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FEATURE STORY

Mobile TV: the smart and the strategic

Given the myriad options available for mobile TV, successful services will be the result of smart choices—and strategic partnerships. Martin Farrimond, Broadcast Australia General Manager New Platforms, explores the mobile TV value chain.

Amid the industry excitement inspired by mobile TV, it pays to take a step back and put everything in perspective. Certainly there is huge market potential, but the ultimate shape of the mobile TV enterprise is far from a forgone conclusion. The ideal business model is still under debate, with emphasis being placed on identifying the key players in the value chain. This challenge is compounded by the sheer number of different mobile TV technologies and network topologies under consideration across the world.

In the first instance, there needs to be a distinction between the two main guises of video on handheld devices: that which is downloadable for viewing at one's convenience (for example, 'video on demand' or 'podcasts'), and that which is streaming content in real time ('mobile television'). Downloadable content, by its very nature, is generally delivered to handheld devices via one-to-one (unicast) connections, such as 3G cellular or even the Internet. Streaming content, on the other hand, can be delivered via either unicast or broadcast platforms (one-to-many).

Broadcast mobile TV delivery platforms offer a number of advantages for high-demand/popular programs over 3G unicast. One of these is the utilisation of dedicated spectrum for broadcast services, which eliminates any impact (or dependence) on 3G services. The greater sustainability of broadcast TV platforms is well accepted, as is the superior video and audio quality that can be delivered. The dedicated spectrum also means that mobile TV services can be broadcast using 'more ideal' spectrum. UHF and VHF Band III frequencies offer the best balance of coverage penetration, handset design, infrastructure costs, and practicality. L-Band frequencies are also being utilised in some deployments where UHF spectrum is scarce.

The choice of network topology for broadcast mobile TV is generally dependent on how best to leverage existing infrastructure. Two leading architecture models have emerged: the 'mobile network overlay', where existing mobile base station infrastructure is employed; and a 'broadcast network overlay', where existing broadcast transmission infrastructure is utilised. It is likely that a hybrid of the two will result in most cases.

Another variable is the plethora of mobile TV standards and platforms developed globally to combat issues of mobile device reception, battery life and screen resolution. These include Digital Video Broadcasting-Handheld (DVB-H) and its satellite hybrid variant (DVB-SH), Digital Multimedia Broadcast (DMB) terrestrial and satellite, Media Forward Link Only (MediaFLO), Integrated Services Digital Broadcasting (ISDB) '1seg', and additional standards in development, particularly in China and the USA. There is little doubt that each will provide a technically viable, high-quality broadcast television service to mobile handsets; however, the winners will likely be those that gain mass market traction first and 'pull through' significant handset volumes.

The consumer proposition

However, technology choices are just one of a number of key factors that will be critical to the long-term viability of mobile TV networks. The ideal mobile TV business plan will also depend on the following inter-dependent factors: getting the consumer proposition right; understanding the competitive environment and identifying the value chain; plus strategic network deployment and channels to market.

Arguably, the consumer proposition should be considered first, because without it there's no business case for mobile TV. The good news is that consumers are genuinely interested. Nevertheless, there are four critical factors that will be essential to the success of any new mobile TV service. These are becoming known as 'the four Cs' of mobile TV success: content, convenience, coverage and, ultimately, cost.

Content—in terms of both programming and format—will undoubtedly be key. Trials in many countries have shown that consumer engagement extends from a short mobile TV 'snack' through to viewing segments of typically 30 minutes or more. These tend to occur at non-traditional times, such as lunch breaks and the daily commute, and also during the more traditional evening viewing period. Mobile TV clearly has the potential to capture a hitherto untapped audience, so long as the programming is right.

Given the plethora of entertainment options in today's environment, modern consumers have short attention-spans. It will thus be imperative that mobile TV content is compelling, with a wide

selection of genres available to entice users to the service. This suggests the need for a rich mix of relevant local, international and 'specific-to-mobile' content. Moreover, integration with other services, such as 3G, to allow interactivity is likely to be a driver for user take-up.

User *convenience* plays a significant role here as well. This is related largely to handset performance (and appearance), but is also linked to the quality of service (also referred to as quality of experience) and the extent of *coverage* achieved by the mobile TV network. As they have come to expect ubiquitous coverage for their 2G and 3G phones, mobile TV subscribers will demand a perfect picture, everywhere, all the time—whether outside on the street, inside office buildings, commuting on subways, or in the depths of shopping malls. The quality of the picture will be a function of many factors, some related to the design and functionality of the handset, others related to the performance and design of the network itself.

Identifying the key markets to cover first will be critical, and well-defined plans for evolution will need to be in place. Indoor coverage in strategic metro tunnels, shopping centres and airports (for example) will also be essential. Systems also need to be designed to provide a reasonable level of indoor coverage into office buildings and homes.

Consequently, the successful mobile TV network will achieve an appropriate balance between a high quality of service, the right level of coverage, and the amount of infrastructure deployed—essentially a balance between factors that will dictate subscriber take-up, and those that will impact network *cost*.

The value chain

It is for good reason that mobile TV is being hailed as the herald of true convergence. The realisation of a successful mobile TV service demands the participation of a great many players and the establishment of a functional working relationship. These multiple stakeholders need to collaborate to ensure that content is delivered to the target audience and that revenue is collected and distributed among all parties. Choosing the right partners in this competitive environment and being clear about respective roles in the value chain will be essential.

The mobile TV value chain can be broadly divided into three main 'links': content provider, deliverer of the mobile TV service, and channel to market. The latter role will, in many markets, be played by a cellular network operator, since such companies already 'own' the customer through existing mobile 2G and 3G services. However, we may see in some markets other players with substantial consumer market presences assume this role (for example, pay TV operators). This

entity therefore acquires, owns and manages the relationship with subscribers to mobile TV services.

At the other end of the chain lies the content provider. Traditionally the so-called 'broadcaster' has played the dual role of content provider and deliverer. However, the landscape of digital television has shifted in recent years. The industry has seen the emergence of a new wave of digital content developers and re-packagers, in conjunction with a wider range of delivery platforms such as cable, IP/Internet, and now mobile TV. Content provision is now a business all of its own, frequently quite separate from delivery.

The middle link in the value chain, associated with delivery of the service, can be made up of either one or a number of parties that take care of content aggregation, multiplexing, spectrum licence, and transmission.

Smart choices

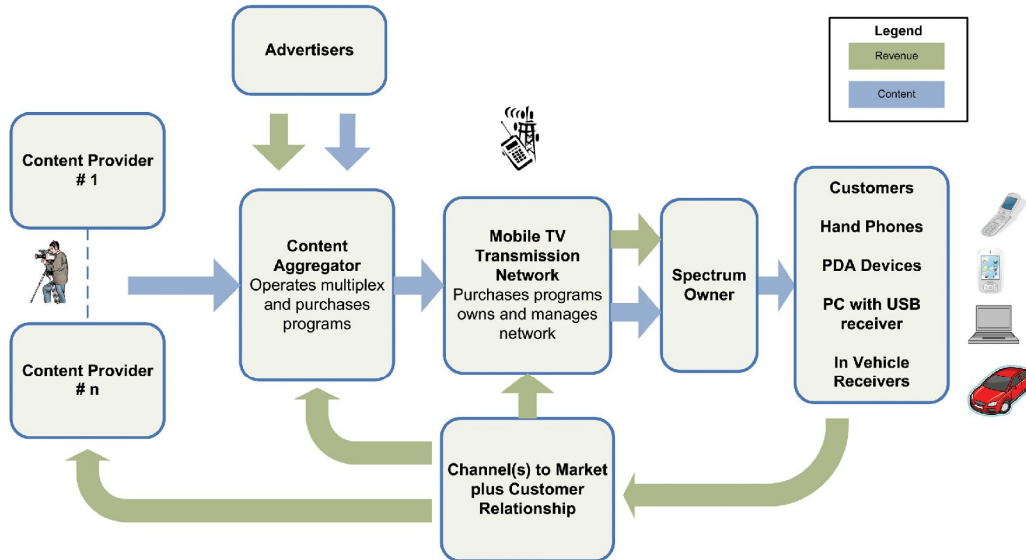
Establishment of the broadcast transmission network is likely to involve significant capital outlay. It will therefore be imperative to get implementation right at the outset. This means understanding the strengths and weaknesses of the different technology platforms and network architectures, and making smart choices. These initial choices will radically drive the level of network investment and influence long-term viability.

The most straightforward and economical network topology is to deploy mobile TV multiplex/services at a city's main television broadcast transmission site to provide blanket coverage. Strategically placed supplementary in-fill repeater stations support the main transmitter, ensuring the required depth of coverage is delivered for reception on handheld devices, especially in areas of high building clutter. This architecture requires far fewer transmission sites than those associated with a pure mobile network overlay. However, typically existing mobile base station sites are ideally located to site the in-fill repeaters, thus a hybrid network topology will normally achieve the best outcome in terms of balancing cost and coverage.

Network coverage planning will be particularly vital to ensure that both consumer expectations are met and deployment costs are kept to a minimum. In most cases, the planning stage will involve the design of a Single Frequency Network (SFN), which, for the high number of sites required for a mobile TV network, is likely to be complex. Network planning will also involve planning for in-building coverage—balancing this with the increasing costs of building networks with greater in-building penetration will be critical.

As with the evolution of cellular networks, identifying the key markets to cover first with a mobile TV service will be important. Certainly, an opportunity to de-risk deployment lies in phasing the service launch across geographical areas. At the end of the day, any mobile TV network will be a balance between establishment and operational costs, versus the price that is acceptable to consumers. The key will be pacing investment to develop a revenue stream, which can then be fed back into the network.

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The mobile TV value chain: Choosing the right partners and being clear about respective roles will be essential.



Four critical factors will be essential to the success of any new mobile TV service: content, convenience, coverage and cost.



Broadcast Australia General Manager New Platforms, Martin Farrimond.

Company background

With over 70 years experience as the owner and operator of one of the most extensive terrestrial broadcast transmission networks in the world, Broadcast Australia provides end-to-end transmission services for radio and television (analogue and digital) broadcasters. The company's core competencies include planning and network design, engineering design and project management, complex systems integration, site development and installation, operations and network management and in-house repairs and maintenance.

Broadcast Australia also develops world-class solutions and applications for new and emerging technologies—such as Infocasting, Digital Radio and Mobile TV—working with strategic partners throughout the Asia Pacific region. Subsidiary companies include Hong Kong-based confined space coverage group, Radio Frequency Engineering Limited (RFE), systems integration and product supply specialist, The Bridge Networks, and critical application and hosting provider, Hostworks. Broadcast Australia is a 100% owned subsidiary of Macquarie Communications Infrastructure Group, an entity listed on the Australian Stock Exchange (ASX code: MCG).

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