

3G The Mobile Opportunity



The 3G World Congress and Exhibition, taking place in the Hong Kong convention and exhibition center from November 14-18th, is a celebration of the success of mobile communications and a showcase for the incredible opportunities unleashed by 3G and associated technologies.

It is worth reminding oneself of the tremendous acceleration in mobile usage across the region. According to research analysts, Gartner Dataquest, subscribers will pass one billion by 2008. By that point, China will have over 500,000 mobile connections and a penetration rate across the entire country of around 39%. In India, the mobile penetration rate will rise from 7% in 2005 to 25% in 2008. Even today, China Mobile and China Unicom are two of the top three global operators by subscribers in the world.

The influence of Asian technology, innovation and expertise can also be seen around the globe. The pioneering i-mode service from NTT DoCoMo has just been launched in its thirteenth country, the United Kingdom. This will be the eighth European country to have access to this incredibly successful mobile Internet service. The Japanese and South Korean markets in particular in the region, continue to be the model for mobile operators around the world seeking to understand how to make money out of new mobile applications and services.

Asian equipment vendors are also securing their positions as leading global players. Huawei's mobile and wireless products now

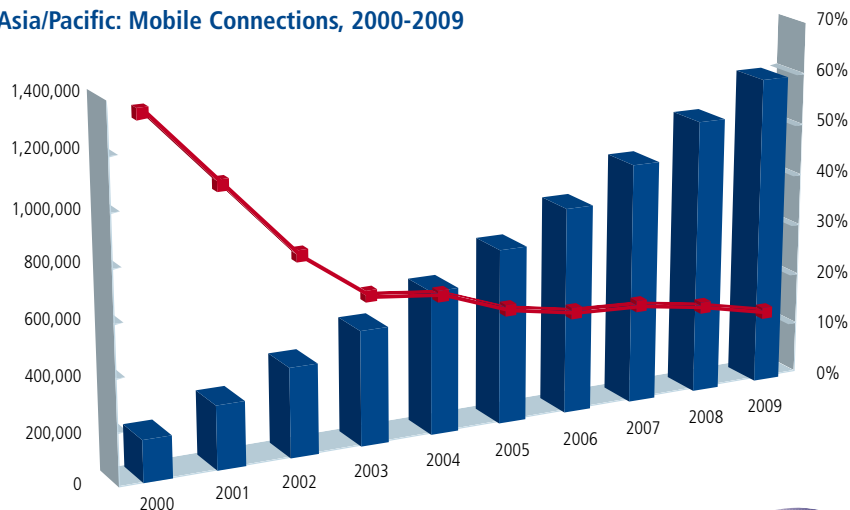
serve over 140 million users in more than 70 countries worldwide. Much of this success is due to research and development, investment in which accounts for around 12% of revenues and 45% of the work force. Huawei has won 69 patents just in UMTS which, along with CDMA2000 and TD-SCDMA, is one of the three 3G technologies.

Western mobile equipment vendors have also been keen to work with the leading Asian players. In August, Nortel unveiled an extensive joint venture with LG Electronics across the whole telecommunication infrastructure business. This was almost immediately followed by the announcement of substantial contract wins with both SK Telecom and KTF in Korea.

The Asian mobile handset manufacturers have also had an incredible impact on the world stage over the last 12 months. Leading Chinese vendor, TCL Mobile, has formed a joint venture with Alcatel, in which TCL will hold 55%. Taiwanese company, BenQ, has acquired the mobile handset division of Siemens. The combined group has around 5% of the global handset market.

One company that has found success on its own has been Chinese company, Ningbo Bird. From its success in the pager and mobile handset market in China, BIRD International was set up in 2003 in Hong Kong. Under its globalization strategy, the plan is to win as many orders outside China, as in their domestic market. In 2004, exports rose by more than six times.

Asia/Pacific: Mobile Connections, 2000-2009



Source: Gartner Dataquest (June 2005)



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The new face of mobile applications

The days have long gone when a mobile device was just used for talking, yet voice and basic text messages still account for the majority of mobile operator revenues. The 3G World Congress and Exhibition will showcase many of the latest innovations for the future usage of mobile devices. Some of these new services are reassuringly familiar. The new 902i series of 3G FOMA handsets from NTT DoCoMo will allow subscribers to use a function called 'push to talk'. This service is similar to the walkie-talkie idea, and has also been described as offering the convenience and speed of an instant messaging service.

The service works by the subscriber pushing their Talk button to display a directory of other users, with 902i handsets. After selecting up to four people, the user presses the Talk button again for immediate connection to the other users. The user holds down the Talk button while speaking, then releases it to let someone else speak (while the Talk button is pressed, the speaker cannot hear others talking). One person can talk up to 30 seconds at a time. If nobody speaks for 30 seconds, the connection is automatically cut.

The 902i range also illustrates some of the other recent enhancements from NTT DoCoMo. These include ToruCa, a service which enables a user to obtain the latest news and information simply by waving their devices in front of dedicated reader/writers installed at locations such as restaurants, theaters, music stores and shopping centers.

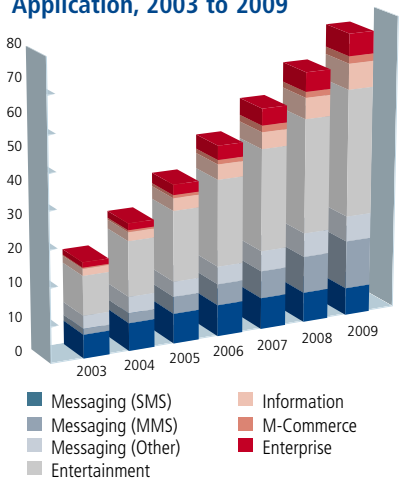
Two terms often used by the mobile industry is 'convergence' and 'multi-channel'. At the event, many of the exhibitors and speakers will be showing how this is now becoming a reality as

mobile communications become ever more interconnected with the Internet, computing and entertainment worlds.

One example of such a linkage is the cooperation between NTT DoCoMo and Japanese e-commerce provider, Ratuken. The two companies will provide an Internet auction service over both mobile devices and PCs. The Ratuken Super Auction already lists items from over 13,000 merchants.

The chart from analysts, The Yankee Group, shows the importance of entertainment services in driving

Asia-Pacific Mobile Data Revenue by Application, 2003 to 2009



Source: The Yankee Group, 2005

Asia-Pacific mobile data revenues. Key to this will be the development of popular image and video applications. One such application is Color Ring Back Tone, or CRBT. This allows users to personalize their traditional ring back tone with music, jokes and sound effects. Huawei has been a leading player in this market, having launched

its first CRBT system in China in early 2003. Since then, it has deployed the system to 39 operators in 29 countries and provided capacity for more than 100 million subscribers to use the service.

A real buzz at the event will be around one of the most talked about areas of convergence, mobile TV.

The clear global leader is South Korea. In 2004, SK Telecom launched the world's first satellite for mobile television services. From May 2005, South Korean users could access around a dozen TV channels and 13 music stations on a mobile device for approximately \$13 a month. Other Korean operators have launched similar services using rival technologies.

China Mobile has just launched a mobile television service, working with Dragon Mobile, a subsidiary of Shanghai Media Group. In Japan, the planned date for mobile digital terrestrial TV broadcasting is April 2006.

The jury is still out on the success of such services, particularly given issues such as the cost of the handsets, coverage and quality challenges, the impact on the battery, and the small size of the screen. Early feedback suggests that mobile TV is probably best in short bursts, up to say 90 seconds, and is at its most powerful when it allows for interactivity. It is also clear that users are very wary of any applications which impede or limit the other functions of the mobile device.

However, it is clear that mobile TV will become a highly popular application, and that many people will be following Beijing 2008, at least partly, on their mobile handsets.



Mobile operators in Asia-Pacific who are going down the CDMA2000 version of 3G also have their own 3.5G technology, known as 1xEV-DO.



The technology behind the applications

For mobile operators, it is a major challenge to develop the new mobile infrastructure and technology to support all the new services demanded by consumers and businesses. The operators must both try and predict the demand for new applications and also look at how they can cut their own costs in an increasingly competitive market. Important elements in reducing spend for operators are to use vendors who can offer a broad portfolio of services, and ideally provide a full end-to-end solution.



Central to the technology discussion is the fact that 3G infrastructure is just one part of the jigsaw for mobile operators. There is a need for much higher network speeds, backed up by Internet or IP technology.

An example of an operator going down this route is SK Telecom in Korea. It is working with LG Electronics and Nortel to provide wireless broadband, also known as HSDPA, which is sometimes referred to as 3.5G to indicate it is part of the move to the next generation of mobile infrastructure. That next generation, or 4G, is something that NTT DoCoMo plans to offer commercially by 2010 in Japan.

The SK Telecom launch of HSDPA will be in early 2006 and will allow such services as interactive games, music downloads, DVD-quality videos, real-time multimedia collaboration and e-mail with large file transfers at speeds up to 14.4 Mbps. This is comparable to current fixed broadband connections and would, for example, allow users to download music and e-mail attachments in seconds rather than minutes. Nortel, working with Qualcomm, had managed the world's first commercial HSDPA mobile call back in January 2005.

Mobile operators in Asia-Pacific who are going down the CDMA2000 version of 3G also have their own 3.5G technology, known as 1xEV-DO. CAT Telecom, an operator in Thailand, has deployed the largest such network in Southeast Asia using Huawei technology.

Nortel, working with LG Electronics, has also been keen to exploit a technology that is

proving very complementary to 3G, WiMAX. WiMAX is a long-range wireless broadband access system that can deliver large amounts of bandwidth very economically. It will give businesses and consumers uninterrupted access to a rich variety of high bandwidth applications like networked gaming, streamed digital music, TV, videoconferencing, and other real-time services. WiMAX can be used to complement and extend the reach of existing 3G networks. And Nortel and LG demonstrated that reality at the end of October with an exciting "wireless triple play" (voice, video, data) demonstration with BB Mobile in Japan with uninterrupted coverage roaming across 3G cellular, WiMAX and WLAN networks.

It is particularly interesting for rural areas as it can deliver mobile services wirelessly to large areas with much less infrastructure than is needed today. Major WiMAX proponent, Intel, has reported that it is aiming to commence trials of its WiMAX service in Malaysia, Thailand and the Philippines by the end of 2005, with Vietnam, Indonesia and South Korea planned for 2006.

A great benefit for WiMAX is the broad industry support. The WiMAX forum has over 200 members from a wide variety of industries. However, there are some concerns over the right business model and positioning for the technology.