interoperability of mobile services across countries, operators and mobile terminals, leading equipment manufacturers, mobile operators, applications developers and content providers have formed in June 2002 the Open Mobile Alliance (OMA). OMA has issued a MMS conformance document aiming at addressing the issues about interoperability of MMS functions and features between handsets produced by different manufacturers.

14. The development of interoperability specifications is in the hands of industrial bodies like the 3GPP, the WAP Forum and OMA, as no single administration is in a position to formulate interoperability specifications between manufacturers of different countries. No telecommunications regulator has issued any specification or regulation on interoperability standards. The Telecommunications Standard Advisory Committee established by OFTA may perform a coordination function if required.

Handsets and Mobile Devices

15. Widespread availability of MMS handsets with larger, better

resolution and coloured screens at affordable prices is necessary to expand the usage of MMS. Capability to run Java applications and accessories which can generate MMS content, such as a built-in digital camera, would boost MMS usage. The choice of MMS enabled handsets and other mobile devices have greatly expanded in recent months and prices have come down significantly. Mobile operators and handset dealers are experiencing a surge in handset sale. It now appears handset choice and prices are no longer obstacles in the take-up of MMS compared with the situation one year ago.

Contents and Applications

16. Based on the experience of South Korea and Japan, one of the key drivers for the widespread penetration of non-voice mobile services is the wide variety of contents and applications available on the mobile phones. The “open network” arrangement of i-mode in Japan has often been cited as one of the successful business models for the provision of data services over mobile networks.

17. Wide variety of contents and applications requires the participation of a larger number of developers. The barrier to entry to the market of content and application development is relatively low. There is no need to invest and build the network. In fact, there are already many small and medium sized enterprises (SMEs) in Hong Kong specializing in the development of mobile content and applications.

18. However, SMEs do face some barriers in the development of mobile content and applications. As mobile handsets have different features in terms of screen size, resolution, memory capacity, sound capability, etc., developers need to adapt the content for handsets of different makes and models. They would need reference materials and facilities to support and test the development. Once the content and applications have been developed, they need the support of the mobile network operators before they can market their products to the mobile users. The Government intends to set up the Wireless Solutions Development Centre (WSDC) in the Cyberport to facilitate the development of mobile content and applications by SMEs.

19. Hong Kong has created a facilitating environment for content and applications providers not affiliated with mobile network operators to market their products over the 3G networks. It is an obligation for 3G network operators to make available at least 30% of the capacity of their networks for non-affiliated content and applications providers (the “Open Network Access” obligation). The 3G network operators are required to publish the tariffs for the conveyance service that they offer to content and applications providers. The tariffed prices should be cost-based, and the TA may set the tariffs if the published tariffs are unfair or anti-competitive. These are the issues which we can better publicize through the WSDC to facilitate the content and application providers.

Advice Sought

20. Members are invited to note the latest development and the measures to promote the usage of MMS and other types of mobile data services in Hong Kong.

Office of the Telecommunications Authority

June 2003

MMS Tariffs

Updated: 21 May 2003

| Services | CSL | SmarTone | Hutchison (Orange) | Peoples | New World Mobility | SUNDAY |
|-----------------|------------|-----------------|-------------------------------|----------------|-------------------------------|---------------|
|-----------------|------------|-----------------|-------------------------------|----------------|-------------------------------|---------------|

| Services | CSL | SmarTone | Hutchison (Orange) | Peoples | New World Mobility | SUNDAY |
|------------------|--|--|---|--|--|--|
| MMS service plan | Send : Monthly Charge/ free usage included/ additional KB a) \$49/1 MB/\$0.2 b) \$149/2 MB/\$0.16 c) \$248/6 MB/\$0.06 d) \$398/12 MB/0.05 e) \$488/18 MB/\$0.04 Download charge: \$5-15 (per MMS message) Receive: GPRS charge | Send: Monthly Charge: \$0 Usage Charge: \$1.5-8 (per MMS message) Receive: free during promotional period Download: \$8-20 (per MMS message) | Send: Monthly Charge/ Free usage (MMS message)/ additional (\$/MMS message) at peak hours a) \$0 /0 /\$3 b) \$9 /5 /\$2 c) \$38 /22/\$1.8 d) \$58/35/\$1.5 \$1.5/MMS message at off-peak hours Receive: Free Download: \$3-25 (per MMS) | Send: Monthly Charge: \$0 Usage Charge: \$1.5(per MMS message) Receive: free Download: \$5-15 (per MMS message) | Send : Monthly Charge/ free usage included/ additional KB a) \$10/0 MB/\$0.02 b) \$128/5 MB/\$0.02 c) \$228/10 MB/\$0.02 Download: \$2-20 (per MMS message) Receive: GPRS charge | Monthly Charge: \$0 Send: \$2 (0-100KB) (per MMS message) Receive: Free (Waived during promotion) |

