



The Mobile TV Reality

Released July 2008

Please Email support@TeleAnalytics.com
for Adobe Illustrator Originals of the Figures in this Report

TeleAnalytics Inc.

94 Cumberland St
Suite 807

Toronto, Ontario,
Canada M5R 1A3

Tel: 416 972 9334

Fax: 416 944 1324

URL: [www.TeleAnalytics .com](http://www.TeleAnalytics.com)

Disclaimer Information contained in this report has been compiled from sources believed to be accurate and reliable. Whilst every effort has been made to ensure accuracy, completeness and reliability, this cannot be guaranteed. It is an expressed condition of this report that no liability be incurred by TeleAnalytics, or any other contributor, as a result of the information or recommendations contained herein being used for investment or any other purpose, either corporate and personal.

TeleAnalytics Copyright: No part of this report may be reproduced in any form, including Photocopying, or distributed by any means, including electronic, without the expressed written permission of TeleAnalytics.



Background to the Report

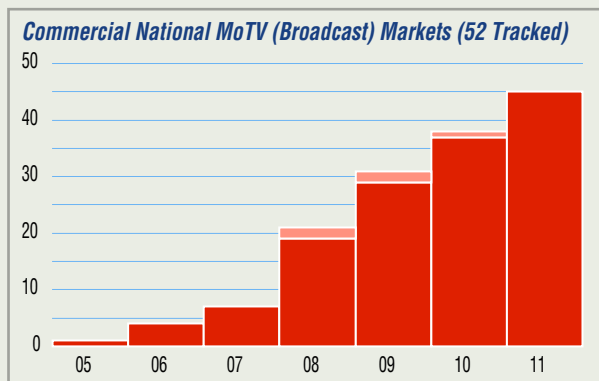
SKT launched its Korean MoTV (Broadcast) offering in May 2005 and if things go according to plan, Denmark will also launch in early 2011 but it will not necessarily be the last country in the developed world to come on line. France and perhaps Germany will also become operational in 2009, joining Italy which went live in mid 2006, but Spain and the UK will likely be left for 2010, if not later. The overall evolution of the number of commercial MoTV markets among the 52 that are currently tracked by TeleAnalytics is shown in the diagram at the bottom of the page.

The lack of spectrum in many major markets is only one of the reasons why developed world MoTV launches are spread over a seven year period and MoTV simply proved to be the Convergence front that is the hardest to manage. Regulatory and business MoTV entanglements that usually last for years became the norm and in the case of Spain, a major vendor estimated that the launch would have happened in early 2006, but now mid 2010 seems to

be a more likely date. The US is today the only major market where all MoTV interested parties were given the opportunity to take their chances with technologies of their liking.

Furthermore, MoTV adoption is highly asymmetrical and in the Austrian market that is just getting started, 3-Hutchinson considers that it would be good if it manages to sell 25K MoTV devices by the end of 2008 (seven months after launch). The oldest European MoTV market, Italy, is currently netting as many as 20,000 new adds per month, while Japan (with just over twice the population) often does 100 times better. Also, to compound the complexity of the MoTV landscape, the technological side of things is possibly as fragmented as things can get and instead of one or two dominant technologies, at least 9 major ones are entrenched, not counting all the Chinese armies (technologies) that participated in the various phases of the Chinese MoTV civil wars.

Understandably, for KDDI which started in 2006 and today moves more than one million MoTV handsets a month and for One-Austria which just started and hopes to be able to sell less than five thousand devices over the same period of time, MoTV is a radically different proposition, not to mention the fact that One-Austria will collect €9 a month for every one of its MoTV subs, while KDDI collects nothing. The trends in MoTV device types used are radically different from market to market as well, reflecting different technological capabilities and operators' choices. Automotive devices account for less than 5% of the devices sold in Japan and even less in the Italian market, but at the end of 2007 they still slightly outnumbered MoTV handsets in the Korean T-DMB network (Q1-08 users: 7.9 M).



In short, if an obvious unifying MoTV principle is sought, it has to be looked for on the Demand and not on the Supply side. The MoTV (Broadcast) mass market potential has by now been proven on a worldwide scale but when and how this mass MoTV demand will be serviced will remain a patchwork even in the early years of the next decade.

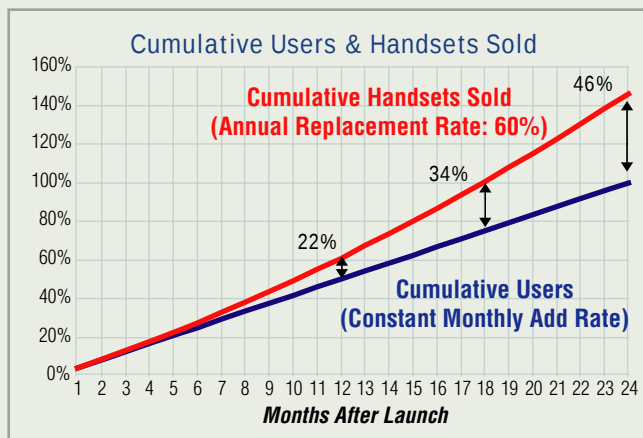
The launches in the developed world which are spread over seven years, the fact that a MoTV technology patchwork was not avoided and the myriad of country-specific conditions that determine the timeline and the potential of a specific market, are understandably reflected upon all the players involved. Some of the players have had both feet in the MoTV business for more than 4-5 years now but some others like the French or the US Broadcasters still have to develop/refine their strategies before they arrive at a launch. On the other hand, ideas that a three year-old commercial reality happening in the 21st Century is too complex to be understood by commoners or that there are no unifying concepts beyond the MoTV patchwork, or even that the underlying complexity is a license for scores of wrong figures/facts/concepts to be put forward, obviously belong to some other darker era.

Scope of the Report

Addressing the market research needs of the diverse and asymmetrical MoTV market is not easy, especially if it is not done in a rush, and if the provision of the tools needed to help make sense out of the MoTV patchwork and the illumination of the unifying concepts behind it are what is targeted. Towards this goal, TeleAnalytics has released more than 1,800 pages of in-depth market research that currently covers 52 national markets, and approximately 400 more pages will be released in the balance of the year. Much of this market research obviously addresses the needs of the ones who are already deeply involved in the MoTV market and who have an ongoing need to understand and track, often on a worldwide basis, both the major MoTV structures and mechanisms but also the nuts and bolts of the diverse MoTV developments all around the world.

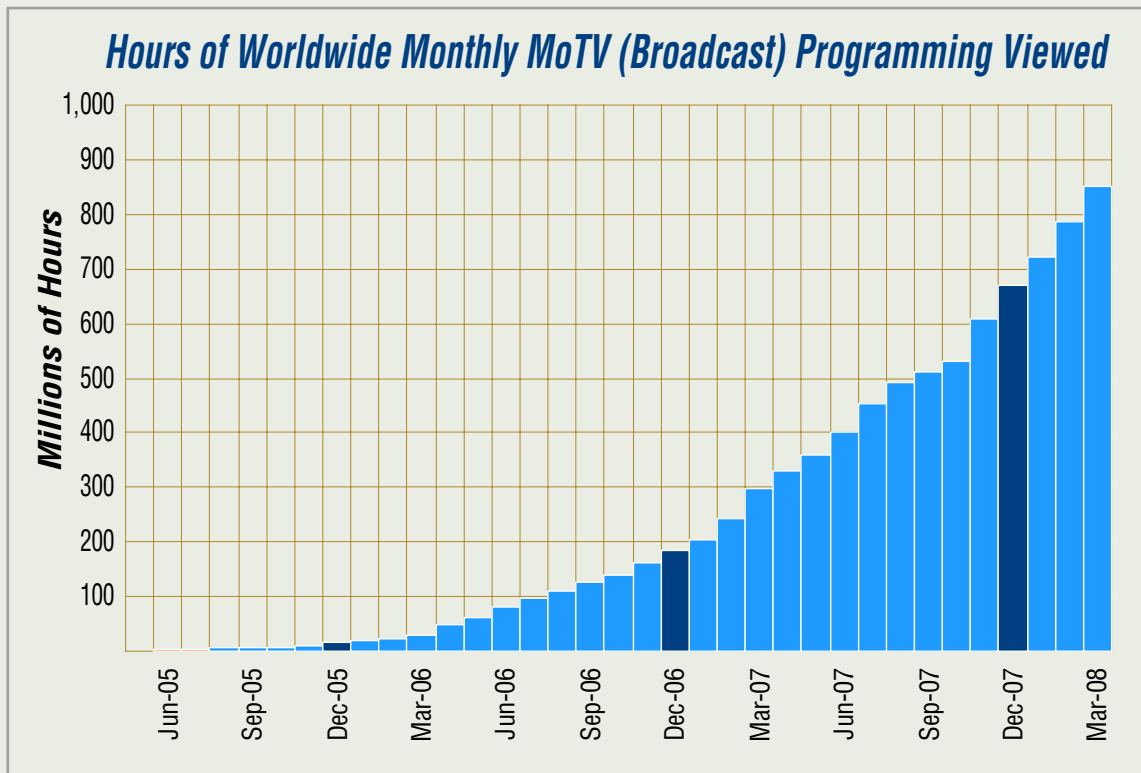
On the other hand, MoTV is affecting or it will affect the business of every major player in the Mobile, TV and Media spaces, and the market research needs of the ones who will become more deeply involved in the MoTV Broadcast business over the next 12 months are obviously at least as important as the needs of the old hands who have already been there for quite a few years now. As a matter of fact, the needs of the ones who are now entering the commercial MoTV Broadcast markets in force are more urgent, since they are the ones that are usually still bombarded with the results of the dozens of 2005-06 MoTV trials, when some of the trials estimated 52% MoTV adoption in the first six months and 70% in a year's time. Needless to say, most of these "results" have been today de facto abandoned by the ones who derived them in the first place and obviously this MoTV Trial-related archeological zeal, instead of looking out towards what happened commercially in 2005-08, is at a minimum not justifiable. The dozens of MoTV trials might as well be left to rest where they lie, in the same way that happened with the 3G trials earlier on in this decade. Obviously, the MoTV Reality is the one that has to be understood, tamed, and hopefully taken to the bank.

The experiences out of today's commercial MoTV networks and a clear understanding of the MoTV principles



are obviously the main bulwarks on which a realistic business planning of recent or future entrants can be based, but apparently unearthing what happens in the MoTV Reality is considerably more difficult than reading an English-language slide deck about the results of this or that MoTV Trial. In other cases, national pride, sloppiness or cheerleading preoccupations greatly distort the MoTV Reality and it is worth noting that the Korean media continue the practice of happily and meaninglessly summing up the FTA T-DMB device sales with the PAY S-DMB subscriber counts, even though both networks are more than 2.5 years old and even though the annual Korean handset replacement rate varies between 55% and 60%. How different MoTV user and MoTV device counts get over time is shown in the side figure.

In another case, a recent MoTV presentation that was made in a major Industry Forum, among other misconceptions, came up with the idea that the Japanese MoTV Daily AVT (Average Viewing Time) may altogether amount to 9 minutes per day. Underestimating AVTs by a few times is not a cheap pastime, since as far as MoTV Ad related revenue goes, it is obviously proportional to the Goods for Sale that exist at any point in time, with the Goods in this case being the total MoTV viewing time per network and not the user counts or devices sold. The correct evolution of the total worldwide number of hours of MoTV (Broadcast) programming watched per month is shown in the figure below, as calculated on the basis of the monthly user counts per network, multiplied by the per network AVT at that point in time. According to some cellular video figures recently released, the total March 2008 MoTV Broadcast viewing time shown below is at least 1,000 times higher than the average monthly viewing time of the MTV (a leading player) cellular videos streamed worldwide in the period between February 2007 and February 2008.



Moving beyond examples about the size of the MoTV nebula, it was considered beneficial that the TeleAnalytics MoTV research (at the street level, in 52 countries) be summarized in a concise, conversational and book-like report, which at the same time stays away from both oversimplification and jargon. Understandably, in such a concise report, no space exists for detailed “proofs” of all the points made, and no space exists for the calculation of the addressable MoTV market in Kenya or Russia either, and therefore a migration path has been built towards the other current TeleAnalytics MoTV publications. The report can potentially be considered as a front end to the ever-expanding TeleAnalytics MoTV research and as such it can also conceivably be used by existing clients but it is mainly released for the benefit of players entering into MoTV over the next 12 months, or for players whose involvement in the MoTV Broadcast space thus far is about to expand.

All historical MoTV data used is as per the quarterly TeleAnalytics MoTV Tracking Service introduced in July 2007, which currently provides monthly MoTV adoption data (on an Air Interface, network, country, device type basis) from the beginning of the MoTV times up until the end of Q1-08. The bulk of the MoTV related forecasts are drawn from the current mainline TeleAnalytics MoTV report, last updated in May 2008.

The October 2008 Update of the Mobile TV Reality Report

The original concept for the Mobile TV Reality report was quantified by the title then chosen: “The track record and future of MoTV in 49 pages”.

The target page count quickly proved to be a bridge that was not far enough. The highly fragmented and badly tortured (and also torturing many) Mobile TV reality that had already resulted in more than 2,000 pages of TeleAnalytics MoTV-related market research could have been squeezed into 50 odd pages, only by providing countless references to TeleAnalytics’ mainline publications. In any event, the original release in July was just short of 120 pages and the October update-expansion brings it close to the limits where the term “concise report” still has some relative meaning left (170 pages and 140 Exhibits). The October 2008 update-expansion makes the report an even better rounded publication, putting all the core facts and experiences related to the more than three year-old MoTV business under the same roof.

Unless a very deep understanding of the 52 countries currently tracked and/or the inherently complex trends in the MoTV equipment markets is sought, the report may well be the only MoTV related analysis that needs to be read. The migration path to the mainline TeleAnalytics MoTV publications can obviously take care of any needs for more detailed analysis.

It goes without saying that the report abides by the theorem-proof-corollary-example paradigm used in all TeleAnalytics publications. The TeleAnalytics MoTV Tracking Service (MoTV adoption and consumption in all commercial networks on a monthly basis from the beginning of the MoTV Times) is one of the bases of the analysis and understandably, there is neither soul searching on what the already proven MoTV theorems are, nor a lack of examples to illustrate them. A key theorem is quoted below in both its TeleAnalytics and Qualcomm versions.

MoTV Adoption Accelerators: *The usual value-for-money axiom in this case translates to first of all to be there (good network quality), to offer a decent product (good image quality) and not to feed everybody a hamburger all the time (number and quality of channels).* TeleAnalytics, July 2006.

...Qualcomm believes picture quality and indoor coverage are among the most critical elements for the wide scale adoption of mobile broadcast TV services. Singaporean MoTV Consultation, January 2008

The October update integrates new weaponry towards the key thesis of the original report, namely that an almost 3.5 year-old reality, happening in the 21st Century over 18 networks in sixteen countries (with just about 52 million users at the end of 2008), can be understood and its key modalities can be abstracted so as to fit at the back of an envelope. The report is of course more extensive and provides analysis and proofs for what would otherwise have made it to the back to the envelope mentioned. The October update rounds things up by bringing in:

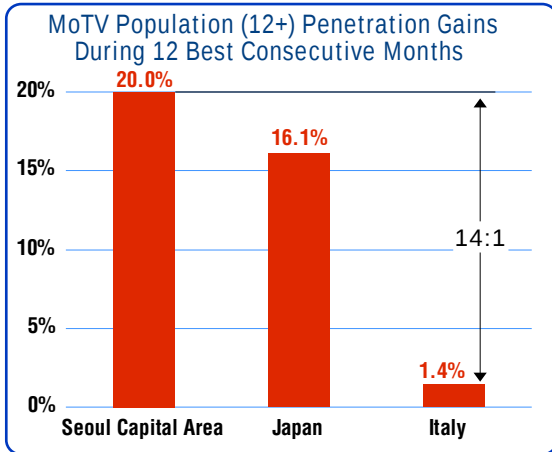
- Adoption data and analysis for the first months of the new European networks (AT, CH, NL). The recent facts witnessed settle quite a number of somewhat open MoTV adoption related questions.

- Monthly MoTV adoption data starting from the beginning of the MoTV Times and covering the period up until the end of Q1-08 or Q2-08.

- A short analysis of the July-August MoTV launches in the major markets of Brazil and China and the new (and as predicted, unavoidable) CMMB orientation (PAY MoTV).

- The high level user revenue part of the updated TeleAnalytics MoTV historical/forecasted data sets. The complete set (in all of its detail and complexity) will appear in the end of October update of the mainline MoTV report.

- A complete analysis of the MoTV Ad revenue generation & FTA sustainability in 8 major markets.



The fate of the thirteen out of fourteen MoTV users that did not make it

In 2006-7, it was common to solely attribute the Japanese and Korean MoTV explosions to the FTA nature of the MoTV offerings in these markets and also to point to the rivers of red ink flowing from Korean MoTV. The finances of Japanese MoTV were healthy from day one but the strictly Anglophone reader is even today more likely to read about Austrian or Kenyan MoTV than about the fact that 32% of the Japanese mobile subs will also be MoTV users by the end of this year, or that the Japanese M-Month (50% MoTV population penetration) is now set for August 2010 or earlier.

Understandably, national pride and vendor hype (or embarrassment) have to be serviced but the fact is that Koreans, with the not-so-deep pockets (about half of the average developed-world pocket depth), are happily spending \$400-600 to buy PMPs and PNDs for an otherwise FTA MoTV offering (T-DMB). An MNO would obviously be happy to collect this kind of money for a PAY MoTV service and to simply plow the cost of the terminal in the handset replacement process.

The report stays away from these terminal oversimplifications that try to explain the developed APAC MoTV explosions and the European MoTV entanglements on the basis of a PAY-FTA dichotomy. Instead, the report analyzes step-by-step the simple reasons why there are performing and non performing MoTV recipes and why thirteen out of the fourteen consumers that made it to Korean MoTV never made it to the Italian MoTV sign-in counters (figure at top of the page).

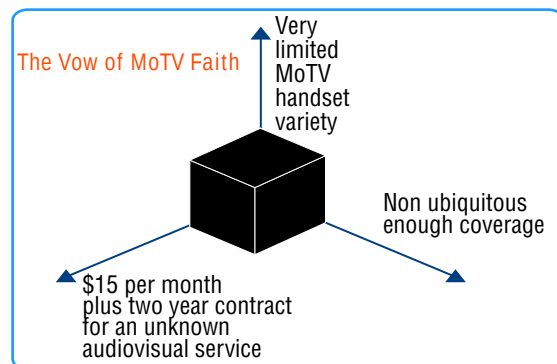
The Relaxation of the MoTV Vow of Faith

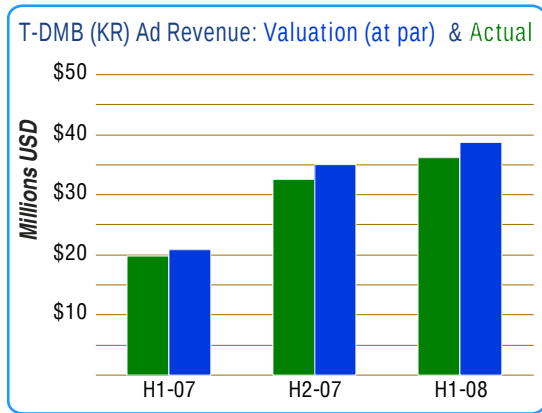
The report uses quite some space to analyze why the PAY MoTV offerings are still struggling to hook a significant percentage of consumers and although quite a lot has to do with ideologies coming from the MoTV Trials (a major trial thought that it measured a 70% propensity to adopt in the first year), other diverse reasons are entering into the picture as well.

With the partial exception of the 3-Italy network, European MoTV suffers from network underinvestment and superstructure deals (content) are not about to make up for the missing infrastructure (rooftop gap fillers). The unhealthy European MoTV environments responsible for this network underinvestment are not about to disappear overnight and the traditional ways that the mobile network solved the chicken-egg problem of handset availability for new services are quite ineffective when the infrastructure needed is largely not there.

As analyzed, a PAY MoTV operator will try to concurrently lower the threshold along all the axes of the "Vow of MoTV Faith" that the consumer is called to take. The by now permanently iconoclastic 3-Italy apparently understands the score and although 3-Italy is one of the two smaller Italian MNOs, it may well have more than 50% of European DVB-H subs even at the end of 2009.

In fall 2008, six DVB-H devices were on offer and the first DVB-H PND (Garmin) was just about to be introduced. As of June, a number of TV channels are offered free of charge to all 3-Italy subs (standard infiltration methods in the early PAY TV days) and Alcatel-Lucent was recently contracted to go after the improvement of the ubiquity of the DVB-H network.





The Valuation of MoTV Advertising and Sustainability of FTA MoTV

Contrary to the flying billions that general-purpose “Mobile Advertising” is promising (not all is hot air though and Japanese Mobile Advertising is coming of age), valuating the MoTV Ad revenue, and as a consequence determining the sustainability of a FTA MoTV offering, is a fairly unimaginative undertaking. Bringing all the TeleAnalytics MoTV Ad revenue related research under a single roof was one of the key reasons for the October update, now that at least part of the MoTV Industry appears to want to get serious about MoTV Ad revenue generation. Some of the points made are summarized below:

- Talking about MoTV Ad revenue, while at the same time treating anything about the MoTV consumption on a network like a “NATO Secret” would not cut it.
- The two-year feet-dragging of the Korean Broadcasters came to an end this August when TNS Media started producing T-DMB ratings. The current ratings collection method can definitely be improved upon and the Korean media can finally learn MoTV arithmetic (they are still summing FTA MoTV devices sold with PAY MoTV subs) but otherwise progress has been made.
- After the Olympics, the Chinese SARFT forgot all of the FTA bravado (in a country of less than \$4 TV Ad spending per Capita), brought in a CA vendor and CMMB is going to be a largely PAY undertaking, with possibly a few channels offered for free.
- In late June, 3-Italy promised the early 2009 introduction of the first real time MoTV Electronic Audience Measurement system (open at least to Advertisers). In August, EXPWAY (a French MoTV vendor) announced the availability of the first “shrink-wrapped” MoTV Audience Measurement Solution.

As remarked back in 2006, tying the MoTV advertising pricing schedule to the number of devices sold (as was originally done by the Korean T-DMB) is not even a crude way of going about seriously trying to realize revenue that after all is simply proportional to the total viewing time realized on a specific MoTV network. Contrary to the subscription MoTV revenue, the maximization of the Ad revenue not only requires the maximization of the number of users but equally importantly the maximization of the Daily Average Viewing Time (AVT). As discussed, in commercial networks the AVT varies between 30 and 70 minutes and its maximization is affected by a number of factors, with network quality being a key one.

How much MoTV Ad revenue can be generated from every minute of viewing time obviously depends on the market and the maturity of the network. In general the revenue per minute can be expected to be below the corresponding Traditional-TV figure at launch time, to fairly quickly rise to a valuation “at par” and then possibly to a significant premium. The figure at the top of the page shows the actual T-DMB Ad Spending along with the “at par” valuation and the textbook quality of the fit shows that things converged where TeleAnalytics predicted they would two years ago. The figure also shows that the various T-DMB pricing schedules are “noisy” and the actual T-DMB Ad spending is defined by the fundamentals involved.

The figure at the bottom of the page breaks down the \$2 billion of US ATSC-M/H Ad revenue figure that has been put forward into the fundamentals applicable to the US TV Ad market. The adoption implied is considered not to be inherently unrealistic but much will depend on the number of TV stations to come online, the number of gap fillers (if any), and the device-distribution deals that will be hammered out.

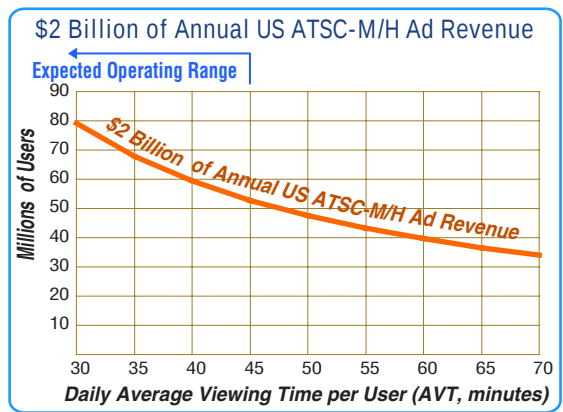


Table Of Contents

0. INTRODUCTION.....	8
0.1. SCOPE & AUDIENCE.....	8
0.2. QUALITATIVE SUMMARY.....	10
0.3. QUANTITATIVE SUMMARY.....	18
0.4. COMMERCIAL MoTV NETWORKS	19
0.4.1. Map of Commercial MoTV Network & the 52 Countries Tracked	19
0.4.2. Commercial MoTV Networks – Network Identity Cards	20
1. CELLULAR (3G) MoTV CAN ONLY TRIGGER A MoTV MASS MARKET – IT CAN NOT CREATE IT	22
1.1. THE FUNDAMENTAL LIMITATIONS OF CELLULAR MoTV.....	23
1.2. MINIMUM VIDEO ACCEPTABILITY NORMS & 3G MoTV.....	24
1.3. CELLULAR MoTV UPTAKE, CHURN AND THE FUTURE OF CELLULAR VIDEO	27
2. CONVERGENCE AND THE TECHNOLOGICAL-BUSINESS FRAGMENTATION OF THE MoTV SPACE.....	30
2.1. CONVERGENCE , CROSS-DOMAIN INVASIONS AND THE EMPTY QUARTER	31
2.2. MNOs-BROADCASTERS & THE REGULATORY-BUSINESS MoTV ENTANGLEMENTS.....	33
2.2.1. The Evolution of the Total Traditional Communications Service and Ad Revenue	33
2.2.2. The MoTV Revenue Expectations & the MoTV Revenue Potential	34
2.2.3. The Distribution of the Digital Dividend, MoTV and the MNOs-Broadcasters Duel.....	35
2.3. THE MoTV TECHNOLOGICAL FRAGMENTATION	37
2.3.1. Full Mobility Terrestrial MoTV Platforms	39
2.3.2. Satellite-Terrestrial (Hybrid) MoTV Platforms.....	40
2.3.3. In-Band MoTV Platforms.....	42
3. THE SUPPLY-DEMAND NATURE OF MoTV & OF MoTV USABILITY.....	46
3.1. MoTV WINDOWS & MoTV NETWORK COVERAGE	47
3.2. TIME USE STATISTICS & MoTV WINDOWS	49
3.3. MoTV AUTOMOTIVE RECEPTION	52
3.4. SPATIAL DISTRIBUTION OF THE MoTV DEMAND: COMMERCIAL NETWORKS & MoTV TRIALS.....	55
3.5. TEMPORAL DISTRIBUTION OF THE MoTV DEMAND: COMMERCIAL NETWORKS & MoTV TRIALS.....	58
3.6. SINGLE MoTV SESSION DISTRIBUTION IN COMMERCIAL NETWORKS.....	59
3.7. MoTV RETRANSMISSIONS & OPTIMAL PROGRAMMING LENGTH	60
4. FROM UNCONSTRAINED MoTV DEMAND TO MoTV SERVICE ADOPTION.....	63

4.1. THE INTERNAL RATE OF RETURN OF THE EUROPEAN MoTV TRIALS.....	65
4.2. THE 14:1 SPREAD BETWEEN UNCONSTRAINED MoTV DEMAND & MoTV SERVICE ADOPTION	66
4.3. MoTV SERVICE ADOPTION: ENABLERS & INHIBITORS	67
4.3.1. MoTV Network Coverage and Quality	68
4.3.1.1. MoTV Population Coverage.....	69
4.3.1.2. MoTV Network Quality & Indoor Coverage.....	70
4.3.1.3. MoTV Network Quality & MoTV Service Persistency.....	71
4.3.2. MoTV Video Quality.....	73
4.3.3. Post MoTV-Trials MoTV Pricing Sensitivity.....	75
4.3.4. Content Quality & MoTV Adoption.....	76
4.4. MoTV INFRASTRUCTURE AND MoTV ADOPTION.....	78
4.4.1. Operator's Relationship to the MoTV Infrastructure and MoTV Adoption	78
4.4.2. The DTT Business Model Extrapolations	79
4.5. MoTV DEVICES-MoTV MARKETING & MoTV ADOPTION	80
4.5.1. MoTV Handset Supply & the Dimensionality of the MoTV Vow of Faith.....	81
4.5.2. The Size of the MoTV Addressable Markets	84
4.5.2.1. Addressable MoTV Market: The Case of Italy.....	86
4.5.2.2. Addressable MoTV Market: The Case of Kenya.....	87
4.5.3. MoTV Handsets & MoTV Adoption.....	89
4.5.4. Plurality of MoTV Device Types & MoTV Adoption.....	91
4.5.4.1. MoTV USB-Laptops.....	92
4.5.4.2. MoTV PMPs – Game Consoles	93
4.5.4.3. PNDs, Embedded Automotive MoTV Terminals & MoTV Adoption	96
5. MoTV ADOPTION, CONSUMPTION & REVENUE IN COMMERCIAL NETWORKS	99
5.1. THE FTA & PAY REPORTING TRADITIONS & THE MoTV TERMINALS REPLACEMENT PROCESS.....	100
5.2. MoTV ADOPTION & DEVICES SOLD IN COMMERCIAL MoTV NETWORKS [Q2-05 TO Q4-08]	102
5.2.1. MoTV Users Country Breakdown [Q2-05/Q4-08] & Med. Term Outlook.....	103
5.2.2. MoTV Users - Technology Market Shares [Q2-05/Q4-08] & Med. Term Outlook.....	104
5.2.3. MoTV Country Pop. Penetrations [Q2-05/Q4-08] & Med. Term Outlook	105
5.2.4. MoTV Devices Sold [Q2-05/Q4-08] & Med. Term Outlook	106
5.3. SNACK TV THEORIES & DAILY AVERAGE VIEWING STATISTICS IN COMMERCIAL NETWORKS	107
5.4. PERSISTENCY OF THE MoTV CONSUMPTION	110
5.5. PAY MoTV, NETWORK CAPEX & REVENUE GENERATION.....	112
5.6. MoTV ADVERTISING & FTA MoTV	114
5.6.1. The MoTV Ad Revenue Generation and Its Enablers.....	116
5.6.2. Market Specifics and Market Invariants of the MoTV Ad Revenue Generation.....	120
5.6.3. Principles of the Universal Valuation of the MoTV Ad Revenue Potential.....	122
5.6.4. Valuation of the MoTV Ad Revenue Potential in 8 Major Markets – FTA Sustainability	123
5.6.5. Implications of the Valuation of the MoTV Ad Rev. in the Three Markets (US, FR, KR).....	126

6. FROM 25.6 MILLION MoTV USERS (2007) TO 201.4 MILLION IN 2011	129
6.1. MoTV MARKETS LAUNCHES 2005-2011	130
6.2. MoTV POPULATIONS COVERED 2005-2008	135
6.3. THE PERSISTENCY OF THE ASYMMETRICAL MoTV ADOPTION.....	136
6.3.1. MoTV Users [2005 -11] - Regional Breakdown.....	138
6.3.2. MoTV Users [2005 -11] - Technology Breakdown.....	139
6.3.3. MoTV Service Revenue [2005 -11] - Regional Breakdown.....	140
6.4. COUNTRY-BY-COUNTRY SUMMARY OF THE MoTV OUTLOOK IN 52 COUNTRIES.....	142
6.4.1. North America.....	142
6.4.2. Latin America.....	145
6.4.3. Western Europe.....	148
6.4.3.1. The Many Challenges of European MoTV.....	149
6.4.3.2. The Country-Specific European MoTV Outlook - WE MoTV User Counts [2005-11].....	153
6.4.4. Eastern Europe.....	156
6.4.5. Developed APAC	158
6.4.6. China.....	160
6.4.7. Rest of the World.....	162
6.5. THE MoTV EQUIPMENT MARKETS.....	166

Table Of Figures

Figure 1 TeleAnalytics MoTV Market Research- Geographical Coverage	19
Figure 2 KR: MoTV (Broadcast) Penetration [2005-08]	23
Figure 3 Number of Simultaneous 3G MoTV Users	24
Figure 4 MoTV Video Acceptability Parameters	25
Figure 5 MoTV Video Acceptability Norms – Handset Reception	25
Figure 6 BT Movio and Radio Data Rates.....	26
Figure 7 KR: T-DMB User Market Share 2007.....	26
Figure 8 The Italian & French MoTV Fundamentals.....	28

Figure 9 Cellular MoTV Acceptability and Churn	28
Figure 10 Convergence & Cross-Domain Invasions.....	32
Figure 11 UK: 2002-06 Communications Services Household Spending (2002 base)	33
Figure 12 Propensity to Adopt – Oxford Trial.....	34
Figure 13 WW PAY MoTV Users – Market	34
Figure 14 Korean TV Ad Spending (2000-07)	35
Figure 15 Worldwide MoTV Subscription Revenue 05-11 (B.).....	35
Figure 16 UK: TV/ Radio Retail Revenue as a Percentage of Telecoms Rev. (2002-06)).....	36
Figure 17 OFCOM - 2006: Simplified flow of funds in the TV industry	36
Figure 18 Developed World and its DTT-MoTV Fragmentation.....	38
Figure 19 MoTV Platforms & Air Interfaces	38
Figure 20 The Mobile Broadcasting Satellites and their Footprints.....	41
Figure 21 The Japanese One Segment MoTV.....	42
Figure 22 Traditional TV Average Ratings	48
Figure 23 Temporal Distribution of One-Seg Viewing (Japan).....	48
Figure 24 Time Use Statistics: Sweden – Men [20-74 years of age]	50
Figure 25 The European MoTV Operating Point	52
Figure 26 Average MoTV Windows Across 15 European Countries	51
Figure 27 First Year T-DMB (KR) Devices Sold	52
Figure 28 Monthly T-DMB PMP-Automotive Device Sales & Car Registrations.....	53
Figure 29 T-DMB Penetration In Passenger Car Owners and Rest of Population (Seoul).....	53
Figure 30 Korea & Japan: Automotive MoTV Device Market Share.....	53
Figure 31 Spatial Distribution of One-Seg Viewing	57
Figure 32 One-Seg Coverage Improvement Wish list.....	57
Figure 33 Korean T-DMB Viewing Places Distribution.....	57
Figure 34 Japan (One-Seg) Single Session Distribution.....	59
Figure 35 Korea (T-DMB) Single Session Distribution	59
Figure 36 One-Seg (JP): Desired Programming Length.....	61
Figure 37 Six & Twelve Month Propensity to Adopt – Oxford MoTV Trial.....	65
Figure 38 Italy: Mediaset Forecasts & Post Mortem Adoption	65
Figure 39 UMD & Best 12 Months Population Penetration Gain	67
Figure 40 The Pipeline from Unconstrained MoTV Demand to MoTV Service Adoption.....	68
Figure 41 Italy: Population (%) Versus City Rank	69
Figure 42 Italy: Italian Municipalities – Pop. Distribution	69
Figure 43 Year of 50% Population Coverage.....	70
Figure 44 Indoor-Outdoor Coverage - Berlin Trial –Vodafone 2005.....	70
Figure 45 Indoor Reception Threshold - Hong Kong Trial 2007	71
Figure 46 Average MoTV Acceptability Versus AV Data Rate.....	74
Figure 47 MoTV Service Appeal Versus Video Quality.....	74
Figure 48 WW MoTV FTA-PAY Market Shares (Users, 2005-08).....	75
Figure 49 MoTV Pricing – July 2008.....	75

Figure 50 Japanese Content Appeal Distribution (Q1-08)	76
Figure 51 Performance of Retransmissions & PAY (Custom) Content.....	77
Figure 52 The Relationship between Content & MoTV Product Quality	77
Figure 53 The SKT (KR) and 3 (IT) MS of the WW PAY MoTV Users	78
Figure 54 3-Italy: WW Market Share in markets outside Korea and Japan.....	83
Figure 55 KDDI(JP): MoTV Handset Availability & Mobile Network Gains.....	81
Figure 56 France: MoTV related Population Counts	85
Figure 57 Argentina: Mobile and Cable Penetrations.....	86
Figure 58 Italy: Prepaid-Postpaid Subscriber Shares (Q1-07).....	87
Figure 59 Italy Prepaid, Average, Postpaid ARPU (Q1-07)	87
Figure 60 3-Italy DVB-H Subscriber Evolution Referenced to Different Universes.....	87
Figure 61 MoTV Handsets- Device Type Share	90
Figure 62 MoTV Laptops-USBs - Worldwide Monthly Market Share.....	92
Figure 63 3-Modeo's View of the US MoTV Device Market (Q1-07).....	93
Figure 64 iPod Sales (mil.)	94
Figure 65 T-DMB (Korea): PMPs-Sold Monthly Market Share	95
Figure 66 The Korean MoTV Vendors	96
Figure 67 German DTT Coverage.....	96
Figure 68 Korea & Japan: Automotive MoTV Users (mil.).....	97
Figure 69 Devices Sold - Active Terminals	100
Figure 70 Cumulative Users & Handsets Sold.....	100
Figure 71 Japanese Handset Replacement.....	100
Figure 72 WW Handset Replacement Rate	100
Figure 73 TeleAnalytics' Unified Analytical MoTV Model	101
Figure 74 MoTV Users Country Breakdown [Q2-05/Q4-08, mil.]	103
Figure 75 MoTV Users - Technology Market Shares [Q2-05/Q4-08, mil]	104
Figure 76 MoTV Country Population Penetrations [Q2-05/Q4-08]	105
Figure 77 MoTV Devices Cumulatively Sold and WW MoTV Users [Q2-05/Q4-08, mil]	106
Figure 78 Japanese Handset Monthly Replacement Rate.....	106
Figure 79 SKT AVT - 2006	107
Figure 80 Evolution of the US MOUs	107
Figure 81 Daily Average Viewing Times Korea, Japan, Italy & the US	108
Figure 82 One-Seg Fixed & Car Reception Areas	108
Figure 83 One-Seg AVT (Japan).....	109
Figure 84 Korean Media-Internet Consumption (Minutes Per User).....	110
Figure 85 GDP Per Capita: Korea and Major MoTV Markets (\$ 000s)	111
Figure 86 [Free + Travel] Time - TV Viewing Time (min.)	111
Figure 87 Greater London TR. Sites.....	113
Figure 88 MoTV Adoption-Quality-Price	114
Figure 89 The Two Poles of MoTV Revenue Generation.....	115
Figure 90 AVT Maximization	117

Figure 91 TV AVT & MoTV AVT.....	118
Figure 92 T-DMB (KR) Advertising Discount Schedule	119
Figure 93 Finland Ad Spending (2007)	120
Figure 94 TV Ad Spending Per Capita Versus GDP Per Capita	121
Figure 95 Korea GDP and TV Ad Spending Per Capita	121
Figure 96 UK GDP and TV Ad Spending Per Capita.....	121
Figure 97 Valuation Range of the MoTV Viewing Minute	122
Figure 98 WW Hours Monthly of MoTV Programming Viewed	123
Figure 99 Ad Spending: Valuation of the Italian MoTV Time (at par)	123
Figure 100 US: MoTV Ad Revenue per Million Users (annual)	125
Figure 101 Valuation of the MoTV Ad Revenue in Eight Major Markets.....	125
Figure 102 Valuation (at par) of the T-DMB (KR) Ad Revenue & Actual	127
Figure 103 \$2 Billion of Annual US ATSC-M/H Ad Revenue	128
Figure 104 Commercial MoTV Networks and Markets	131
Figure 105 MoTV Network Launches 2005-11	132
Figure 106 MoTV Populations Covered (mil.)	135
Figure 107 MoTV Populations Covered & Engaged (mil.)	135
Figure 108 MoTV Populations Covered 2005-08/Regional Breakdown	136
Figure 109 MoTV Populations Covered 2005-08/Technology Breakdown	136
Figure 110 Japanese Market Share of Worldwide MoTV Users [2005-11].....	137
Figure 111 MoTV Users [mi.; 2005-2011 – Regional Breakdown	138
Figure 112 MoTV Users [mil. 2005-2011 – Technology Breakdown	139
Figure 113 MoTV Technologies - Percentage of Users in Export Markets	140
Figure 114 MoTV Subscription Revenue [USD, mil, 2005-2011 – Regional Breakdown	141
Figure 115 DAPAC: MoTV Subscription ARPU [2005-11].....	141
Figure 116 NA MoTV Networks (2 countries)	143
Figure 117 NA: MoTV Users (mil.) [2005-11].....	143
Figure 118 LA MoTV Networks (8 Countries)	146
Figure 119 LA: MoTV Users (mil.) [2005-11]	146
Figure 120 Brazil: ISDB-T Population Coverage - 2008.....	147
Figure 121 WE MoTV Networks (15 Countries)	153
Figure 122 WE: MoTV Users (mil.) [2005-11]	153
Figure 123 EE MoTV Networks (6 Countries).....	157
Figure 124 EE: MoTV Users (mil.) [2005-11].....	157
Figure 125 DAPAC MoTV Networks (7 Countries)	158
Figure 126 DAPAC: MoTV Users (mil.) [2005-11]	158
Figure 127 Chinese TV Households	161
Figure 128 China (CMMB): MoTV Users (mil.) [2005-11].....	162
Figure 129 RoW MoTV Networks (13 Countries).....	163
Figure 130 RoW MoTV Users (mil.) [2005-11].....	163
Figure 131 Korean MoTV Vendors	166

Table Of Tables

Table 1 MoTV Users {mil., 2005-11} – Regional Breakdown 18

Table 2 MoTV Users {mil., 2005-11} – Technology Breakdown 18

Table 3 MoTV Subscription Revenue {mil., 2005-11} – Regional Breakdown..... 18

Table 4 Full Mobility Terrestrial MoTV Platforms..... 39

Table 5 Hybrid MoTV Platforms 40

Table 6 In-Band MoTV Platforms 43

Table 7 Parameters of the MoTV Ad Revenue Valuation..... 125

Table 8 The Swedish Digital Dividend 150