

# With Mobile TV Projected to Take Off, are Service Providers Ready?

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An assessment of key success variables to harvest impending demand

By H. Mittermayr

Service providers harboring any doubts about the future of mobile TV should take a hard and sober look at current forecasts. The numbers cited by multiple sources make it clear that mobile TV is not only poised for rapid growth, but also for global penetration. This creates an entirely new set of challenges and opportunities for service providers around the world. The implications for infrastructure investment, new business model development and strategic planning are significant. Consider the following:

- Analysts at IMS Research forecast that nearly 500 million people will be watching TV on cellular phones by the end of 2011. This growth, say the researchers, is driven primarily by the adoption of broadcast-based services; mobile digital TV will experience 50% year-on-year growth through 2010.<sup>1</sup>
- ABI Research is even more upbeat about the future of mobile TV. Analysts there expect mobile video services to produce a compound annual growth rate of nearly 60%, amounting to \$10 billion in 2012.<sup>2</sup> Moreover, by early 2010, they project even quicker growth in digital broadcast services to overtake cellular network-based mobile TV. By then, more than half of the world's mobile TV subscribers will receive their video via a mobile digital broadcast. ABI reports that mobile video messaging services are at the center of a technology convergence that is helping mobile customers realize greater levels of self-expression and online community participation.
- In April 2007, consultants at Canalys in the UK surveyed more than 2,000 employed, adult mobile phone users in France, Germany, Italy, Spain and the UK.<sup>3</sup> Among their more interesting findings were:
  - 51% of those surveyed expressed some interest in mobile TV.
  - Consumers are more open to advertising-supported services related to location and communication rather than to TV.
  - 62% said it would be useful to have satellite navigation built into their mobile phones.

Most industry observers agree that the industrialized areas of the world with high concentrations of advanced video devices will see the greatest uptake of mobile video services. However, a growing number of analysts expect a significant proportion of this demand to come from developing economies. A new generation of users is expected to leverage relatively inexpensive devices and ubiquitous wireless infrastructure to access content services that have traditionally been restricted to consumers of wired broadband resources.

The rapid growth of this market – expected to double in size every two years through the early part of the next decade – is prompting many telecom service providers to examine their current infrastructures, business partnerships and business strategies to determine if they are in a position to harvest this impending wave of demand.

<sup>1</sup> ©2006, Mobile TV – A Complete Analysis of the Global Market – 2006 Edition, IMS Research

<sup>2</sup> Mobile Video Communications Services, ABI Research

<sup>3</sup> ©2007, The Consumer Mobility Analysis Service, Canalys

The size of the mobile TV opportunity – and the rapid speed with which this market is already developing – has prompted the development of a dedicated Alcatel-Lucent team that is:

- Studying key business and technology trends
- Understanding in detail end-user needs in relation to TV consumption
- Identifying possibilities to leverage existing infrastructure to secure synergies and therefore cost savings
- Working with both the global service provider community and the broadcast community to develop fulfillment strategies and business plans to monetize these rapidly unfolding developments

In so doing, the Alcatel-Lucent team has identified a set of variables and best practices that will determine the extent to which service providers will be able to harvest the mobile TV opportunity.

### **Simplifying the Delivery of Mass-market Mobile TV**

One of the keys to achieving success with mass-market mobile TV is to develop offers that simplify the delivery of new services. Today, end users want high-quality access to their favorite channels anytime, anywhere. They want mass-market channels (sometimes called the “fat tail”) as well as niche channels (the “long tail”). As a result, Alcatel-Lucent is advising service providers to look for ways of delivering a diversified set of mobile TV-based offerings that integrate a mix of mainstream broadcast channels (one-to-many transmissions) with the ability to support unicast transmissions (video communication between a single sender and a single receiver over a network).

Service providers that create a successful mix of broadcast and unicast services, while combining them with interactive capabilities, will not only improve the performance of their customer retention initiatives, but also drive higher mobile service revenues.

In any case, a dedicated broadcast network is mandatory as a kind of overlay to existing cellular networks. To deploy and integrate such mobile broadcast services over existing network infrastructures, a few key questions must be addressed, including:

- What spectrum is required?
- Which standard must be supported?
- How can target coverage be achieved effectively?
- Which existing assets can be leveraged?
- What is the best way to combine services?

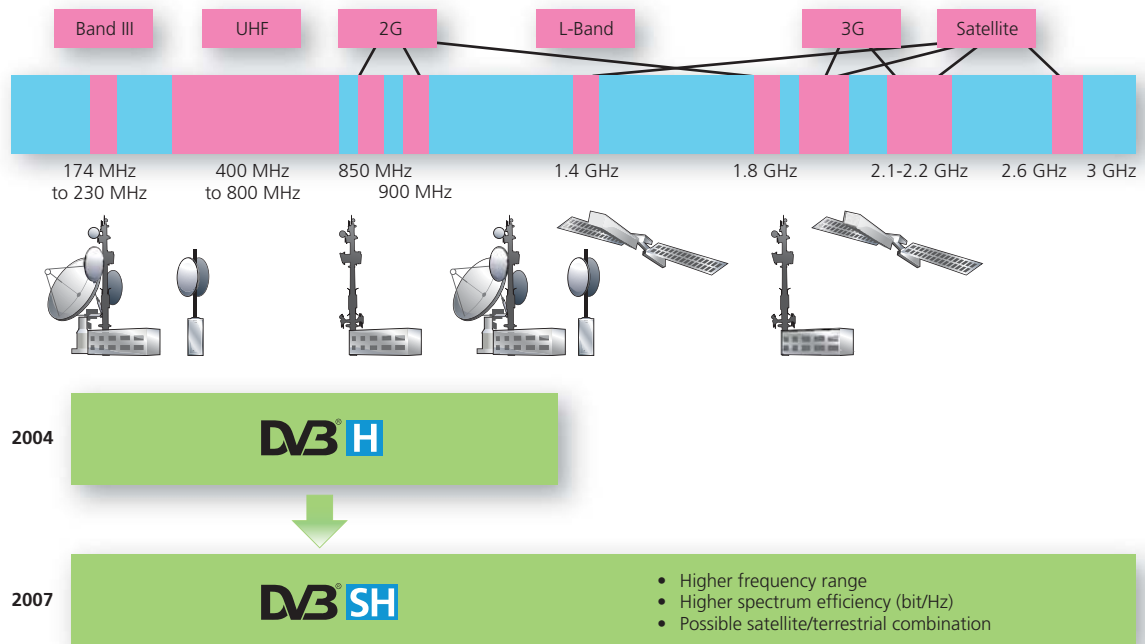
### **Leveraging Existing Infrastructure Assets**

It is important to optimize the use of existing network investments and resources, and combine them with new technical capabilities and spectrum options to deliver a complete end-to-end solution.

Depending on a service provider’s current asset base (network and spectrum – Figure 1) and service objectives, service providers should look for ways to take advantage of:

- High-power mobile broadcast satellites, which provide direct terminal reception across rural areas nationwide
- Medium- to high-power transmitters for urban/suburban outdoor reception
- Low-power transmitters for cellular-like quality of service in urban indoor areas

Figure 1: Alcatel-Lucent: selecting the standard adapted to your spectrum options



Alcatel-Lucent believes that full flexibility between terrestrial and satellite transmission will be critical to the distribution of mobile TV service with the required channels and the expected coverage. That is why it will be important to identify strategies for enabling end-user terminals (i.e. mobile devices) to receive broadcast TV signals from either terrestrial repeaters or directly from satellites, while leveraging third generation (3G) broadband connections to support unicast TV.

One of the most important decisions service providers can make is to integrate their IP infrastructure developments with their broadband wireless platforms. Done properly, the mobile TV service delivery platforms should be able to adapt and aggregate TV programs and rich multimedia services onto IP service streams and let the infrastructure automatically select the transmission format – broadcast, unicast (second generation, 3G, etc.) and even Internet Protocol TV – that is appropriate for the application.

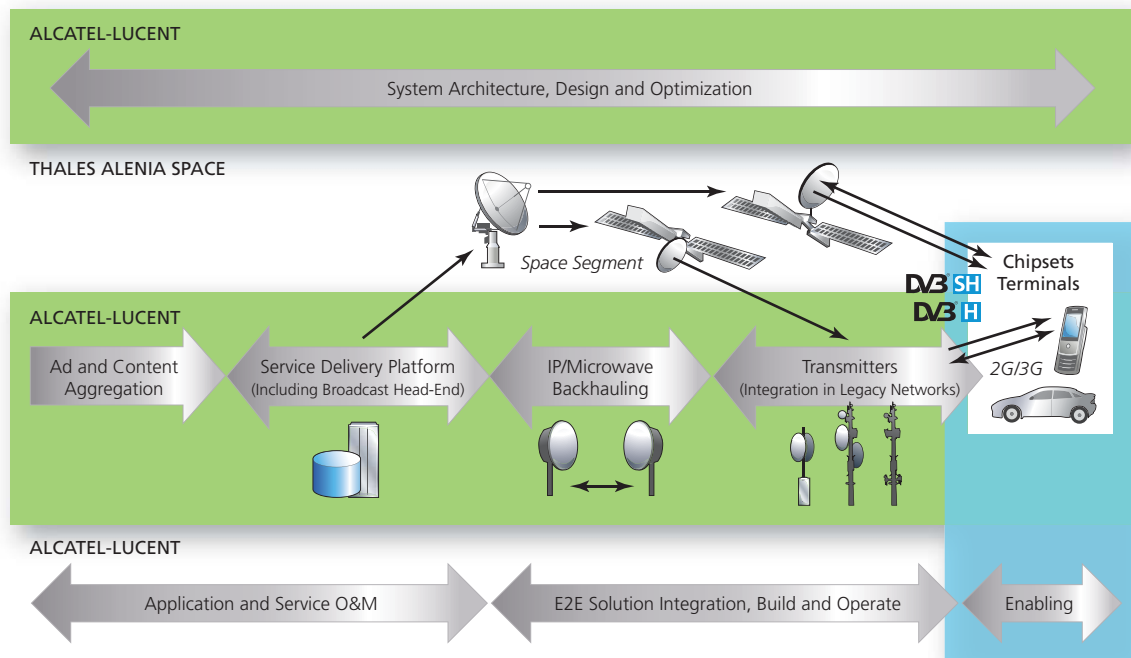
### Embrace Relevant Mobile TV Standards Early

Alcatel-Lucent believes that solutions should be based on open standards, such as that defined by the Digital Video Broadcasting (DVB)-Forum. The company initiated the development of a further evolution of DVB-Handheld (DVB-H), with three main goals:

- Achieve better spectrum efficiency to save costs
- Make it suitable for wider frequencies to benefit from spectrum availability
- Enable satellite/terrestrial hybrid networks to optimize coverage

The result is that infrastructures based on the DVB family of mobile TV standards will be able to use a wider spectrum, integrating everything from ultra high frequency signals up to 3 GHz transmission, and save on deployment costs. This approach will allow service providers to choose the best combination of DVB-H and Digital Video Broadcasting – Satellite services to Handhelds (DVB-SH) technologies, satellite and terrestrial transmitters, low and high frequencies – whether in a dense urban/industrialized environment or in a rural/emerging economy (Figure 2).

Figure 2: Alcatel-Lucent unlimited mobile TV solution with DVB-H/DVB-SH



The standards are already quite mature, robust and integrated. It is now possible to leverage DVB-SH-based infrastructures to enhance the range of DVB standards for the delivery of mobile digital television. As DVB-H, the DVB-SH standards support the delivery of IP-based media content and data to mobile phones, Portable Multimedia Players (PMPs) and in-car devices. They will also enable three key improvements to facilitate and optimize mobile broadcast implementation:

- Facilitate the ability to work with multiple channel configurations at up to 3 GHz, allowing a much greater choice in terms of spectrum options.
- Improve spectral efficiency and reduce costs, since DVB-SH offers twice the number of channels from the same capital expenditures investment.
- Extend mobile broadcast reach by using DVB-SH to roll out hybrid satellite/terrestrial operations across a region. The terrestrial components ensure efficient coverage (including indoor) in urban and dense areas; satellite transmission provides coverage in rural and outdoor areas where a terrestrial network would be too expensive to deploy.

Beyond these transmission-related improvements, DVB-SH fully complies with and benefits from the existing upper-layer services (electronic programming guide, content delivery protocols, service purchase and protection) defined for DVB-H.

### Mobile Interactive TV Successes

Alcatel-Lucent can help service providers jump-start their mobile TV businesses by helping them develop a complete understanding of their market and end-user expectations. The company has established an ecosystem of industrial and research partners to optimize the delivery of unlimited mobile TV. Furthermore, support has been secured from renowned international scientific institutions in the field of hybrid satellite and terrestrial reception; complex wave form optimization; and the optimal delivery of video and audio services over cellular networks.

Interactive mobile TV deployments are under way with over 80 mobile operators around the world, including Orange with its World Video portal; Telefónica in Spain and Mexico; T-Mobile in Germany, the UK and Austria; MTN South Africa; and Optimus and SIC TV in Portugal.

Detailed technical trials of mobile broadcast networks based on DVB-SH are also being carried out for many mobile operators.

- Vodafone SFR is running a trial in Pau in the south of France.
- H3G Italy and RAI recently started a DVB-SH trial in Turin. This is an interesting development, since H3G Italy has already deployed a significant DVB-H network, but is now testing DVB-SH as a potential evolution.
- ICO US has launched its Mobile Interactive Multimedia Service offer based on DVB-SH. It plans to cover the whole of North America, using satellites to complement with terrestrial repeaters.

## Conclusion

In response to all the current activity and attention surrounding mobile TV, Alcatel-Lucent has launched a complete mobile TV solution designed to optimize the delivery of broadcast digital multimedia services to mobile end users. Called Unlimited Mobile TV, the solution creates an opportunity to help service providers optimize the exciting emerging market for mobile TV broadcasting.

The solution team has already demonstrated the world's first unified mobile TV experience across 3G and broadcast networks, which enables a compelling end-user experience, combining unicast and broadcast channels connected to the same service platform on the same handset.

Media solutions include mobile interactive TV applications, which allow extensive interactivity and personalization, complement traditional live TV with made-for-mobile content, and create the opportunity to deliver targeted, advertising-supported content to end users.

Alcatel-Lucent is currently working with service providers to design, develop, deploy and operate effective mobile TV services that are optimized to leverage existing infrastructure investments and to serve discrete demand segments.

The company believes that it is important for service providers to move beyond point-to-point mobile TV offers and to provide mass-market access to mainstream TV channels on mobile devices. To do this, service providers must deploy dedicated mobile broadcast networks that complement existing cellular networks. The design of these networks may be expensive; however, Alcatel-Lucent can help minimize the expense and risk of mobile TV deployments by designing mass-market solutions that address the expectations of consumers, television broadcasters and mobile operators. ❄

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## Alcatel-Lucent teams up with many service providers to make mobile TV a reality

Alcatel-Lucent has undertaken a series of joint initiatives with service providers to ensure the availability of mobile TV capacity in time to harvest projected consumer demand. Unlimited Mobile TV with DVB-SH has attracted mobile service providers, as well as broadcast network operators and satellite operators.

- ❖ Already in 2005 CNES (Centre National d'Etudes Spatiales), Orange France and Alcatel-Lucent joined forces to test the new mobile broadcasting concept with hybrid satellite and terrestrial transmission system using S-band. This system is central to Alcatel's "Unlimited Mobile TV" solution. The technical trial was performed in Toulouse.
- ❖ In October 2006 SES and Eutelsat announced their plans to operate the W2A satellite provided by Thales Alenia Space. Scheduled for launch in 2009, the W2A satellite will support the delivery of mobile broadcast services across Europe. Alcatel-Lucent's Unlimited Mobile TV solution is designed to integrate transmissions from satellite signals and terrestrial repeaters. The initiative is an early example of the synergies offered by hybrid terrestrial/satellite telecommunication networks and applications.
- ❖ In February 2007, Alcatel-Lucent and Telefónica announced a pilot project for mobile interactive multimedia (MIM) services in Spain. The pilot project encompassed a comprehensive offer of cutting-edge interactive TV, radio and music services for mobile handsets.
- ❖ In the same month, Spain's Abertis Telecom and Alcatel-Lucent set up a joint working group to explore the development of the mobile TV market, and to evaluate the technical specifications of Alcatel-Lucent's *Unlimited Mobile TV* system in the Spanish market.
- ❖ In June 2007 Vodafone SFR announced that it is performing a technical test of broadcast mobile TV using the DVB-SH standard in the S-Band (2.2GHz). This pilot took place from June 2007 on in the South-West part of France. It is using SFR's operational 3G mobile infrastructure.
- ❖ In July 2007, Alcatel Lucent teamed up with ICO Global Communications in the United States to provide end-to-end network integration services as well as equipment, engineering and implementation services for ICO's alpha trial of Mobile Interactive Media (MIM) services. The offer will be provided over ICO's integrated satellite and terrestrial network using the new DVB-SH mobile broadcast standard.
- ❖ In December 2007, H3G Italy and Radio Audizioni Italiane (RAI) started a DVB-SH trial in Turin. H3G Italy has already deployed a significant DVB-H network, and is now testing DVB-SH as a potential evolution. The downward compatibility between DVB-SH and DVB-H will guarantee a seamless end-user experience.