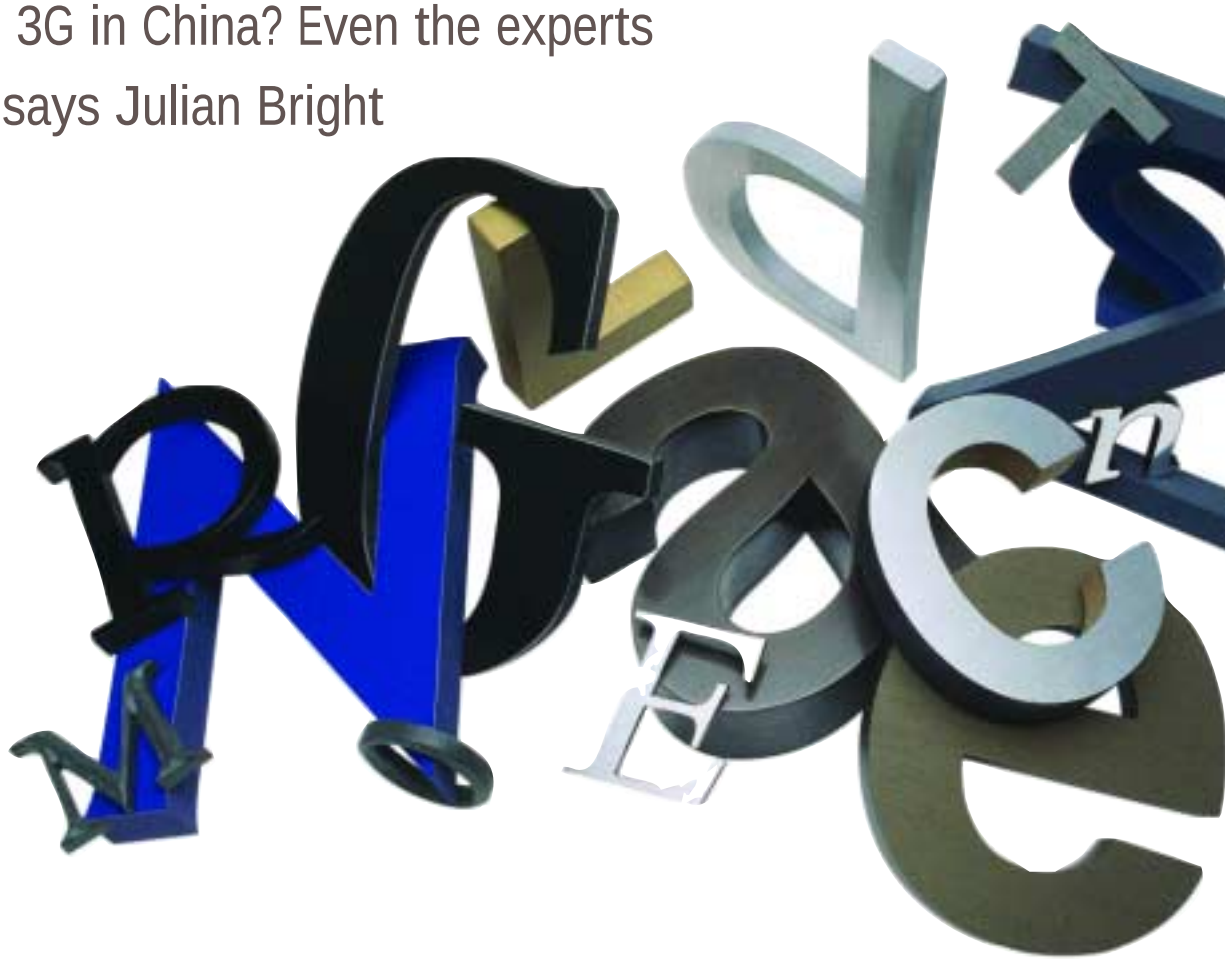
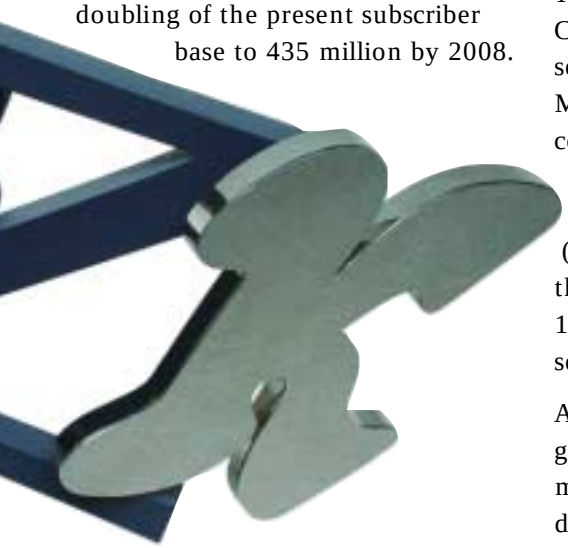
CHINA SENDS MIXED MESSAGES

Will this year see the first moves towards commercial 3G in China? Even the experts are divided says Julian Bright



In 2001, China overtook the United States to become the world's largest mobile market. By the end of 2002 it had far outstripped the US with 205 million mobile users, compared to the North American market's 150 million. China Mobile Hong Kong (CMHK), which despite its name owns mobile businesses exclusively in mainland China, ended the year with an estimated 120 million subscribers and was the world's largest mobile operator.

Analysts at Ovum believe that the next five years will see China effectively achieve mobile saturation of around 30 to 35 per cent. Though low in percentage terms compared to many parts of Asia and western Europe, that is not surprising given China's vast and economically disadvantaged rural population. However, in a country of over 1.2 billion people the numbers are huge. Ovum is forecasting a doubling of the present subscriber base to 435 million by 2008.



Last year saw record growth, with CMHK and its major mobile competitor, China Unicom, adding a combined 60 million new customers, and boosting subscriber numbers by around 40 per cent. Thanks to some aggressive marketing, China Unicom successfully met its target of attracting 7 million new users to its Horizon CDMA service in its first year, migrating many from its own GSM service in the process.

At CMHK, data services developed rapidly in the first half of 2002, and contributed Yuan 3 billion (US$360 million) to revenues, a company spokesperson told *3G Solutions for Operators*. The operator reports that new business revenues accounted for 5.4 per cent of total operating revenue, an increase from 3 per cent in the previous full year period. Currently, SMS is the primary application, with usage up ten-fold over the same period last year.

The GPRS network launched by CMHK in May 2002, supporting services under the umbrella of its Monternet mobile data brand, now covers 240 cities throughout China. In October, the company followed up with its multimedia messaging (MMS) service, and according to the UMTS Forum, attracted 1.3 million GPRS subscribers over a seven week period during 2002.

Although the company won't confirm growth figures, it says that the major market for GPRS is in the more developed, eastern coastal area of China. CMHK believes that the market demand for GPRS services will grow rapidly if conditions are right. 'Currently, the major challenges for both GPRS and CDMA20001x are neither technical problems nor attainable transmission rates,' comments a CMHK spokesperson. 'Rather, the development and emergence of compelling applications and services has become the crucial factor for success.'

Slowing growth

But behind these success stories of 2002 there were concerns about some aspects of the market. There was unease about the cost of acquiring new subscribers, particularly on the part of China Unicom. The company has admitted that in the first half of last year it spent US$66 million providing free handsets to end users. According to Goldman Sachs, Unicom was spending US$300 per new subscriber in the first half of 2002, while only generating an ARPU of between US$20 and US$25.

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Beijing-based analyst BDA China concludes that, 'with subsidies fuelling subscriber growth, and ARPU (average revenue per user) numbers difficult to evaluate, it is hard to tell just how meaningful the acceleration in CDMA subscriber growth is and how valuable China Unicom's new CDMA subscribers really are.'

However, BDA's managing director, Duncan Clark, believes Unicom is now moderating its aggressive approach to focus on rollout of its new CDMA20001x network, which is due to be completed around the middle of the year, and which will ▶

double network capacity to 30 million lines.

Despite its own criticism of Unicom's subsidies, China Mobile has decided to follow suit, and subsidise a limited number of handset sales in a bid to move existing high end users up to the new generation of phones. The programme covers 300,000 handsets including camera phones, and allows existing CMHK subscribers to use bonus points they earn from their current consumption to help offset the price of a new GPRS/MMS handset.

Another concern is that there were also signs of overall cellular growth levelling off or even slowing towards the end of 2002. For example, CMHK was reporting growth down to around 2 million new users per month (around 1.77 per cent) as against a national rate of 2.29 per cent. Though still impressive, this has prompted some observers to talk of China as a maturing market, despite a mobile penetration level of only 15.5 per cent.

The analysts are divided as to prospects for 2003. Ovum is predicting only marginally reduced growth, with 264 million mobile users forecast by the end of the year (ie. an additional 59 million users). Analysts at Goldman Sachs, on the other hand, expect growth in 2003 to slow markedly to 3.6 million new users per month (ie. 43.2 million new users), compared to 4.6 million during 2002.

As well as looking for organic growth, CMHK is in the process of acquiring regional operating companies from its parent, China Mobile. This process continued during 2002 and extended the number of regional operators under CMHK's ownership to 21. 'External growth, as well as organic growth, is CMHK's long standing business development strategy,' says a CMHK spokesperson. 'As for when and which assets to acquire next, it will be determined by the market and company situations, no timetable and plans are drawn at this stage.'

Mobile data prospects

Not surprisingly, forecasters expect China to outstrip other world markets for mobile data services, just as it has in other areas. New research from the UMTS Forum shows China ranked second among the top five markets worldwide for 3G by 2010.

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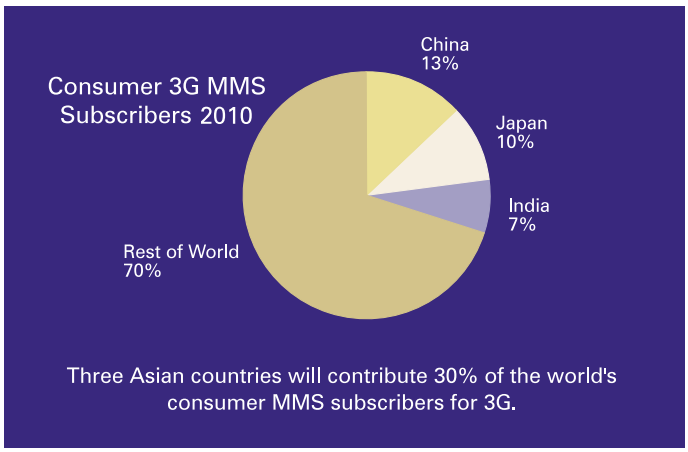
Of Asia's forecast 700 million mobile data subscribers, the Forum says almost half will by then be in China, and annual revenues from 3G/UMTS services in the region will be around US$118 billion. The most popular services are expected to be customised infotainment, voice, mobile intranet/extranet, and MMS.

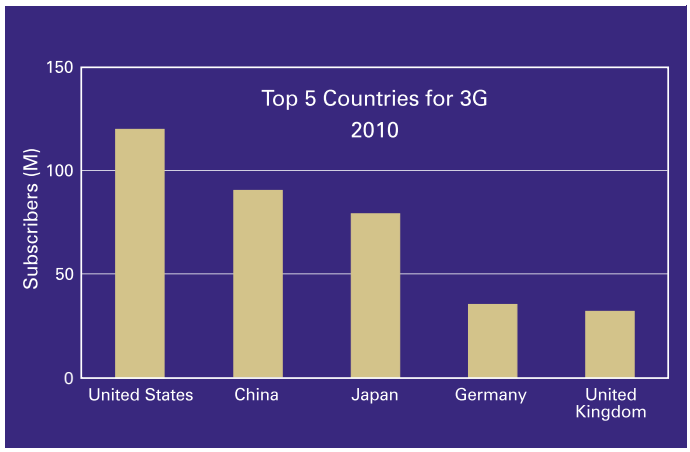
The MMS experience will be an important driver for 3G, says the UMTS Forum, with China having 13 per cent of 3G MMS users worldwide by 2010. In markets such as Japan and Korea the success of services like 'Sha-mail' picture messaging is 'good news for the 3G world because identifying the right

Current MMS market experience will make Asian counries leaders in 3G MMS



Source: UMTS Forum Report 17

The top five most important markets for UMTS/3G include China and Japan



Source: UMTS Forum and Telecompetition Inc August 2002

Projected growth in Chinese market

CHINA

		2002	2003	2004	2005	2006	2007	2008
Total connections (000s)	1 Jan	–	205,286	264,408	318,150	364,513	403,162	434,727
Penetration (%)	1 Jan	–	15	20	23	27	29	31
Total revenues ($ million)	for the year	24,663	32,446	40,547	48,423	55,417	61,620	–
Overall ARPU ($)	for the year	141	138	139	142	144	147	–

VOICE

Voice connections (000s)	1 Jan	–	204,362	263,218	316,718	360,066	396,147	425,206
Voice revenues ($ million)	for the year	23,915	30,860	37,696	43,991	49,154	53,388	–
Voice ARPU ($)	for the year	137	132	130	130	130	130	–

DATA

Data connections (000s)	1 Jan	–	52,254	83,927	122,430	162,325	200,632	235,464
Data revenues ($ million)	for the year	748	1586	2851	4432	6263	8232	–
Data ARPU ($)	for the year	19	23	28	31	35	38	–

NEXT GENERATION

GPRS/EDGE connections (000s)	1 Jan	–	257	2,820	14,018	40,187	81,101	129,674
W-CDMA connections (000s)	1 Jan	–	0	0	0	615	3034	10,028
cdma2000 connections (000s)	1 Jan	–	0	67	606	2665	6690	12,405

Source: Ovum

services is important,' UMTS Forum chairman Dr Bernd Eylert told *Total Telecom* in December. 'Looking at how customers in the AsiaPac region have accepted these services and applications, I think operators in other parts of the world can be more optimistic about generating revenues,' he added.

Another important driver for 3G will be wireless LAN (WLAN), which will give some users an early taste of high-speed data services. According to the ITU's Asia-Pacific Telecommunication Indicators, by October 2002 China Unicom had installed 13 WLAN hotspots and Guangdong Telecom 40, in hotels, business centres and shopping centres across the country. China's regulator, the Ministry of Information Industry (MII), has assigned the special frequency band of 5.5GHz for WLAN in China.

With four 3G licences expected to be issued by the MII, all eyes are on China just now. As well as China Mobile and China Unicom, the two fixed operators China Telecom and China Netcom are likely recipients, although the MII has apparently not yet decided on which technologies will be selected. Some observers believe that these licences will now be issued in 2004, although work on UMTS continues apace with leading vendors running trials in China's major urban centres including Beijing and Shanghai.

With no obligation on operators to deploy 3G networks for capacity reasons, Duncan Clark believes that China will take a pragmatic approach and a 'wait and see' attitude to 3G. 'There's not much incentive for policy statements,' says Clark, particularly with political changes continuing within China's ruling party, and work at the MII currently on hold. He thinks that commercial deployment will probably start in mid-2004.

However, according to a Reuters news agency report in January, the Chinese media have quoted Lu Tingjie, a leading academic and member of a group that prepared a report on 3G mobile phone technology for the Chinese government, as saying that China plans to issue four 3G licences sometime this year. However, the ▶

Lucent in China

Lucent is providing a total UMTS solution, including the UTRAN and core network, for the China MII 3G WCDMA trial in Beijing. The trial, which is using Qualcomm UMTS terminals and Ubinetics user equipment, is arranged by the 3G TEG (technical expert group) of the MII, which includes experts from RITT, local vendors, and operators such as China Mobile, China Unicom, China Telecom, China Netcom and China Railcom.

The MII trial covers technology and system function testing, as well as voice and packet data. Lucent has already successfully passed the Phase 1 test, which focused on WCDMA technology and system function verification. Among the applications demonstrated during this phase were email, Web browsing, Web download, FTP, VPN, and video on demand. Further performance testing will be done in early March as part of the next phase, with Lucent working together with the MII 3G TEG.

The plan is that 3G networks in China will complement the growing number of WLAN hotspots, in order to expand high-speed data services over a much larger coverage area, and to provide flexible mobile capability. The particular challenge of 3G in China is no different from other markets, and that it is the need to provide rich applications that will attract the end users and drive market demand. This includes the question of how to build up a profitable, efficient value chain with the support of all the involved partners, not only the operators and infrastructure manufacturers.

Follow up 3G trials involving operators are currently in the planning stage.

report contradicts remarks in early December by Wu Jichuan, the outgoing head of the MII, indicating that China had no timetable to issue the licences and would wait until the new technology became more mature.

Home grown solution

Whatever the timescales, the question of whether China's home grown 3G technology, TD-SCDMA, will be ready in time remains the subject of speculation. Its proponents – a group largely made up of Chinese companies lead by Datang Technology – claim that there is a huge potential market for TD-SCDMA in China, and that the technology could be commercially available by the first half of 2004, in time for 3G rollout if Clark is proved correct.

Development work on a dual mode TD-SCDMA/W-CDMA chipset, being undertaken at Datang's Shanghai-based Commit joint venture with TI, Nokia, and LG Electronics among others, should result in the delivery of commercial products during the first half of 2004, according to a spokesman for Datang.

However, the analysts remain sceptical. Robin Hearn, senior analyst at Ovum, is unconvinced that the technology has sufficient backing, and doesn't include TD-SCDMA in his forecasts. Dr Richard Windsor, chief financial analyst, communications equipment at Nomura International, believes that the low level of investment so far in TD-SCDMA indicates that it will be much later before it is ready – perhaps 2005 or 2006.

If local suppliers are to benefit then the timing could be important, especially given China's recent accession to the World Trade Organisation and its commitment to open up its telecoms market to foreign competition within five years. The question may be one of whether TD-SCDMA becomes a mainstream 3G technology, or is used to provide extra capacity, perhaps in urban areas, as Windsor believes it might. Meanwhile, Clark is of the opinion that it comes down to whether TD-SCDMA can be commercially successful, and whether China will allow it to fail.

The uncertainty surrounding TD-SCDMA, coupled with relatively low penetration of CDMA, means that China is still wide open in terms of its 3G technology choices. For example, even though Unicom's CDMA20001x upgrade will double the capacity of its network, market share for its service is still only around 3.4 per cent. If the company achieves its 2003 target by adding a further 13 million subscribers, it will still only hold around 7 per cent.

With CMHK's commitment to taking the GSM migration route via GPRS, and two new licensees likely to enter the frame sometime in the next 18 months, there should be a substantial opportunity in the world's largest market for UMTS. But, as ever in this most difficult of markets to predict, there are still more questions than answers. ■

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