What do customers really want from mobile data services? As the first wave of 3G networks rolls out, analyst Visiongain revisits the 3G business case and assesses the challenges and opportunities, devices and desires.

WHAT THEY REALLY, REALLY WANT?

In most developed markets the 3G licensing process is now complete. For the majority of European operators the exercise has been particularly expensive, with the average licence in the UK and Germany costing in excess of US$7billion (€5.7 billion). To this must be added the cost of actually building the 3G networks, which has an estimated cost worldwide of US$465billion (€399 billion).

Let's be clear about the defining characteristics of next generation networks. Visiongain believes that 3G mobile services must offer:

- data transfer rates of 144Kbps or more in the field;
- emails with attachments;
- access to the mobile internet;
- an ability to display colour content and video clips with audio.

But meeting technical criteria is only part of the story. The challenge now facing licence holders is how to ensure a rapid return on these very significant investments.

The first step must be to attract large numbers of subscribers on to the new networks and drive take up of advanced mobile data services.

Worldwide early 3G W-CDMA deployments appear to have struggled to realise initial commercial objectives.

While it might seem unfair to highlight the challenges confronting next generation trailblazers, it's clearly important for the industry to study these early rollouts and learn from the issues raised.

In Europe, Hutchison Whampoa's W-CDMA brand '3' has had to grapple with a range of challenges relating primarily to terminals and coverage.

Since launching into the European market in Q1 2003, Hutchison's 3G service has had to resolve a number of device-related issues. Handsets associated with the service were initially criticised for their short battery life, a problem Hutchison has acknowledged and addressed by providing users with complementary extra batteries. The launch has also been troubled by a shortage of compatible handsets. In Italy in Q4 2003, for example, it is alleged that 3 had a waiting list of around 100,000 subscribers all demanding new handsets.

Hutchison believed that focusing on 3G could offer significant advantages in the design and deployment of next generation networks. At times, however, health and environmental issues have stood in the way of coverage development. In the UK, for example, the operator has been forced to deal with resistance from local councils, MPs and residents who fear the environmental impact of additional radio masts and perceived but scientifically groundless health risks. As an interim measure 3 has been using a GPRS roaming service provided by O2 to boost its coverage in the UK.

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On a more positive note, as a new entrant 3 clearly benefits in some respects from the absence of an existing 2G subscriber base – for example, the operator enjoys more flexibility than incumbents with regard to 3G recruitment strategies. In addition, as a first mover Hutchison has been able to capture early-adopter market share and gain valuable field experience of 3G technology.

For the European market as a whole, the arrival of a new operator in well established 2G and 2.5G markets has created some turbulence. To drive take up and build market share, Hutchison has offered increasingly attractive consumer deals. In addition to slashing voice and cross network tariffs, Hutchison has offered its customers free samples of advanced data service offerings and specially designed video clip packages for particular market segments. Incumbents will need to match, better or at least take into account such offerings when they launch rival services.

Despite such marketing initiatives Europe's new operator has still found it tough to hit its own commercial targets. At the time of writing, Hutchison was revising its target of one million subscribers in Italy and UK by the end of 2003. With more established European operators like Vodafone, Orange, T-Mobile and TeliaSonera launching 3G products the big question is whether or not Hutchison be able to endure in the European market.

As incumbents roll out their 3G offerings, Visiongain believes 3 will continue to play a role in this critical market – primarily as a result of Hutchison Whampoa's very considerable economic muscle.

There's a fine line between the gains of first mover advantage and the dangers of disappointing an embryonic market with underdeveloped product. Well-established operators like Vodafone, T-Mobile and Orange have weighed the risk of an early entry into 3G and decided to put their plans on hold. 3 has undoubtedly gained first mover advantage with video calls, but will need to be extremely competitive and tactically nimble once the novelty wears off and rivals begin to launch competitive offerings.

Competitive content

So what are the key factors that will determine take up of 3G services in Europe? Well, few doubt that in an enhanced data environment, content will be king. Visiongain believes that superior content will be one of the main reasons that subscribers will switch to 3G networks. In time it will be one of the reasons that subscribers switch between 3G operators. Once 3G markets mature, the retention of subscribers in 3G networks will be determined by the quality and range of content and services provided by the operator.

Visiongain believes service providers that secure attractive mobile content services at an early stage will have an advantage in attracting and retaining subscribers.

In Europe, it's still too early to assess the impact of 3G on sales and new revenue. In Japan, however, the evolution of the service environment has resulted in a significant upturn with handset sales reaching seven million for KDDI.

The capacity gains inherent in 3G deployment allow mobile devices to become extensions of games consoles. Visiongain predicts that mobile gaming is set to be one of the most lucrative new revenue streams for 3G mobile providers. The idea of easily downloading a game on to a handset is very appealing to a lot of people – a few minutes waiting for a bus or a train are easily occupied playing a simple game on the phone.

Products like Nokia's N-Gage couple GPRS telephony with a functionality that relates to very specific content – in this case mobile gaming. The N-Gage uses game cards that offer users console titles like Tomb Raider, Sonic the Hedgehog and FIFA football at an acceptable quality.

In Japan, the mobile games explosion has led operators to move from per-minute charging – as with voice – to billing systems based on volume of data downloaded, bandwidth used and the type of game selected (eg, in terms of complexity and design). In addition, there's no doubt mobile gaming will be one of the key services driving the development of new handsets with better screen sizes and resolution. With the streaming speeds facilitated by 3G, and local network capabilities afforded by Bluetooth, gaming is set to become an entirely mobile experience that does away with the need for bespoke devices like Gameboys and X-boxes.

Streaming video

The rollout of 3G networks means increased data rates and bandwidth that allow services like video calling and video downloads. The technical possibilities of high-speed, high-quality mobile streaming video offer very considerable new revenue opportunities for operators.

Hutchison has announced that it will begin offering Playboy content in a move to attract subscribers to its 3 service. Playboy Enterprises has signed a global content deal that gives 3 exclusive, multi-year mobile content rights to the publisher's print, online and broadcast libraries for all its markets. Services will be launched in the UK. 3 UK has also finalized a series of agreements with other video-orientated content providers such as Aardman Animations, Zeppotron and MTV.

Visiongain believes streaming video sports content over 3G could prove to be one of the key drivers for the economic recovery of European operators. Sports such as football, motor racing, horse racing, golf and cricket are expected to lend themselves extremely well to advanced mobile applications. Selectivity is the key factor here: blank time can be edited out thus allowing users to view highlights in real time via video downloads.

Visiongain believes that while sport will be the focus for mobile 3G content services in Europe, Asia, on the other hand, shows a higher propensity for acceptance of wireless gaming services.

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Mobile payments and gambling

The mobile payments industry is growing. 3G's ability to deliver fast services that combine voice and data represents a unique opportunity for service providers to exploit this new technology.

A number of players have already started to experiment with m-commerce services combined with MMS (still employing 2.5G technology). Although it's too early to assess the impact of such initiatives, the service potential and technology developments look promising. Payment technology has now moved on so that even tickets can be issued directly to a mobile phone. In this example, the validation of a purchase can be sent to a handset as a barcode image and this can then be scanned by a barcode reader allowing, for example, entry into a venue.

Using mobile devices to gamble is not a concept exclusive to 3G. In fact, a number of bookmakers including Ladbrokes, William Hill, Bluesquare and Sportingbet already offer services that allow their customers to gamble via WAP and SMS. However Visiongain believes that revenues from gambling and indeed m-commerce will increase with the effective deployment of fully functional 3G networks.

For gambling services, 3G effectively forms the middle ground between WAP and television by offering punters the chance to bet on a sport from a wireless device and then watch the event. So while subscribers are unlikely to place a bet and watch an entire football match on their 3G-enabled mobile device, a sport like horse racing clearly lends itself perfectly to 3G gambling opportunities.

3G success factors

There is clearly a wide range of factors that will determine the success of 3G, although it's equally clear companies will initially struggle to achieve the revenues required to support their investments in the licensing process and network deployments.

GPRS, CDMA2000 1xRTT and EDGE are fast enough to allow most MMS applications like picture messaging and polyphonic ringtones. However for reasonable quality video calling greater speeds and bandwidth are required and this is where W-CDMA and evolved iterations of CDMA 2000 come in to their own.

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This increased bandwidth will be the main advantage of 3G. As the market demand for bandwidth-hungry services grows, the increasingly sophisticated requirements of subscribers will drive the growth of 3G usage and reinforce the 3G value proposition. Consumers will also be won over by the introduction of smaller, more appealing handsets, better 3G network coverage and improved quality of service and tailored content.

The offer of branded content facilitates a series of marketing synergies that can be explored by operators. Associations with brands such as Playboy, Disney and specific football clubs are likely to be decisive in attracting discrete segments to one operator or another.

In fact Visiongain believes the key issue that operators face attracting and retaining 3G subscribers revolves around their ability to tailor services and content. As 3G technical capabilities become embedded and taken for granted, Visiongain sees a situation in which users increasingly choose and switch operators solely on the basis of available services and content.

These factors coupled with the launch of multiple 3G networks will undoubtedly increase competition and encourage price wars. While this certainly adds up to a tough market for operators, these same factors will also encourage uptake of 3G technology and services. This said Visiongain predicts significant 3G market penetration seems increasingly unlikely before the second half of 2005 at the earliest.

China, standards and interoperability

One serious issue that could impact the global adoption of 3G is the proliferation of standards. The original intention was to have a single 3G standard, but currently there are three 3G variants – W-CDMA, CDMA2000 and TD-SCDMA.

Perhaps the most significant determinant in this mix is TD-SCDMA, a technology jointly developed by Siemens and the China Academy of Telecommunications Technology (CATT). At the time of writing, the Chinese government has yet to issue licences for 3G or decide on the technology to be deployed.

Given that China is the world's largest wireless market, if adopted TD-SCDMA will be a very significant 3G technology. An average of 4.76 million new mobile users signed up to networks every month in 2003. If 3G is taken up by a fraction of new mobile users that currently use 2/2.5G services then it will become the biggest 3G market in the world with TD-SCDMA the main 3G standard in use.

The widespread adoption of TD-SCMA will represent a huge challenge for both operators and the vendor community. Network and handset interoperability issues will need to be addressed as a matter of urgency, especially as they affect consumers directly.

Conclusion

As vendors continue to develop new technologies and upgrades, operators may begin to feel themselves trapped in a technology escalator, forever trying to keep up with the next big thing.

Certainly talk of 4G standards will concern those network operators that have committed vast resources to W-CDMA networks and licences. By purchasing licences these operators have effectively given the W-CDMA business case a specified lifetime and with deployments of 3G being pushed back due to technological setbacks this business case might appear to be getting increasingly shortened. ■

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