



Which platform will rule the world?

*There are billions of dollars in revenue to be made from streaming mobile TV. But which technology platform works best for content delivery? **Mike Feazel** weighs the options against the factors that come into play.*

In North America, mobile-TV technology MediaFLO is reportedly taking the lead, following recent announcements by major US-based wireless-telephone companies AT&T and Verizon Wireless of their plans to deliver mobile video via the platform. The telcos' choice is no doubt influenced by this technology's reputation as among the more robust available for the deployment of video content to cell phones and other handsets.

Outside the US, MediaFLO's developer, Qualcomm, recently completed a high-profile trial in Europe, in partnership with British Sky Broadcasting (BSkyB). Meanwhile, Asia is where a third of the more than 75 companies in the FLO Forum, set up to develop and promote the MediaFLO technology, is based. However, having a large number of Asian bases does not necessarily argue for the platform's dominance in the region where the outcome of the competition pitting this technology against Europe's DVB-H and other home-grown Asian technologies is still far from clear.

"The odds are that it will be a multi-standard world for delivering TV to mobile phones," says FLO Forum president Kamil Grajski, who is also vice-president for engineering at Qualcomm. While maintaining forum members' confidence in the technology, Grajski believes that many other factors come into play when choosing equipment vendors. It remains to be seen, for example, if governments will have a big impact on decisions like the adoption of home-grown technology for the good of local business, says the forum chief.

In Japan, for example, serious discussions are ongoing between industry and the government on how to handle spectrum issues for mobile TV. Grajski thinks it is "too early to tell how that will play out". The FLO Forum is just working towards a "level playing field" in Japan which shows its confidence in MediaFLO, he says.

A Japanese decision on mobile video is likely later this year, Grajski adds. Although other technologies enjoy strong industry support in the country, the FLO Forum counts among its

members Japan's KDDI and Softbank which are planning FLO trials. And they are not alone. South Korea's three wireless operators are also "very active" in the forum.

Regardless, some tailoring of the technology is likely in Japan and China, Grajski concedes. Specifications for transmitters and air interfaces are set internationally, but adjustments can be made to suit the country. China is said to be working on a more home-grown standard for mobile TV.

It is hard to say which mobile-video technology will dominate the rest of Asia, Grajski admits. Still, he is heartened by a major uptake in the number of FLO technology and market trials in the region.

The attraction of 'TV on cell phones' is becoming more apparent. The goal is to be able to watch live programming from broadcast TV, be it cable or satellite, anywhere at any time on a device that many people are already carrying. News, weather and traffic programming would be instantly available to commuters. People standing in line for a bus could watch their favourite telenovelas to pass time. Travellers would never have to miss live telecasts of sports events. Teenagers could watch TV in their rooms without a dedicated TV set.

The TV industry sees the opportunity to reach larger audiences via mobile TV and the billions of dollars in potential additional advertising or subscriber revenue that this proffers, Grajski says. Their only concern is whether TV will look good on a two-inch screen.

"Broadcasters are saying their content is valuable, and they want to protect the user experience," Grajski says. "But they need to go where the eyes are and, increasingly, they on the mobile handset. [Operators] can't help but embrace it."

The evidence that consumers will flock to high-quality video on cell phones remains largely circumstantial, as there have been few full-scale trials to date. The main evidence comes from the popularity of lower-quality mobile-video services, based on 3G wireless technologies, in places like Japan and South Korea.

Grajski observes a growing number of marketing and focus-group studies showing that "if the user experience is there, people are consuming [mobile video] in surprising ways, including a surprising amount at home". He cites the situation of teenagers choosing to watch TV on their cell phones instead of on family TV sets with their parents.

One of the biggest tests involving 4,000 US consumers took place last year, says MediaFLO US president Gina Lombardi. With the full results yet to be disclosed, the US' two largest wireless operators, AT&T and Verizon, have already decided to launch their full commercial services this year using MediaFLO. Their decision was even before the services were expected to be available to as many as 100 million Americans by mid-year.

"We know consumers' appetite for entertainment is high", based on the trials, says Mark Collins, AT&T marketing vice-president.

That seems to suffice for Verizon as well. The company will deliver video with 320x240-pixel resolution to cell phones, streaming content from eight programme providers, including NBC Universal, Fox and ESPN, says Lombardi.

These content providers will deliver the programming to Qualcomm's operations centre in San Diego, USA, via fibre or satellite. Qualcomm will send it via satellite to two or three cell towers in each of the city's 20-30 metropolitan areas for distribution to cell phones throughout the city.

MediaFLO, labelled a "second-generation technology" by Grajski, delivers video at 25-30fps, much higher than most existing 3G video systems. Although it has been described as offering QVGA quality, consumer and broadcaster interest alone does not determine which technology will eventually succeed.

Meanwhile, DVB-H, which had a head start on MediaFLO, is up against the latter's obvious technical advantages. One of MediaFlo's key advantages is that it does not have to be backward-compatible with terrestrial broadcast systems, allowing it to be better optimised for mobile delivery. However, it requires new frequency while DVB-H can often piggyback on existing broadcast frequencies.

Streaming content via MediaFLO is much like a broadcast in that a single transmission can be watched on an unlimited number of handsets, unlike some technologies that require a separate spectrum link between the central antenna and each handset.

The platform's other strengths cited by Qualcomm officials include enabling a channel change in under two seconds — less than half the time taken by some competitors; layered modulation, which extends the coverage area, allowing for gradual degradation of the video signal; and long battery life (nearly four hours for a typical 850mAh battery), said to be nearly twice as good as alternatives.

The Qualcomm-BSkyB trial also indicated that MediaFLO could cover either twice the geographic area per transmitter as DVB-H, or deliver twice as many channels. Grajski says tests have shown that MediaFLO can deliver between 1.5 and two times as many video channels per MHz as DVB-H. Its "robust and growing FLO ecosystem" is another key advantage, he adds.

Further, the large number of manufacturers for each component in the FLO system guarantee continued development and a competitive supply market.

Still, competing platforms are not short on support. Nokia and Sony, for example, support DVB-H. The ISDB-T system, too, finds backing in Japan. Even the US holds potential competition. A mobile version of the ATSC standard for DTV is said to be nearing final approval, and Harris Broadcast recently hinted at the unveiling of ATSC-compatible mobile-video technology at this year's NAB convention. Indeed, Crown Castle is already offering to deliver mobile video via its version of DVB-H, called Modeo.

But, Qualcomm has taken steps to unify mobile video. At a recent telecom convention in Barcelona, Spain, the company announced a universal-broadcast modem chip that could receive MediaFLO, DVB-H or ISDB-T, assuring that it will be delivered to handset vendors at essentially no additional cost, unlike one-technology chips. Its chips can operate anywhere in UHF bands, and are tuneable for 5-8MHz channel bandwidths.

“Qualcomm believes the adoption of mobile TV on handsets is poised to grow at an exponential rate,” says Mike Concannon, Qualcomm’s vice-president for strategic products. “We remain committed to supporting other standards that network operators may choose to deploy.”

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27.04.2007