

Chapter 1

Executive summary

Introduction

The mobile industry is in the midst of a major transition from narrowband to broadband, voice to data and from its circuit-switched legacy to a future based on IP. But the scale of the transition means that both mobile operators and vendors have embarked on a grand experiment in transforming themselves to boost revenues and margins in markets that are often maturing, while keeping network and other costs under control.

One of the most successful aspects of this grand experiment has been the introduction of mobile broadband services based on technologies such as EV-DO, HSPA and WiMAX. EV-DO services were first introduced in 2002 and gradually matured into true mobile broadband services, with 141 live networks by January 2008. But the mobile broadband market really started to take off in 2006 and 2007 with the widespread deployment of HSDPA services. After the first launch of HSDPA services by AT&T (then Cingular) in the US in late 2005, the system spread like wildfire to the vast majority of WCDMA operators worldwide. By January 2007, a little more than a year after the first HSDPA service was launched, there were 72 live HSDPA networks worldwide, and that more than doubled to 166 live networks by January 2008. To put that into context, in January 2008 there were 189 live WCDMA networks worldwide, meaning that 88% of them had been upgraded to offer HSDPA services.

However, the widespread availability of mobile broadband networks is only part of the story. Mobile operators have also addressed one of the longstanding barriers to mobile data adoption – high and complex pricing – by launching mobile broadband services with prices that are reasonable and comprehensible. For example, as of mid-2008, 3 UK offered HSDPA services for £10 (US\$20) a month for 1GB of data and £15 (US\$30) a month for 3GB, via a USB dongle that is free with an 18-month contract or £50 (US\$99) with a 12-month contract. And existing 3 UK customers get 50% off these rates. So the service (and similar services from other mobile operators) is clearly competitive with many DSL offerings in the UK including BT's entry-level broadband package, which costs £16 (US\$32) a month for 5GB of usage – although the BT service advertises speeds up to 8Mbps compared with 1-2Mbps average speeds for HSDPA.

Widespread availability of mobile broadband networks combined with competitive tariffs has led to a boom in mobile broadband subscribers. At the end of 2007, there were an estimated 60 million EV-DO subscribers worldwide and another 22 million HSDPA subscribers – and HSDPA in particular is ramping strongly. Informa Telecoms & Media forecasts 51 million HSDPA subscribers worldwide at the end of 2008, where there will also be close to 5 million HSUPA subscribers.

Chapter 2

Scope and methodology

Introduction

This report is unique in that it tackles the immensely complex area of mobile network traffic, and uses the resulting traffic forecasts as a foundation for mobile base station forecasts. This methodology goes well beyond the traditional approach of developing mobile base station forecasts based on extrapolations of the current installed base of mobile base stations worldwide. It also has the advantage of providing a broader and deeper view of the future of the mobile industry, given that network traffic forecasts answer many of the questions that are vital to the prospects of mobile operators and vendors, including which mobile data applications are likely to take off, and when.

The reason this report is based on a more rigorous and time-consuming methodology is the nature of the mobile data market, which is showing clear signs of explosive growth after years of relatively slow progress. For example, leading WCDMA vendor Ericsson states that on the WCDMA networks it has deployed worldwide, total data traffic overtook total voice traffic in May 2007. In addition, the vendor says that by December 2007 total data traffic was 3.7 times the level of voice traffic. This signals a step-change in the mobile market, which will increasingly be driven by data rather than voice services. This in turn means that base station forecasts based on extrapolations from the existing voice-driven mobile market may be losing relevance.

Overall scope and methodology

This report covers a five-year forecast period from the end of 2007 to the end of 2012, focusing primarily on forecasts by region/country and the factors affecting overall growth in mobile subscribers, network traffic and base stations.

The forecasts presented were developed based on extensive primary and secondary research, are included in interviews and other discussions with mobile operators, vendors, regulators and other players worldwide. The research was carried out primarily by the authors of the report, but with significant direct and indirect input from Informa Telecoms & Media's base of some 100 analysts and researchers with a wide variety of topic and regional expertise. Another key aspect of the methodology is validation of the forecast model and results with key players in the mobile value chain.

As suggested by the title, the report covers the mobile market and not the fixed market. All the forecasts presented in the report are for the mobile market only, including all voice and data applications running on mobile networks worldwide. However, convergence is blurring the boundaries between the mobile and fixed markets, leading mobile operators, for example, to launch services to compete with fixed broadband. If these services are offered via mobile

networks they are covered by this report; as an example, subscribers using fixed devices running on mobile broadband networks – whether WiMAX, HSDPA, EV-DO or another system – are counted in the subscriber forecasts, and their traffic is counted in the traffic forecasts.

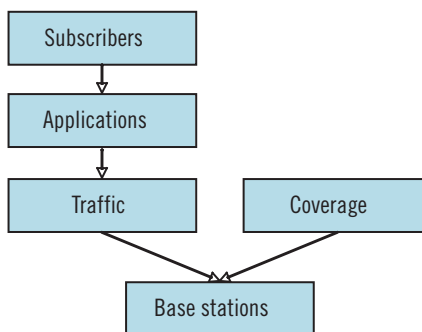
Similarly, subscribers using mobile femtocells are included in the subscriber forecasts, and their traffic is included in the traffic forecasts. Mobile subscribers using Wi-Fi gateways for mobile services are counted as subscribers (since they will also be using mobile networks), but the traffic they generate on Wi-Fi networks are not included in the traffic forecasts.

The mobile market is also converging with the broadcast market, but there is a need to draw a line between the two segments for the purposes of analysis. This report covers mobile phone networks based on air interfaces such as CDMA, GSM, WCDMA, WiMAX and LTE, and all traffic running on those networks. This includes traffic from integrated broadcast systems such as MBMS. However, the report does not cover dedicated mobile broadcast networks, such as DVB-H and MediaFLO, so subscribers and traffic for these networks are excluded.

Methodology

The overall methodology used is a bottom-up approach that builds step-by-step from mobile subscribers to applications and usage and from there to mobile network traffic. The traffic data is then one of the key inputs driving base station forecasts, along with base station coverage calculations. Fig. 2.1 shows a simplified chart of the basic methodology used in the report.

Figure 2.1: Summary of report methodology



Source: Informa Telecoms & Media

More detail on the scope and methodology for each of the main sets of forecasts is provided in the sections below.

Mobile subscriber forecasts

Subscriber forecasts are provided for the end of each calendar year, starting with the end of 2007 and finishing with the end of 2012.