Markets and Strategies for Mobile Broadcast in Finland

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Abstract
Recent developments in digital broadcasting technology and infrastructure, the emergence of DVB-H standard for mobile broadcasting, and the ongoing evolution of advanced mobile handsets have opened the way for digital broadcast services for mobile users. Mobile television and digital radio are the most promising applications but many other services can make use of digital mobile broadcasting technology as well. Based on a research interview round, a literature study, and continuous monitoring of the field, this paper depicts the current situation and suggests a scenario for successful roll-out of mobile television services in Finland. In addition, a selection of success factors for mobile television services is presented.

Keywords: DVB-H, Mobile Broadcast, Mobile Television, Market Analysis, Business Strategy, Finland.

1. Introduction
Finland has a special role in the introduction of mobile broadcasting services and mobile television for two reasons. First, Finland is one of the pioneering countries in the making use of the DVB technology by having established a nationwide DVB-T network and planning to end the analog television transmissions during 2007, among the first countries to do so. Second, as a Finnish company, Nokia has taken mobile television and DVB-H (Digital Video Broadcasting - Handheld) to the core of their product strategy. Being the largest cellular phone manufacturer in the world, Nokia’s influence on technology selections, standardizing processes and the diffusion of new technologies to end-users is significant. These facts may work in favor of creating a successful mobile television market in Finland—among the first ones—but there are also some country-specific issues that may slow down this evolution.

However, the motivation for this kind of study is quite clear: DVB broadcasting technology and mobile phone networks are in wide use in many countries, and the convergence of these technologies in the mobile context seems natural enough [1], [2], [3], [4]. With regard to mobile television, biggest challenges do not lie in the technical solutions but instead in the roles of and relationships between the different companies that participate in creating the business ecosystem.

Fig. 1 Mobile phone as the point of convergence

2. Methodology
The results and findings of this paper have risen from a round of research interviews [5] made in January 2005 in Finland. The interviewed companies were YLE (Broadcasting Company of Finland), Nokia Corporation, Elisa Communications, MTV3, Digital Media Finland, and Ministry of Transport and Communications of Finland. The interviewees, one from each company, represented several viewpoints ranging from R&D to general management. Additional resources such as scientific studies, market reports and white papers have been used in building the interview structure and in interpreting the results.
3. Special Characteristics of the Finnish Mobile television Market

Finland is at the same time an appealing and challenging market with regard to mobile broadcast business. With a good DVB-T coverage, the influence of Nokia and the public positive attitude towards mobile technology, Finland seems to be a good test field for mobile television. Furthermore, the Finnish television viewing habits are rather homogeneous in comparison to many other European countries: the five biggest national television channels get almost 95% of all audience attention [6].

At the same time, Finland’s large geographical area and a relatively small population together decrease the probability of an easy success in launching mobile television services. Mobile reception of DVB-H signals requires a significant number of gap-fillers (additional DVB-H broadcasting stations that fill in the coverage gaps in areas where the existing DVB-T network does not provide strong enough signal for mobile reception), and indoor coverage can in some cases require in-building repeaters. These facts imply investments which are easier to justify in countries where geographically smaller networks can reach bigger audiences.

4. Results

The results and ideas presented in the following subchapters have been distilled from the interview tapes. The interviews were semi-structured, and they took place at a time when a DVB-H test network was already functional in the Helsinki metropolitan area. Majority of the interviewed companies were participating in the test network project, FinnPilot [7].

4.1. Current Plans of Domestic Key Players

Along the interview round, there was almost a unanimous acceptance of mobile television as a feasible service with good probability of success. According to most of the interviewees, there are two main types of content which will be most successful in mobile television networks.

The first type consists of traditional television programs, or a subset that is best suited into the mobile context. This content already has the customer acceptance and good reputation and it can be reused in the existing format. Examples include news, drama series, and music videos. In the FinnPilot field test [7], a joint project of Finnish communications and broadcasting companies, a number of traditional television channels were being broadcasted and received by mobile handsets. In this pilot especially the drama series were experienced to fit into the mobile usage scenarios surprisingly well.

The second type is tailor-made, fast-paced content that is originally aimed at mobile reception. Examples include different kinds of entertainment clips, mobile news channels, video-enhanced chat channels and so forth. These contents have to be specifically produced for mobile television, a feature which will probably reduce their applicability during the initial stages of the mobile television market. For content integrators, or television channels, the production of mobile-specific content requires extra resources, the allocation of which may be difficult to justify as long as a big enough subscriber base has not formed.

Overall, the usage scenarios were said to make very much sense, and the public interest towards mobile television was estimated to be high or very high. These findings are well in accordance with the results from other recent studies, such as the BMCO user survey [8].

However, mobile television was quite interestingly seen as a good thing in general but not as a brilliant opportunity for the individual companies themselves. Despite the very positive basic attitude, most of the companies were only secondarily interested in starting a mobile broadcasting business. Many companies did already have plans for providing mobile broadcast services and wanted to make use of a DVB-H network, but none of the companies felt ready to take an initiative in making network investment decisions. The market uncertainty was still quite high [9].

4.2. New Business Opportunities

Mobile broadcasting builds partly on existing technologies and existing contents but it also offers entirely new business opportunities, also suggested by the Open Mobile Alliance [10], among others. Television in a mobile phone brings up a new audience with a special characteristic (on the move) and new peak hours as people do not have to wait until they come home to start watching television. These business opportunities can be divided as follows, not forgetting that for example current mobile operators can in the future take the role of a broadcaster and vice versa.

4.2.1. New Business for Broadcasters

For broadcasters mobile television offers an enlarged audience, new peak hours and possibilities to reuse existing contents. Commercial television channels can start selling airtime campaigns targeted at mobile audiences, and create new mobile-specific service offerings.

4.2.2. New Business for Mobile Operators

Mobile operators can make use of their ownership of the mobile phone users: operators have (or can easily have) a fully enabled toolset for mobile television
charging solutions. Another suggested benefit for mobile operators was the possibility of increasing cellular data traffic: as mobile phones become increasingly visual devices by the introduction of mobile television, users could take photographs and video clips using their handsets and eg. send them onto a mobile television chat channel. In addition, users could take television screenshots or record programs using their phone, and share these files with their friends.

Another opportunity for mobile operators is the option to start operating an entire mobile television channel. With customer base and charging mechanisms in place, mobile operators could make a jump start, however not avoiding the resource demands of setting up and running a daily stream of television programs.

4.2.3. New Business for Handset Vendors

For mobile handset manufacturers mobile television is a core strategic issue. It seems that the evolution that started with FM radio, color screens and multimedia messages continues via embedded cameras (still and video) towards mobile television reception in mobile handsets.

DMB (Digital Multimedia Broadcasting), a rival to DVB-H [11], has been rather successful in Korea, and being based on DAB networks (Digital Audio Broadcasting), it has similar advantages as DVB-H in many countries: it can reuse existing network infrastructure. However, in the long run DMB is likely to have problems competing with DVB-H due to the much lower bandwidth which practically means lower quality or fewer channels. LG Electronics has already launched a DMB-enabled mobile phone whereas Nokia has its DVB-H terminals in test use. Anyhow, for countries that have already invested in DVB-T infrastructure, DVB-H seems to be a very strong candidate.

For handset vendors the significance of mobile television is highly dependent on the actions of television channels, mobile operators, and broadcast network operators. If these parties will push the services forward and hence create demand for mobile television handsets, mobile television can become a must feature for advanced phones. If realized, this phenomenon could further increase the strength of the few biggest handset vendors because of the sizeable R&D effort required to implement smoothly functioning mobile television handsets—with good usability and low power consumption. Already the current level of expertise required in the technical know-how and manufacturing efficiency seems to be so high that many of the smaller handset manufacturers have struggled to keep up with the competition [12].

Furthermore, the introduction of television functionality into the mobile handset makes the phone even more attractive a point of convergence from the operator point of view. With speech, data, messaging, Internet browsing and television channels integrated into the same handset and the same mobile subscription, the operators could create an innumerable selection of new full-service subscription packages, or bundles [13]. And as the trend shows, mobile operators have an ever increasing influence on which handsets are sold together with their subscriptions. For this reason mobile television can become a very strategic feature for handset vendors—for keeping up with the competition, and helping the decreasing handset prices.

4.3. Mobile Television Success Factors

The interview results related to what are the overall success factors of mobile television were somewhat divided. Some interviewees stressed the importance of free-to-air channels: these channels should be similarly available as they are in the living room. That is, for the case of Finland, they should be available for the price of annual television license already paid by most of the Finnish households. These well-known and popular television channels would then create the critical mass of customer demand for mobile television, and with only limited costs.

Others claimed that the success of mobile television cannot lie solely on existing television channel offerings because of their perceived unsuitability to the mobile context. Instead, providing new high-quality services that would be exclusively available in mobile television would give the whole concept the initial demand boost it needs.

Another factor that works in favor of mobile television is the value increase that mobile television offers to all kinds of direct telecast programs. A big part of the perceived end-user value of direct (live) telecasts comes from the directness itself: the events take place as they are being watched, and all information is real time. Today direct telecasts can reach only limited audiences during working hours, and hence many live broadcasts are repeated during the prime time in the evening when people are at their homes. Mobile television brings direct telecasts wherever the users are, 24 hours a day, and this (perhaps combined with a push-type news message service) opens up new possibilities for commercial television channels and especially for public broadcasting companies (that may have certain duties for example in delivering emergency information to the public).

4.4. Service Pricing

Pricing is a big question mark and a very critical success factor for mobile television subscriptions.
End-users will use mobile television to fill in gaps in their daily schedules: waiting for the bus etc. In these situations mobile television competes with other distractions such as reading a book or listening to radio. In these scenarios mobile television can be an appealing choice but only if it does not inflict significant costs. When asked, the interviewees gave estimates ranging from 5 € to 12 € per month for a reasonable mobile television subscription which would include the existing free-to-air channels and some extra content.

On the other hand, if the pricing was low enough, there would be quite large audiences awaiting the launch of mobile television services. According to the interview results, a logical choice would be to keep subscription prices as low as possible and thus maximize the popularity of mobile television, and subsidize the lower subscription income with probably higher advertising revenue.

4.5. Terminals

Terminal pricing was not seen equally sensitive as the mobile television channel subscription pricing because there is no straightforward comparison to freely available alternatives (as with free-to-air channels) and because terminal prices can be dissipated into the mobile subscription price [13], at least in many countries. In Finland this linking between the terminal cost and a long-lasting mobile subscription is not legal but currently under review.

Some argued that mobile television itself is not as much a means to increase the price of mobile handsets but instead a key technology that provides a long-lasting upgrade path to high-end terminal manufacturers. Mobile television functionality is at first a differentiator that attracts some users, and as TV-phones become more and more popular, they can be gradually improved along a long product evolution path. Different generations of television-enabled phones will be equipped with higher quality screens (brightness, resolution, contrast and power consumption), better user interfaces and improved responsiveness, better battery life and so forth. This may become a big advantage for terminal manufacturers who now are struggling to find ways to make significant enough improvements to mobile phones which are already rather mature and well-shaped for what they are currently used for: speaking and messaging. Even if the basic functionality, design, and production efficiency sometimes seem drained as drivers for differentiation in the fierce mobile terminal competition, mobile television looks as if it could provide a sustained differentiation path for those companies that master the required technologies.

5. Conclusions

Looking at the entire industry, DVB-H and the concept of mobile television seem to provide a promising new platform for both content service business and terminal manufacturers. The problem is that to build customer demand for mobile television handsets, the content services should already be in place, and vice versa. According to the interview results, some kind of a common initiative is needed in order to build sufficient DVB-H network coverage, and to start mobile television broadcasting services. In the current situation no one of the service providers is interested in paying the first-mover costs, educating the users and building the networks.

For the abovementioned reasons the service provision should be started with as small an investment as possible, but also as soon as possible. Acting fast on the service provision side can speed up the terminal manufacturers’ and users’ adoption cycle which in turn works in favor of the service providers by increasing potential audiences.

To achieve the requirement of smaller initial investments on the service provision side, a service launch should be conducted by simulcasting the existing national free-to-air channels using the DVB-H test network that is already in place in the Helsinki metropolitan area. That test network could be transformed into a production-level network with moderate adjustments, and by gradually expanding the network to other large cities a reasonable mobile coverage could be achieved. By transmitting the existing channels in DVB-H mode from all currently operational DVB-T masts, a very large additional coverage could be obtained, however without indoor coverage.

However, there are several issues not at all discussed in this paper that have to be taken into account before ubiquitous mobile television services can become reality. These include conditional access (CA) systems, regulation and frequency policies (country specific), mobile television roaming (not well defined), content licencing issues (for mobile use), and trust models between content owners, broadcasters and handset manufacturers. Despite these challenges the overall situation looks promising, and based on the interviews we are going to see more mobile television service launches also in the Europe in the near future.

References


[5] A round of research interviews carried out in January 2005. Participating companies were Nokia Corporation, Elisa Communications, YLE Broadcasting Company, MTV3, Digital Media Finland and the Ministry of Transport and Telecommunications of Finland.


