2007 Mobile TV Distribution Market Map

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FirstPartner

Introduction

Welcome to the FirstPartner 2007 Mobile TV Distribution Market Map. This Market Map gives a concise summary of the Mobile TV landscape globally, describing the dynamics of the Mobile TV industry and highlighting key companies and trends.

The Opportunity

For Users...

Mobile TV is much more than traditional TV delivered to a small screen. In addition to being able to view content wherever they go - with a combination of linear TV, on demand TV and Podcast TV - viewers have access to easy-to-use programme guides, fast channel switching, interactivity and personalisation.

Multiple connectivity options and high capacity storage allow TV and video content to be delivered to the device through multiple channels and stored and viewed with complete flexibility. Downloadable Mobile TV clients offer consumers a convenient way to access services and search and select programmes and related content.

Interactivity and personalisation offer highly customizable viewing, for example delivering a notification when a viewer's favourite team has scored followed by a video clip and goal summary pushed to their device. Viewers can interact with friends and other communities - through commenting on or voting for their favourite contestant in a TV talent show - and can broadcast and share user generated video content.

Personalisation is valued by users. With Mobile TV delivered over the operator network, consumers can create their own programme portfolio. Based on their video-on-demand consumption history, a recommendation engine can offer a tailored programme schedule. Advertising can also be highly targeted, reducing viewing costs and ensuring relevance to the viewer.

For Content Owners and Broadcasters…

As TV and video content consumption becomes increasingly fragmented, Mobile TV provides another potential channel to reach and engage viewers regardless of their location and generate incremental revenues from content and advertising.

For Mobile Operators...

Mobile TV and video content offers the opportunity to increase engagement with subscribers, drive uptake of mobile data services, increase ARPU and realize new advertising based revenue streams.

Technology Enablers

With the exception of South Korea, where free services have been adopted by over 6M users, mobile TV markets are still at an early stage of development with demand and business models largely unproven. Key enablers to market success will include sufficient penetration of compatible handsets, acceptable costs to the consumer and effective user experience. In terms of underlying fundamentals:

- 3 Billion mobile subscribers by year end 2007
- 4 Billion mobile subscribers by 2010
- Bandwidth per user is increasing
- Usage cost per user is decreasing

Ericsson Mobile TV Booklet 2007

Mobile TV Trials

Over 80 Mobile TV trials have taken place globally and already a handful of services have launched. Territories with live services include South Korea, Italy, Finland, India, Philippines and Vietnam.

The majority of trials are already committed to turn into genuine services, in some cases with a nationwide footprint, in others in limited regions. By 2009 there will be 50-60 Mobile TV services deployed. Some trials include:

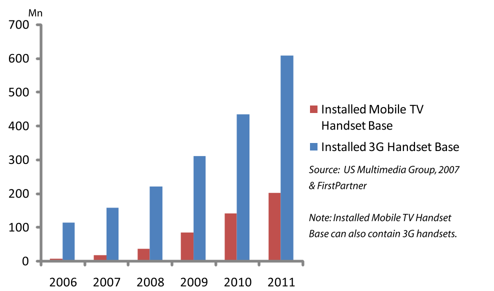
- Ericsson and NRK since 2005 - Netherlands
- Arqiva and O2 2005 - UK, Oxford
- CANAL+, Nokia, SFR & Towercast since 2006 - France, Paris
- TV2GO, Zentek, NCS, Nokia & Samsung since 2006 - Singapore Nationwide

Case Study Mobile TV, 3, Italy

3 Italia, the Mobile Media Company of the Hutchison Whampoa Group, was the first company in the world to launch commercial DVB-H mobile TV services. Its customer base was 100,000 one month after the launch on June 5th 2006, increasing to 400,000 by the end of December 2006. By May 2007, the company was reporting a customer base of 600,000. First audience measurements show a polarisation towards thematic channels (average weekly share 71%), while classic TV channels get a 29% weekly audience. In-house produced La3 Sport and La3 Live together get a 22% average share. Rai and Mediaset channels reach respectively a 15% and 14% average share. Customers show a high interest in sports (total average share of 28%) and news (top share of 30% is reached in the morning), while entertainment reaches a 15% average share.

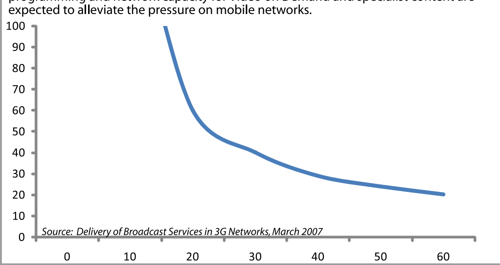
Future Market Drivers & Mobile TV Uptake

The graph below shows the rapid increase anticipated in handsets annually, with huge leaps during 2009, when 53mn broadcast TV enabled handsets are expected to ship. The graph also includes 3G enabled handsets as these devices are also able to receive Mobile TV.



Future Market Barriers

As Mobile TV uptake increases, the capacity limit of HSDPA is potentially challenged. The graph below shows TV usage in minutes (x-axis) vs. Addressable market - % of total subscribers (y-axis). For instance, assuming a TV usage time of 30 minutes per 12 hour, the capacity limit of HSDPA is reached if 40% of the customers are subscribed to the Mobile TV service. Hybrid services ustilising Broadcast technologies for mainstream programming and network capacity for Video on Demand and specialist content are expected to alleviate the pressure on mobile networks.



FirstPartner

FirstPartner is a fast growing strategic marketing and research agency. No other agency has the strength of understanding of technology and its impact on changing customer behaviour, combined with marketing know-how.

Disclaimer

The map includes information compiled from various reputable sources and other methods like structured interviews and surveys, conference material and information available in the public domain. As data and information sources are outside our control, FirstPartner makes no representation as to its accuracy or completeness. All responsibility for any interpretation or actions based on this map lies solely with the reader.

Personal Usage

At Home

At home, people tend to relax and Mobile TV content should be designed to fit this pattern of behaviour. Home mobile TV consumption also allows complete flexibility of viewing location.

Away From Home (Roam)

Whether abroad on business or on holiday, mobile technology allows viewers to access familiar content from their home country.

On The Move

Commuters and travellers have the opportunity to experience "light" content that entertains and informs, taking account of short available viewing times.

Public Transport / Car

Display screens are increasingly prevalent in public and private vehicles. Coupled with mobile TV technology, they bring the opportunity for a much richer audio visual experience and an additional distribution channel for operators.

The 4th Place

The mobile device has quickly established itself as the "4th Screen" after Cinema, TV and the PC. Mobile TV distribution and display technologies allow content to be consumed and enjoyed anywhere.

How To Interact With Mobile TV

Input Accessories

Eleksen
iTech Dynamic

Addressing some of the inherent form factor limitations of small mobile devices, these accessories speed content search and interaction where required while maintaining portability. Examples include projectable and cloth keyboards, and epaper.

Personal Projectors

Eye Wear
Icuiti
Inition
Microemissive
Myvu (Micro Optical)

Handheld Projectors
explay
Light Blue Optics
Microvision
Sunyang
TI

Innovations in pocket personal displays are set to transcend the limitations of the small screen display and transform the viewing experience and entertainment value offered by Mobile TV. Virtually large but actually small, these displays are being incorporated into mobile handsets and offered as accessories.

Local Connectivity

Handsets

HTC
LG
NEC
Nokia
Pantech Group
Sharp
Sagem
Samsung
ZTE

The ubiquity of mobile handsets will make them the gateway to Mobile TV for most consumers. Handset choice will be a key factor if service adoption is to be widespread. Key challenges for handset manufacturers include maintaining small device size, minimising power consumption and providing a simple, high quality user experience.

Handheld Entertainment

Apple - iPod
Archos - AV700
Creative
iRiver
Nintendo - DS
Pocket Dish
Sony - PSP

Designed specifically to deliver entertainment, these devices can offer a better form factor and higher quality user experience than the mobile handset. Content delivery channels are currently limited to DVB-T, side loading and physical media. However, the Korean market is demonstrating the opportunity for specialist mobile TV devices.

Technology Value Chain

On Device Technology

Receivers/Decoders

A variety of decoding standards exist, which has often forced the handset manufacturer to support only one decoding standard.

Samsung has launched a multi-standard decoder chipset which allows handsets to support leading standards without compromising the size of the hardware.

Graphics

Next generation chipsets from Nvidia & ATI have been able to double screen resolutions to 3 MP, providing better video playback quality.

Manufacturers have also developed 3D accelerated hardware. Supporting the OpenGL standard and full FPU, this aims to bring console like gaming to the mobile.

Antennas

Historically, external antenna modules have been needed in order to deliver Mobile TV to a handset, thus forcing the manufacturer to choose between functionality and aesthetic design.

Recent advancements have provided antenna chips which can be mounted internally on the PCB.

Batteries & Power

Excessive power requirements that drain conventional handset batteries impair the user experience and potentially cannibalise voice revenues by increasing handset downtime. Reductions in chipset power consumption, coupled with developments in battery technologies, potentially supplemented by solar power, will make mobile TV a more viable proposition.

Software

On device software manages the reception and presentation of content on the mobile or handheld device.

Storage

High capacity storage technology opens a number of opportunities for content distribution including on device caching and physical distribution. As mobile device storage capacity increases it also opens the potential to use the handset as a portable PVR.

Delivery Technology

Broadcast Technology

Vendors of silicon, encoding, headend and transmission technologies meeting open and proprietary mobile broadcast standards.

Narrowcasting Technology

Vendors of compression, network and device side technologies enabling the delivery of TV and video content over mobile networks.

Broadcast Standards

Mobile TV Broadcast standards are competing for adoption worldwide. While DVB-H is likely to achieve the broadest geographical adoption, Qualcomm's proprietary MediaFLO is claimed to provide more efficient transmission and local standards are expected to dominate in China and Japan. MBMS supports broadcast over GSM and UMTS networks.

Shipment Forecast Source: Datamonitor

1. DVB-H — Europe, US, S.Africa, AsiaPac — '09 Shipments 90mn; Launched: '06
2. S-DMB — Japan, S.Korea — Launched: '05
3. T-DMB — Germany, France, S.Korea — '09 Shipments 28mn; Launched: '05
4. MediaFLO — Germany, UK, US — '09 Shipments 30mn; Launched: '07
5. STIMI — China — Launched: '07
6. ISDB-T — Japan — '09 Shipments 20mn; Launched: '03
7. MBMS — Under trial & operator evaluation
8. DVB-SH — Europe

July '07: European officials have backed DVB-H as the single standard for Europe. Services should be rolled out "as quickly as possible".

Delivery Value Chain

Broadcast — The most efficient way of delivering a limited range of mainstream scheduled content channels to a wide audience. Dependent upon spectrum allocation, device availability, effective business models and of course customer demand. Services currently live in Italy, Korea, Finland

Over-the-air — Utilising the existing mobile operator network and supporting both "On Portal" and content accessed via the mobile web, this has been adopted for pre-broadcast services. It will remain the best delivery option for VoD and specialist "long tail" content.

Placeshifting — Hauppage TV Anywhere; ORB; Slingbox; INXSTOR Ltd. Delivery of place shifted TV to the mobile device allows the viewer completely flexible access to subscribed to broadcast and cable services. Inclusion of Slingbox access in Three UK's X Series package demonstrates the potential.

Sideloading — Apple - iTunes; Microsoft - Media Player; Zencast. Synchronisation with a PC allows low cost content delivery for later viewing on the move. Customer acceptance is proven for music and inclusion of TV content in services such as iTunes will test consumer appetite for paid for "catch up" TV on the move.

Wi Fi\Femtocell — Archos Content Portal. An alternative to Side loading, allows distribution of narrowcast content without loading the mobile network. Femtocells (in building low power 3G base stations) offer the possibility of low cost, high bandwidth distribution to standard handsets without a dual mode WiFi capability.

Storage — High capacity storage technology opens a number of opportunities for content distribution including on device caching, and physical distribution - where content is preloaded on removable memory such as SD cards or micro drives.

Service Provisioning

Nokia-Siemens Networks
Mobibase
Alcatel-Lucent
Ericsson

Exploiting Interactivity

Advertising

Advertising is expected to be an essential element of the business model to subsidise content and provide additional revenue streams for operators and broadcasters. Mobile TV offers the potential to deliver highly targeted advertising with viewer response and interactivity. Mobile TV will offer opportunities to Internet and mobile ad networks, and technology providers along with more traditional TV players.

Content Discovery

Effective content search and discovery will be a major factor driving usage levels. To be truly effective it will need to take account of the multiple sources of TV and video content that will be available to users. Encompassing search, mobile EPGs and On Device Portals, expect video search specialists such as Blinkx to move in as mobile specific content increases.

Viewer Participation

Participation TV, primarily enabled by SMS, has become a significant revenue stream. Mobile TV naturally lends itself to viewer interaction.

Ericsson/conVISUAL/Communology

Payment & Protection

DRM & Payment

The Dominant DRM standard for Mobile TV is expected to be OMA BCAST/DRM 2.0, although competing proprietary standards include Microsoft Windows Media DRM 10.

Conditional Access

Conditional Access technologies encrypt premium broadcast content and restrict access to authorised subscribers. Leading pay TV vendors are offering Mobile TV versions.

Broadcasters & Operators

Mobile Broadcast Operators

Broadcast transmission operators with mobile TV frequency allocations trialling or operating mobile broadcast services and providing infrastructure and services to operators and broadcasters.

Mobile Network Operators

Mobile operators are offering and trialling both "over the air" and broadcast services to subscribers. For broadcast they have either acquired spectrum or are partnering with mobile broadcast operators. Some such as 3 Italia also act as a channel operator/aggregator.

Broadcasters

Provide content, channel programming and in some cases broadcast spectrum and operations. Broadcasters work alone and in conjunction with mobile operators to deliver services.

Specialist Aggregators

Provide packages of content either direct to consumer or to Mobile Broadcast and Mobile network operators.

ConVISUAL
Hungama
Mobilemspot
Mobitv
ROK
SES Astra
SES Americom

Made for Mobile?

Production houses and content owners are creating "made for mobile content", often using branded properties, to suit the mobile viewing behaviour and form factor. Examples include Fox's "mobisodes" of hit TV show 24. Viewer demand and long term economics of made for mobile content are as yet unproven. Meanwhile a number of companies specialise in repurposing existing content for the 4th Screen.

Content Providers

Production Companies & Channel Operators

Leading TV production houses and channel operators are tailoring programming and mobile channel packages for direct to consumer or distribution via mobile TV operators.

User Generated Content

User generated content has significant potential for mobile TV as demonstrated by 3 UK's successful SeeMeTV channel. The mobile handset is ideally suited to production, uploading and viewing.

Research & Standards

Market Research	Encoding	Screen Technologies & 3D	Power	Industry Bodies
ABI Research, FirstPartner, Informa, IT Europa, M-Metrics, Telephia	Envivio Inc, Grass Valley, Penthera, Radioscape, Tandberg, Vidiator	Cambridge Display Tech, Sony, TI, Universal Display Corp., Upstream	Motorola, Nippon Telegraph, NTT DoCoMo, Philips, Powercast, Telephone Corporation	3GPP, bmcoforum, DVB Org., EMBC, ETSI, Flo Forum, GSM, MEF, Mobile DTV All., OMA, World DMB