

A FLICKER OF INTEREST

Just where do video services sit in the 3G service portfolio? And is video streaming technology really up to the job? Richard Kennedy believes the Asian market offers some intriguing pointers

The technical challenges associated with bringing mobile video to market have been pretty well rehearsed. The key issues are how to process large volumes of data while integrating multiple chips and keeping power consumption to a minimum. Another major concern is how to handle video over variable bandwidths. For example, what happens to a video image when the data rate changes? Well, the answer is that unless there's an effective buffering mechanism in place the image hangs or the screen goes blank.

Furthermore tough problems like these become positively herculean when considered in the context of a two-way mobile video exchange. ▶

One of the main issues facing developers is the fact conventional digital signal-processing architectures seem to have real trouble handling 2D data – a good deal of information fails to be cached first time around and, as a result, the same data needs to be repeatedly collected. This results in memory bottlenecks and an intolerably clunky user experience.

Finally, the video world is constrained by a tangle of usually incompatible standards that often need to be supported by hardware codecs. This can mean cluttered motherboards, heavier devices and significant costs; it also helps account for some of the seemingly intractable power consumption issues associated with bringing wireless and video together.

in this market that has consistently led the way with data products that the future of mobile video services can perhaps be glimpsed.

Asian model

Most industry commentators in Japan agree that throughout 2002 initial underdogs KDDI and J-phone Vodafone comprehensively outflanked NTT DoCoMo's FOMA business. Both companies fought campaigns that combined compelling marketing with aggressive coverage strategies to devastating effect.

At the heart of J-phone Vodafone's early battle for market-share was its sha-mail picture mail service. According to a Vodafone company report, 'J-Phone

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Given what's at stake it's easy to see why so much time and energy is being invested in so many different types of video compression and delivery solution.

When to launch?

Timing the launch of any mobile video offer must be a critical concern for operators. Initially, the thinking was that rolling out video simply wasn't an issue before significant metropolitan deployment of 3G networks. But things have moved on. There are now a variety of solutions, developed with 3G in mind, but which for the time being can offer varying – yet always diminished – levels of user experience over 2.5G technology.

Of course all 2.5G solutions fall well short of the crisp high definition video featured in the industry's lifestyle advertising. This means that the positioning of such products within operators' service portfolios is of prime importance. The good news is that most operators that have launched or are about to launch video services have adopted an uncharacteristically low-key approach to marketing.

Given the technical challenges and relatively low levels of take up and traffic that seem likely to accompany an early launch of services, many smaller operators have adopted a wait and see approach to mobile video. As far as the bigger players are concerned, however, there's a growing sense firms believe there might be significant first mover advantage in this market. The early signs tend to suggest that this is certainly the case in Asia. It's

Vodafone consistently captured a higher percentage of net customer additions in each month in the period [2002], compared to its cumulative market share. This can largely be attributed to the strength of the brand and the popularity of camera and internet enabled handsets.' The report went on to describe the role played by the massive range of sha-mail handsets in attracting customers and reducing churn.

At the beginning of 2003, NTT DoCoMo introduced a range of attractive phones and leveraged its strong subscriber and developer base to claw back market share. But J-phone has continued to fight back by pushing take up of a video offering that leverages the brand loyalty of its sha-mail customers.

Back in March 2002, J-Phone took the inevitable next step of augmenting picture sha-mail with movie sha-mail. At the launch of services, subscribers were able to use phones with a built-in mobile camera to take a short video of up to five seconds plus audio and attach the video to an email called a 'super mail'. Receivers of such mails could instantly open attached files for playback. By May 2003, J-Phone had introduced a Sharp handset with an embedded mega-pixel CCD mobile camera that can send movie sha-mails of up to 10 seconds and is compatible with the MPEG4 format.

In June 2003, J-Phone announced that the number of movie sha-mail subscribers had passed the two million mark. The operator reached this milestone seven months

after exceeding one million users in November 2002 and one year and three months after first introducing the service.

NTT DoCoMo's i-motion video download product is part of its 3G FOMA offering that, in the early days following service launch, suffered from sluggish take up – mostly because of limited coverage and what were deemed to be unattractive handsets. Along with the download service, FOMA responded to the video email challenge from J-Phone and KDDI (which also employs an MPEG4 solution) by introducing a complementary service called i-motion mail that also allows users to take short video clips and send them to other subscribers and PCs via the email function on their phones.

Which compression?

After alleged concerns about Microsoft licensing fees, NTT DoCoMo also suffered a degree of upheaval when it decided to change compression technologies a year after launch. The download service was initially rolled out in November 2001 using Microsoft's Advanced Streaming Format technology, but a year later the company abandoned this approach in favour of the MPEG4 path, supplemented by at least one product that used the Nancy codec from an Asian company called Office Noa.

Sha-mail launched its video services using Nancy Technology, a proprietary image processing and transmission technology developed by Tokyo-based Office Noa. One important feature of the Nancy solution is that it is exclusively software based, which lowers its power consumption requirement to less than one-tenth of that of most MPEG4 solutions. However, J-Phone also offers services that employ the more conventional MPEG4 format.

Although Office Noa remains a relatively small operation, the company's gutsy president and CEO Noriko Kajiki has set her sights on the adoption of Nancy compression/decompression as the de facto standard right across Asia and eventually worldwide. At the forefront of this campaign is capture of the Chinese market, where her company has started to make significant progress – Nancy has already been adopted by China Mobile. In 2002, Noriko Kajiki told Nikkei Electronics Asia, 'My vision for this technology is a reversal of what has been the case with earlier technologies in the field. It was born in Japan, is spreading to China and throughout Asia, then will reach Europe, and finally the US.'

In July 2003, however, Kajiki's dream suffered a major

set back with Vodafone's announcement that it had selected Real Player as its global partner for video streaming technology. It's a decision that has floored industry commentators like Wireless Watch Japan, which credits much of the success of J-Phone's movie sha-mail to the Nancy codec. The newsletter's Arjen Van Blokland believes that, while Office Noa may continue to make regional gains, the company now needs to win over the recent inter-working alliance of T-Mobile, TIM, Telefonica and Orange in order to secure a long-term future for its technology.

Vodafone's decision to go with Real confirms the conclusion of analysts Strategy Analytics that have argued that 'The ability to drive distribution through partnerships is a crucial determinant of streaming solution players' long-term success. For this reason, Real Networks, which has recently partnered with Nokia, Openwave and others, remains in the strongest [player] for the longer term.' However, the analysts also believe that in the short term proprietary solutions will have their day as 'carriers continue to look for ways in which the addressable market for services can be built quickly and with minimum cost to themselves or their customers.'

Just as the Japanese mobile video market appeared to be on a roll, news broke in June 2003 that the country's video content providers were in revolt over a missive from US-based MPEG LA, LLC, which manages the collective MPEG related patents for MPEG4. According to Nikkei Business News, the Mobile Content Forum and the Association of Media in Digital, two groups representing content providers in Japan, voiced concerns that Japanese content providers were being expected to pay from 25 cents per user up to US\$1,000,000 per year, depending on the volume and manner in which users download content. The industry has argued that such fees are unsustainable.

The MPEG LA move came as a shock because in the past with formats like MPEG2 the patent holders have imposed royalties only on companies selling encoders and decoders of the video format.

Besides the royalty imposed on content providers, the Nikkei Business News report said licensees will also need to track data such as user numbers and delivery times for the MPEG LA – a stipulation which they would find problematic and potentially expensive. Asian commentators have suggested this kind of move can only encourage the adoption of proprietary products like Office Noa's Nancy or the ITU endorsed H.264 solution. ►

MPEG LA, however, is currently in discussion with concerned parties and seems confident that matters will be resolved.

This unrest in Japan is reflected by developments in China, where Huang Tiejun, secretary-general of the Audio Video Coding Standard Workgroup, has announced his country's intention to develop its own video compression standard called AVS. It is planned that AVS will be proposed as a national standard for China some time in 2004 and will almost certainly impact the development of mobile video development in the region. According to a Dow Jones report of August 2003, multinationals like Microsoft, IBM and Philips have already signed up for the new standard's working group.

Like Office Noa's Noriko Kajiki, video streaming experts like UK based Forbidden Technologies have argued that MPEG4 is simply not an appropriate standard for 2.5G video-streaming. Certainly a firm like California's Thin Multimedia has built its business on a proprietary codec created because the devices of the day had insufficient processing power to decode MPEG4 at speeds that would create compelling mobile applications. Thin Multimedia is best known for providing the world's first commercial wireless video solution, deployed with SK Telecom and LG Telecom in South Korea. The South Korean system operates over CDMA networks, but the company has also delivered a solution for Israel's Cellcom services over the operator's existing GSM network.

However, in spite of numerous competitors and minor setbacks, most commentators conclude that MPEG4 is likely to win the day – especially by the time more 3G networks are up and running and major device issues resolved. Analysts like Strategy Analytics believe that MPEG4 has the distinct advantage of 3GPP endorsement and the ability to facilitate compatibility among products from different vendors. The analysts also go on to point out that licensing issues could possibly turn out to be a serious stumbling block.

Drive to market

Presumably with operators' eyes firmly on the Christmas 2003 market, the trickle of mobile video launch announcements is beginning to gain momentum. In Europe, Cyberclick Agent, a digital media company in Spain, is set to launch a new mobile video-based entertainment application with Telefonica Moviles. This is supported by US-based helloNetwork's Java-based

solution. In August 2003, Hutchison Whampoa-backed 3 UK launched an aggressive new promotion of its premier football league video highlight service. The operator wants to sign up one million subscribers by the end of the year. In addition, O2 in the UK and Sonara in Finland have both conducted low-key mobile video trials, with a commitment to roll out services in the near future. The former, which is working with Emblaze Systems, conducted a survey during its pilot and some 45 per cent of the trial subjects said they were likely or very likely to use a commercial service if it was reasonably charged.

As far as the US is concerned, until recently there has decidedly muted interest in any kind of mobile messaging solution. However, T-Mobile's consumer focused picture phone offering might have turned the tide. Over one million messages were sent in the first three months of 2003 and in March the carrier announced the launch of the country's first video messaging service. Maybe MMS will precipitate the messaging breakthrough the US market's been waiting for.

There seems little doubt getting mobile video right will be a key differentiator for 3G operators. This is why all the haggling over right and wrong codecs is so important. The fact is that in the marketing plans of most operators, 3G for the mass market means 3G with good quality video streaming. More importantly, to the extent that it has made any impact on the collective consciousness of consumers, 3G is generally perceived as an offering that comes with some kind of mobile video proposition. This means that once again operators need to be extremely mindful about managing customer expectations.

On the one hand, mobile video services are being launched into a market that's beginning to equate video with home cinema quality broadcast. On the other, people have learned to lower their expectations for the convenience of accessing video over the internet.

Encouraging an acceptance of this trade off between image quality and convenience clearly needs to be at least implicit in marketing campaigns. Yet this has to be offset against the fact that most 3G mass-market business models anticipate significant revenue from new services like video applications. It seems likely this will have to come from volume take up rather than high tariffs. Even the most bullish players would consider premium rates and marketing strategies that seek to lower consumer expectations a poor mix. ■