

# **A perspective on the mobile markets in Japan and Korea**

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If one needs to cite a showcase for the industry model on mobile data, Japan and South Korea are certainly the prime examples with a thriving mobile content business and a large number of mobile data subscribers.

## **3G in South Korea**

In October 2003, South Korea now has over 33 million mobile phone subscribers out of a population of 48 million, a mobile phone penetration rate of 68.75%. There are 22 million mobile data subscribers making the mobile data penetration in terms of number of 66%.

There are three mobile operators in South Korea: SK Telecom, KTF and LG Telecom. They are offering CDMA2000 1x EV-DO based 3G services. Out of the three operators, SK Telecom remains the dominant operator with over 54% of the market share. The second is KTF with 31.4% while LG Telecom has a market share of 14.3%. Their ARPU is around HK\$300.

The focuses of their services will centre on four major areas: Commerce, Entertainment, Multimedia and Location based services. Within Korea, one bright spot is mobile games. It is expected that the mobile game market will hit 940 billion won in 2007, with an annual growth of 63% on average.

## **3G in Japan**

In Q3 of 2003, there are now over 78 million mobile phone subscribers in Japan out of a population of 127 million with over 64 million being mobile data subscribers, a mobile

data penetration rate in terms of number of 82%. It is also expected that the revenue share between mobile data and voice will be 50/50 in 2005 compared to around 18/82 in 2002.

For 3G penetration in Japan, KDDI now has nearly 11 million subscribers for its CDMA 2000 1x while Docomo FOMA has just over 1.3 million. Just over a year ago, KDDI had over 4.7 million subscribers while FOMA had only just under 150,000. The significant difference in subscriber numbers between the two prime Japanese 3G carriers, Docomo and KDDI, could point to a lesson on “how to roll out 3G services”.

With a total subscriber number of around 15 million, KDDI has a much smaller subscriber base and they launched their CDMA2000 1X based 3G service only in April 2002 while Docomo launched their W-CDMA based 3G FOMA service in October 2001. With 11 million out of 15 million subscribers now with 3G, the penetration rate of KDDI 3G services is well over 73%. On the other hand, despite the vast content and subscriber base that boasts over 45 million subscribers and over 58,000 content sites, Docomo has only a 3% penetration of 3G in their total subscribers. With Docomo FOMA broadening their network coverage and improving their handset sizes and battery life, FOMA subscription caught up rapidly since Feb 2003, with a monthly growth rate of steady 20% to 30% growth. Before Feb 2003, the growth rate was in a single digit.

In any case, it would be interesting to investigate why their 3G services has been so slow, in comparison with KDDI.

## Network Coverage

The first and foremost problem with Docomo is *Coverage*. No doubt, whenever a new network such as 3G comes into service, its coverage will not be as good as the existing 2G network. The same will be for both Docomo and KDDI. The problem with Docomo is that their W-CDMA phones are not compatible with their existing 2G networks. For some areas such as their underground railway stations, the FOMA network will not have

coverage. In the current mobile market, this will simply be totally unacceptable to subscribers. Conversely, the 3G phones of KDDI have a dual mode capability so that when the phone is out of the 3G coverage areas, it will be switched back automatically to the 2G network. As a result, KDDI 3G subscribers will not notice any change in the coverage. The only difference is that in some areas, 3G services may not be available. Subscribers will generally accept this and there is a world of difference in comparison to without ANY coverage altogether.

## Handset

The second problem is the *handset* itself. Many in Japan thought that the sizes of the FOMA phones are significantly larger than the nifty, slim I-mode phones. Although the new FOMA phones come with lots of features such as video conferencing, video clip download etc, the new phones look sluggish and “fat”. In comparison, KDDI uses CDMA2000 technology which allows their 3G phone to be of a similar size to their 2G phone. In reality, it is difficult to tell the difference between the 2G and 3G phones just from the look!

## Battery Life

The third problem is the *battery life*. FOMA phones, with its many features, higher transmission speed, have relatively short battery life. If users make a lot of use of video conferencing, the battery life is even shorter.

The other plus for the KDDI 3G plan is that they offer a seamless migration path for their subscribers to switch from their 2G services to 3G. The subscription rates of the two services are the same. With the dual mode phone, the coverage of the two networks can complement each other. With their 3G phones heavily subsidised, their subscribers only need to pay between HK\$1,200 to HK\$1,500 to change to the new 3G network. This is

their ONLY expenses. With the extra services and speed provided by the KDDI 3G network, no wonder that they are adding over 700,000 new subscribers to their 3G network every month!

Certainly, Docomo FOMA would also understand the mentioned problems and they are working overtime to ratify it. In this quarter, they will come up with a dual mode FOMA phone that allows the fall-back to their 2G network when 3G is not available. This will alleviate a lot of concerns that the potential subscribers have. With a maximum speed of 384 Kbps, FOMA certainly has a lot of potential when all these teething problems are resolved.

### ***I-Mode Business***

Many countries have tried to imitate the I-mode model in their own right but few are as successful as Japan. One therefore has to stress that China and Hong Kong should only make reference to the Japan model and adopt for the local requirements as the business model in the two places are very different.

### **Homogenous Business Model**

One could argue that Japan has a very homogenous business model in their mobile market. The country, though with such a large population of subscribers, has only three mobile operators. As such, the mobile operators have a strong say on the features of the headsets. Together with a proprietary mobile phone system in the past, the handset manufacturers can work closely with the mobile operators in coming up with a handset that is optimised for the network. Such an end-to-end business model allows handset manufacturers, content providers and mobile operators to work seamlessly to offer a level of *user experience* on their I-mode type service that is unrivalled by any other standards such as WAP.

In Hong Kong and other places of the GSM world, they have a very heterogeneous business model with mobile phones supplied by many international manufacturers from different parts of the world. As such, each mobile phone has its unique features, in terms of screen sizes, colour depth, memory capacity and sound capability. Software that will run on one mobile phone will not run on the others. This has resulted in great difficulties for mobile content and application developers, as they may need to develop several copies of their products for different handsets. Extra effort is required to homogenise the software such that they can be automatically be scaled and adopted for different handsets.

### Standardised Business Collaboration

In Japan, the business relationship between the Content Providers (CP) and the Mobile Network Operators (MNOs) is very uniform. It is a common knowledge in their mobile industry that the MNOs will charge the CP between 8% to 12% of the revenue generated from the mobile content. The xHTML based content structure allows the CPs to host the content on their own servers with a standard lease line link up between the servers and the MNO Gateway. The CP friendly business set up has spurred on a large number of content providers, with over 3,000 sites from the application alliance partners of Docomo and over 55,000 sites from “I-mode voluntary sites”. The simple and standardized business collaboration model between the MNOs and CPs allows both parties to concentrate on their core business: MNO on their network development and services while CP on their contents. The billing is carried out by the MNOs.

### Subscription based model

Many CPs in Japan have adopted a subscription based fee model. In this way, each subscriber is required to pay a small monthly fee, in the range of HK\$15 to \$20, which will allow the subscribers to download a certain amount of data and contents. Once above the preset amount, subscribers will be required to pay per data amount used. For a medium sized CP with the number of subscribers of 2 – 3 millions, this will give a

lucrative revenue source of tens of millions every month. This type of model is possible because Japan has a large population of mobile data subscribers. With a mobile data penetration rate of 77% in Japan, this comes as a stark contrast to the 2% now Hong Kong has with its GPRS subscribers.

## ***Conclusion***

Comparing an 82% mobile data penetration in Japan and 8% in Hong Kong seems to be a long way off for Hong Kong but one must bear in mind that everything starts small. Japan has a much more homogenous and regulated mobile phone market as compared to Hong Kong. The author believes that this has contributed significantly to their growth. Hong Kong has a much more heterogeneous business model and we face a much more difficult task.

I-mode started in Japan in February 1999. One year after the service started in Feb 2000, the number of subscribers rose to 5 million, representing a penetration of around 12%. The number grew to 31 million in Feb 2001, a penetration of around 50%. In Hong Kong, the number of mobile data subscribers steadily grows to a penetration of 8% in terms of subscribers. This represents a steady monthly growth rate of between 10 to 15%. By the end of 2003, it will reach a penetration of 10%. With the availability of more featured phones and innovative developers and users, Hong Kong can make it to be one of the major forces in Mobile Content and Applications.