



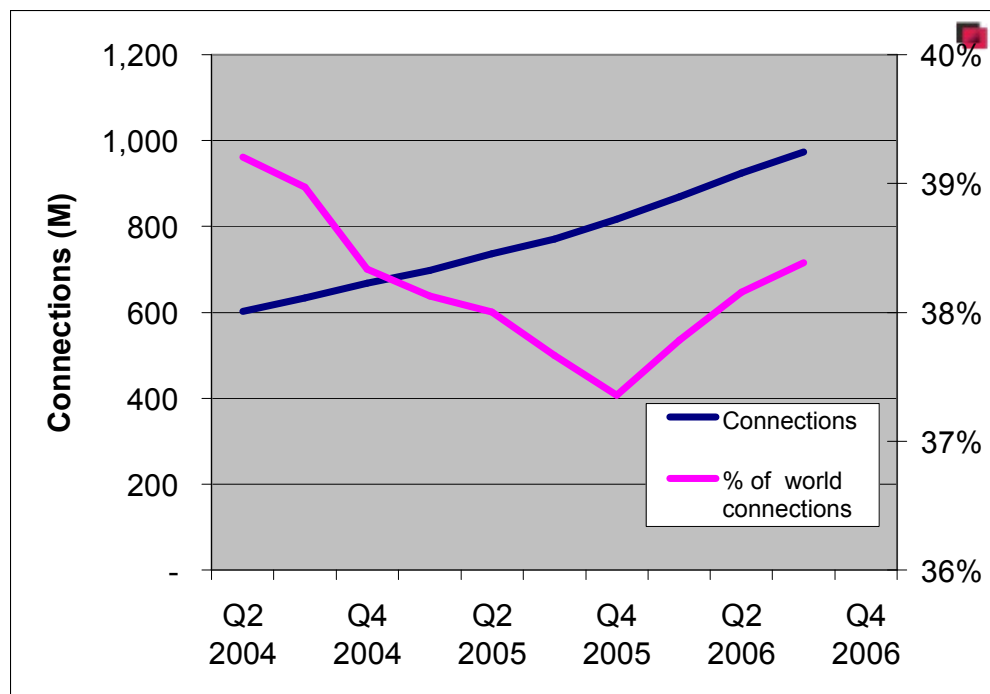
Asia-Pacific growth round-up

05 October 2006

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In our recent report, 'Worldwide cellular connections pass 2.5 billion', we noted that China and India account for a quarter of the world's cellular growth. As we head towards 3GSM Asia at the end of this month it is worth taking a slightly closer look at some of the growth dynamics in the Asia-Pacific regional cellular market, which we forecast will reach 1 billion connections by the end of 2006.

Figure 1 Cellular connections in Asia-Pacific



Source: Wireless Intelligence, October 2006

Growth in the Asia-Pacific region has accelerated from a run-rate of 12 million net additions per month through 2005 to 17 million during the first nine months of 2006. This is mostly thanks to much more rapid growth in India and Pakistan, with



India having moved up to 5 million net additions per month alongside China, while China continues at a very high rate.

Historically, Asia-Pacific has represented just under 40% of world connections, but this dipped in 2005 thanks to very high growth rates in Eastern Europe, Latin America and some parts of Africa. However, it is now climbing back towards this level.

Wireless Intelligence has connections figures for 666 network operators worldwide. Reported numbers account for 77% of the world market and we estimate them where they are not reported.

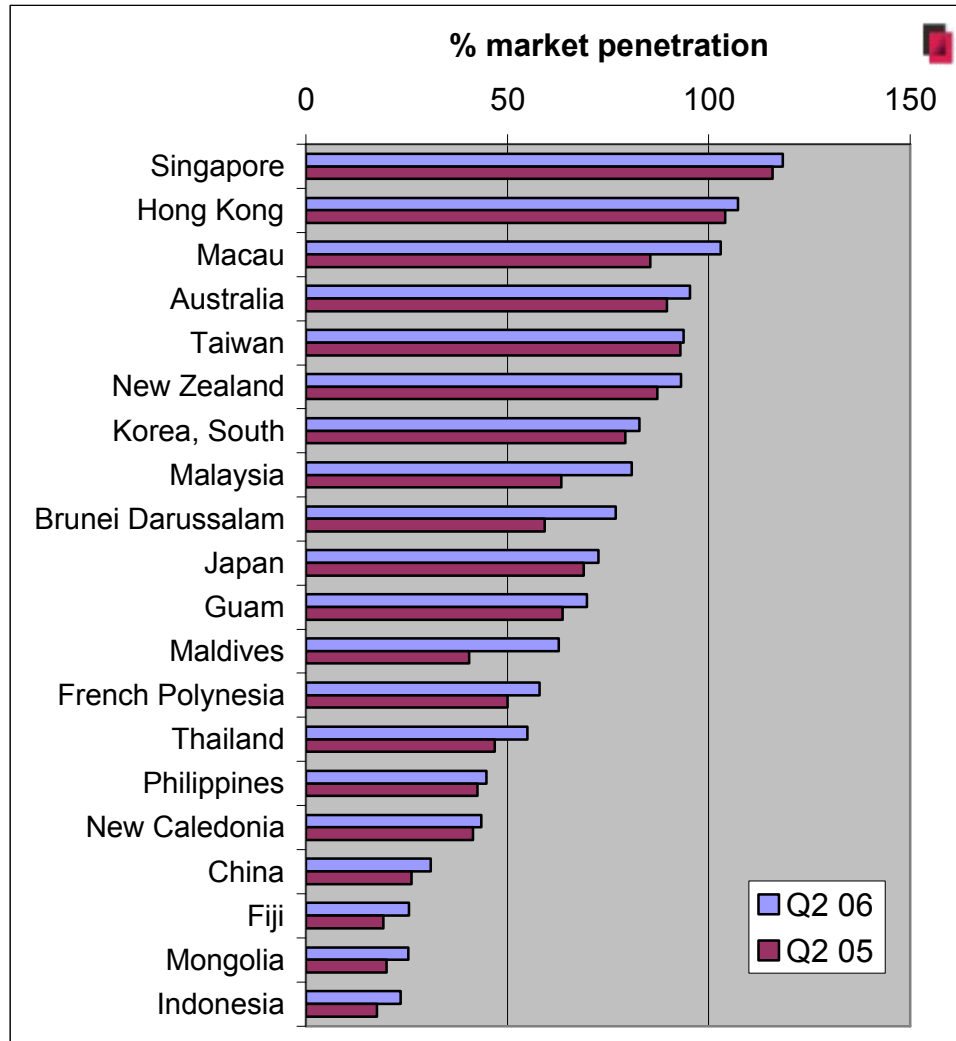
Analysis

Market penetration

The Asia-Pacific region accounts for almost half of the world's population. It is the most diverse of the regions, with a complete mix of highly developed and very under-developed cellular markets.

As *Figure 2* shows, the most developed cellular markets are the richest countries in the region and those smaller (often island) countries that are heavily dependent on tourism.

Figure 2 **Top 20 Asia-Pacific cellular markets by market penetration**



Source: *Wireless Intelligence, October 2006*

We expect this to change over the coming year as a result of mandatory prepaid subscriber registration rules currently being implemented in Singapore, Indonesia, Thailand and Malaysia. (Taiwan has instigated this, resulting in a fall in penetration last year, as it introduced strict rules of just one SIM per identity card). The rules elsewhere require only that user SIMs be registered, but this will still have the effect of removing many inactive subscribers from the base.

The range goes on downwards from this chart through Bangladesh and India around 10% penetration, to Nepal and Myanmar at 1-2% penetration – some of the lowest levels in the world.



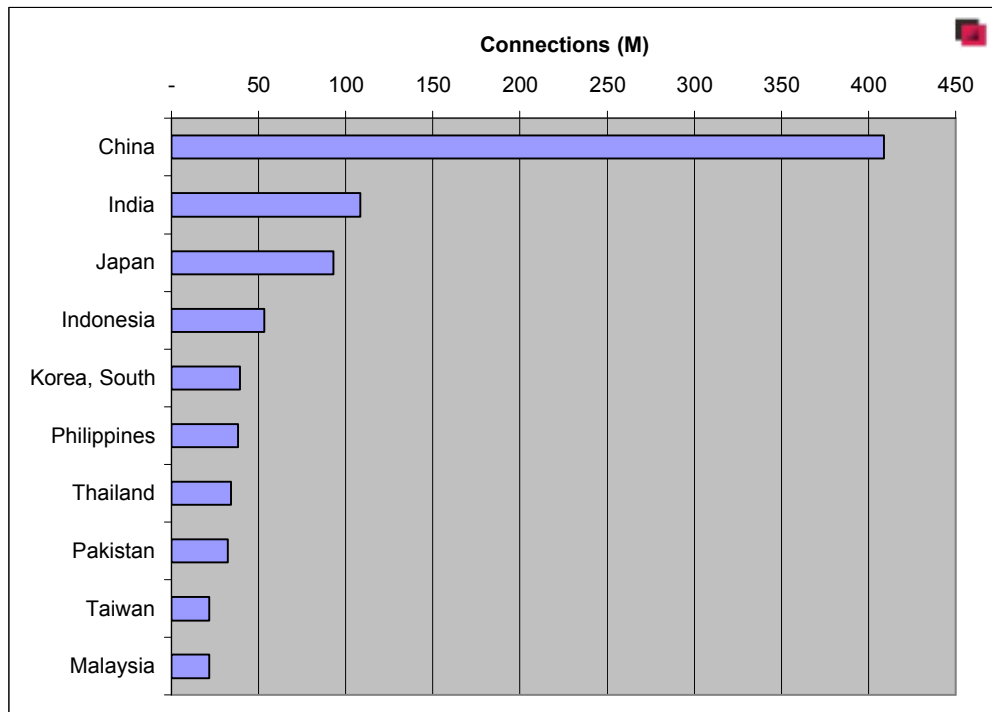
Market size

Asia-Pacific is also the most diverse region in terms of the scale of the markets.

As shown in *Figure 3*, China absolutely dominates the picture with 409 million connections – four times the size of the next nearest country, India, which overtook Japan earlier this year.

Again, the range goes on a very long way downwards from the chart, with the small islands of Nauru and the Cocos Islands having just 300–500 connections each.

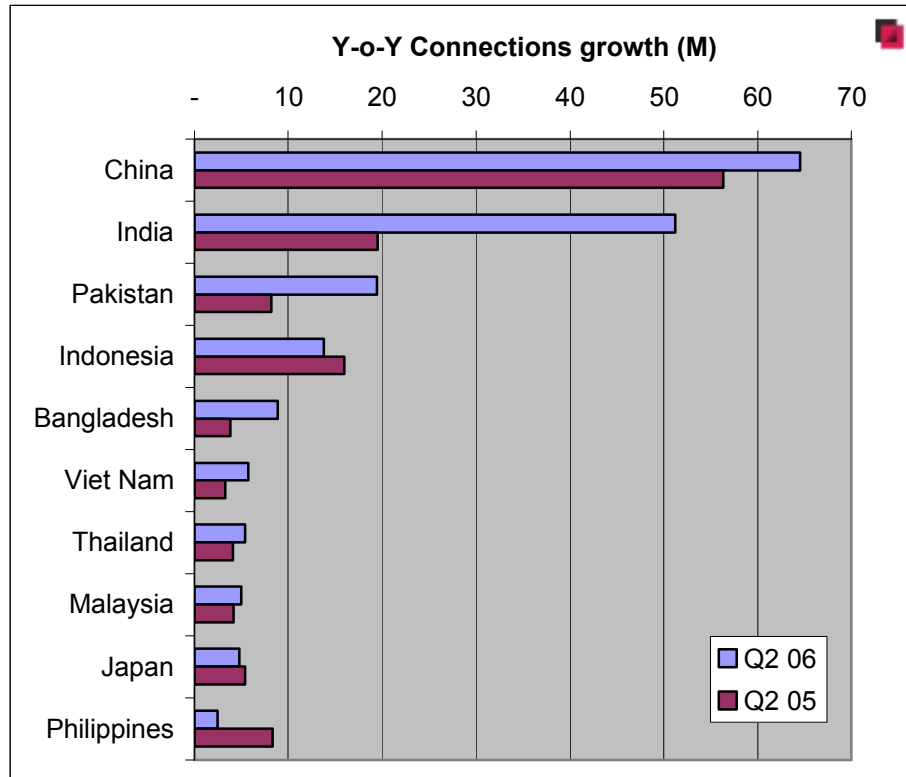
Figure 3 **Asia-Pacific cellular market size, Q2 2006**



Source: *Wireless Intelligence, October 2006*

Market growth

However, growth in the region is perhaps the most interesting area.

Figure 4 **Asia-Pacific cellular market growth**

Source: *Wireless Intelligence, October 2006*

As shown in *Figure 4*, China still leads the way and is showing higher absolute growth in 2006 than a year before, but it is the changing conditions in India, Pakistan and Bangladesh that are most exciting. All have very large populations, low market penetration (from 10–20%), and all have more than doubled their absolute growth over the last year. Pakistan and Bangladesh are now running at 150% and 135% market growth per year respectively, with India at just under 90% per year. Between them they accounted for 80 million net additions during the year to Q2 2006 and they will be very important sources of growth in the coming years.

Other, more mature markets, such as Japan and the Philippines, are seeing their absolute growth slowing down.

Indonesia should be one of the faster growing countries, but has also slowed down slightly, just as it is gearing up for W-CDMA and EV-DO services. This is partly because of substitution from cheaper fixed wireless services, partly as growth slows in the urban areas. We expect growth to pick up when operator price points fall enough to allow a sustained push into the more rural areas.

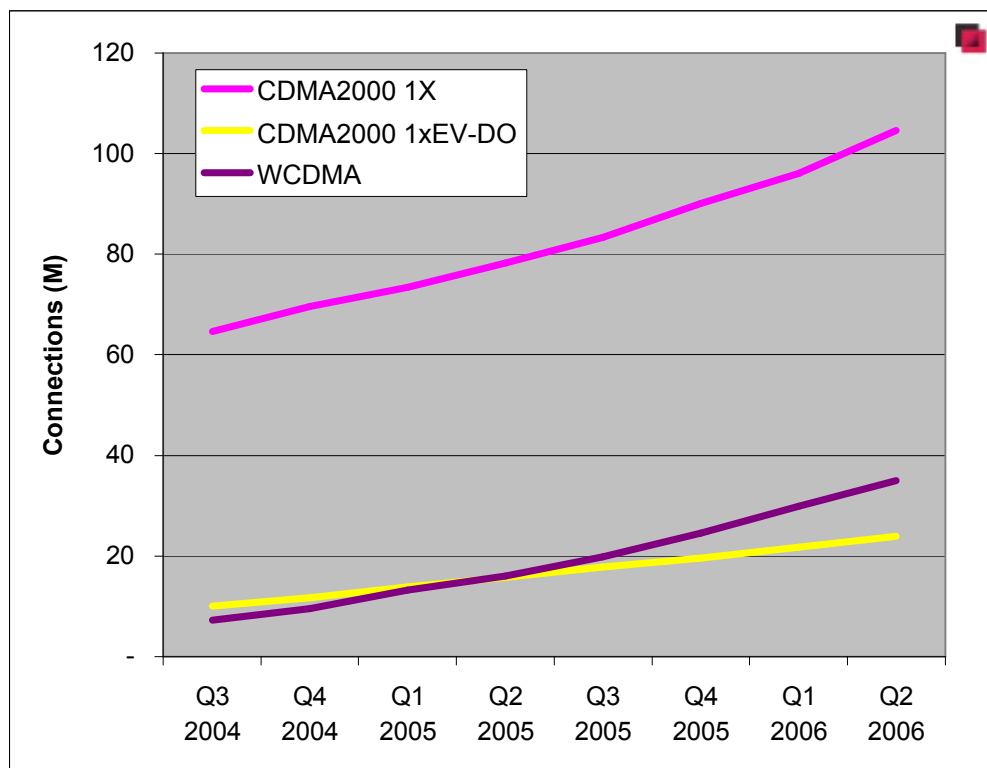


Growth of high speed networks

All eyes are, of course, watching for the launch of 3G licensing in China, since growth there is likely to dwarf anything else for some time. Licensing is currently expected in the first half of 2007.

For now, CDMA2000 technologies have the lead in offering high speed networks in Asia-Pacific, but are being caught up by W-CDMA, as shown in *Figure 5*.

Figure 5 **Growth of high-speed cellular networks in Asia-Pacific**



Source: *Wireless Intelligence, October 2006*

There are 14 commercial CDMA2000 1X networks in the region today, with China, India, South Korea and Japan leading the way, accounting for over 98 million of the current 105 million connections.

CDMA2000 1X EV-DO is commercially in use by nine operators in Asia-Pacific, with South Korea and Japan having 98% of the almost 24 million connections. It has reached 35% of connections in South Korea and 10% in Japan.

By contrast there are 26 commercial W-CDMA networks in Asia-Pacific and – apart from in Japan – they have generally been launched more recently than CDMA2000 1X networks. Japan is dominant, with 86% of the 34 million connections at the end



of Q2 2006 and 32% of its total connections on W-CDMA. In August 2006, DoCoMo had more than 50% of its subscriber base on its 3G platform, FOMA.

Most of the other W-CDMA networks are in highly developed markets that have a relatively small population (Hong Kong, Taiwan, Singapore and New Zealand) so, although their growth is important, they will not have a major impact on the longer term scale of W-CDMA in the region. However, they will reach significant market penetrations with W-CDMA; for example, it has already reached 21% of connections in Brunei, 14% in Hong Kong and 11% in Singapore.

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