

Mobile TV & Digital-Visual Radio in Europe – New challenge & importance for future Devices

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Importance of device for new technology introduction

- At the end it is all about the product which must reflect the contents for Mobile TV or Visual Radio!
- Failures in industry prove lack of devices can stop a technology completely to take off!



Great Potential in Europe for Mobile TV Market

- Europe is not a single market
- Each country has different constellation of parties involved for deploying digital broadcast
- Europe Market: Great place to be present if entrance barriers are identified and approached properly
- Participating in a growing market for Mobile Phones:
 - The total mobile subscription in Europe by the end of December 2007= 753.5 Million.
 - In terms of subscriber base, the largest market in Europe is Russia with a share of 22%. In comparison, Ireland forms the smallest market with approx 0.7% share in 2006.



What is the proposition of the European Commission (EC)?

1. The European Commission estimates that by unifying its member states under one standard, it can establish a single market for mobile TV that could reach some 500 million customers and a market value of nearly \$32 billion by 2011.
2. The European Commission (EC) has added the DVB-H (digital video broadcasting handheld standard) to the European Union (EU) List of Standards, the basis for encouraging a harmonized provision of telecommunications across the EU. (linked with in July 2007 released proposed strategy)
3. 2008 will be a key year for mobile TV adoption in Europe, the EC said, because of the year's prominent sporting events, including the European Football Championship and the Summer Olympic Games.



3 Mobile TV Standards – EC has preference on DVB-H

<p>MediaFLO (own technology by Qualcomm)</p> <p><i>UHF and L-Band (1452-1492 MHz)</i></p> <p style="text-align: center;">Trials</p>	<p>T-DMB (standard body WorldDMB)</p> <p><i>VHF or L-Band (175-230MHz)</i></p> <p style="text-align: center;">Trials Commercial Service</p>	<p>DVB-H (standard body DVB)</p> <p><i>UHF and L-Band (1452-1492 MHz)</i></p> <p style="text-align: center;">Trials Commercial Service</p>
<p>-Qualcomm's got for £8.3m (\$16.4m) a 40MHz chunk of UK L-Band spectrum (1452MHz-1492MHz) which covers entire UK</p> <p>-Strategy to buy spectrum, creating the infrastructure, using as demonstration platform</p> <p>- Similar case with CDMA (gigantic intellectual property business in cellular)</p>	<p>-MFD (license holder of T-DMB in Germany) was forced by media regulators to return, no commercial service in T-DMB</p> <p>- Future usage of the spectrum might be used for Visual Radio</p> <p>- Development in France, Italy and few other DAB countries to integrate in DAB, DMB-Visual Radio with data service</p>	<p>-Italy (2006)</p> <p>-Germany (June 2008)</p> <p>- Suisse (")</p> <p>- Austria (")</p> <p>- The Netherlands (")</p> <p>- France (end of 2008)</p> <p>- etc.</p>

Knowing the License applying Candidates in each country

- who gets the license for the spectrum and which interest do the license holders have?
- How capable is the group of license holders to read and understand other party's interest and combine as such?
- How do they deal with interest conflict?
- How is the risk and investment managed?
- What is the long term plan in respect of Value Chain?
- When will be the service started and what is the coverage plan?
- Clear Planning for indoor and outdoor reception

Only if those factors are fully understood and from the beginning in the product development, the right product can be launched



Requirements to device Manufacturers

- Finding the right partners involved in Digital Broadcasting to start with trials
- Lock-in from the beginning to the business model whenever possible
- Understand from the beginning who is responsible for which part?
- Which model will be deployed? Free-Air TV (still with subscription model free of charge), For Premium content: Pay?
- Which CAS will be chosen, when and which stage?
- In case of DVB-H, which ESG provider?
- Preinvestment for manufacturers greater than from past product development



New role and challenge to Manufacturers

- No simple delivery of products in boxes
- Fully integrated into business model with revenue sharing
- Different distribution channel to look into
- Close link to Broadcasters, Carriers, Content owners, infranetworkers
- Readiness for new ideas to implement if possible
- Time advantage to other device producers by being selected from the start, still measuring pro and contra for innovators
- Following the main stream of the market



Questions to be raised frequently during trial and service

- How to explain to consumer about coverage plan? i.e. works in one city, but not in neighbor city....
- Depending on the business model- whose task and responsibility to take care of each customer's feedback – broadcaster? Carrier? Manufacturer? Content provider?
- Will mobile TV be a real pan-European project?
- Once a product launched in one country, same product sellable to the other?
- Again, what is the value chain in the other country?



Opportunities for non-mobile phone market

- Never too early to step into Convergence Market
- Value Chain – often device manufacturers are not in the loop -> results in lack of variety for devices when service goes live
- Mobile TV does not mean necessarily -> Mobile phones
- Often license holders do not belong to Carriers, but pure content driven groups, therefore a variety of non-telco product is welcome
- Meeting the specification as non-connected device – how to keep it attractive?

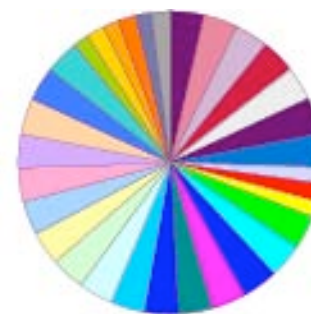


Analogue switch over of TV industry hits Radio Industry to move forward

- From DAB, not quite successful start for most European countries in the past, using DAB+
- Advantage: 3 times more radio channels for same cost/spectrum
- Additional capacity can be used for Broadcasters: EPG, Slideshow, BWS, TPEG, etc.
- DMB allows video options to be added (with screen and multimedia driver)
- Future Radio with BIFS capability chosen by major Radio stations in Europe



**DAB = 8 – 10
Stations**



**DAB+ = 20 to 30
Stations**

DAB+ in Europe and its actual service plan

- **France**
Government has approved Eureka 147
Will roll out DAB multi-media services by end of 2008.
- **Italy**
Italian Broadcasters plan to launch DAB+ in early 2009
Successful trials ongoing. Public Broadcaster has plans for DAB multimedia services
- **Germany**
DAB multimedia has rolled out in all major cities
German broadcasters plan to roll out DAB+ and DAB multimedia digital radio services in early 2009



DAB+ in Europe and its actual service plan

- **The Netherlands**
Government has approved DAB multimedia
Commercial roll out expected early 2009
- **UK**
Commercial rollout of DAB and its multimedia services
Over 7 million devices have been sold
- **Denmark**
Commercial rollout of DAB
Household penetration has now reached more than 17%
- **Switzerland**
Commercial roll out of DAB, DAB+ commercial roll out
expected in 2009 by the commercial broadcasters



DAB+ in Europe and its actual service plan

- **Malta**
DAB+ Commercial Offering set for 2008 (DigiB). Expected 80% Coverage. Local stations as well as foreign content (BBC international, Tropic FM, Calypso Radio, VOA, etc.)
- **Czech Republic**
DAB+ Trials in Pribram (Teleko)- ongoing test since mid 2007
- **Norway**
DAB digital radio has rolled out across the country
There have been DAB multimedia trials



Current DAB+ Devices in Europe

- PURE digital
 - Siesta Clock Radio
 - Chronos Clock Radio
- REVO
 - Blik+
- Trinloc
 - Sinfonie+
- Iriver
 - B20
- Maxscend
 - USB DAB+



Current DVB-H Devices available in Europe

- LG
 - U900, U950, u1000
- Nokia
 - N92, Nokia N77, Nokia N96, Nokia N73
(mit SU-33W Nokia 7710 (mit Antenne))
- Samsung
 - SGH-P910, SGH-P920, SGH-P930, SGH-P940, SGH-F510
- Sagem
 - My Mobile TV
- ONDA
 - N7100



Conclusion

- Finding right alliances and partners locally
- Producing according to a standard guide, is while entering a convergence market impossible to achieve goals and targets
- Prompt feedback and local trials are fundamental
- Variety of product development to use existing or newly established network
- Similar partners and similar infrastructure minimize investment in long term run
- Clear vision and necessary investment in resources for developing right products for Digital Broadcasting in Europe
- Final output will be lasting business



Thank you for your attention!

Please feel free to contact below, if you got any questions or suggestions.

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