

The



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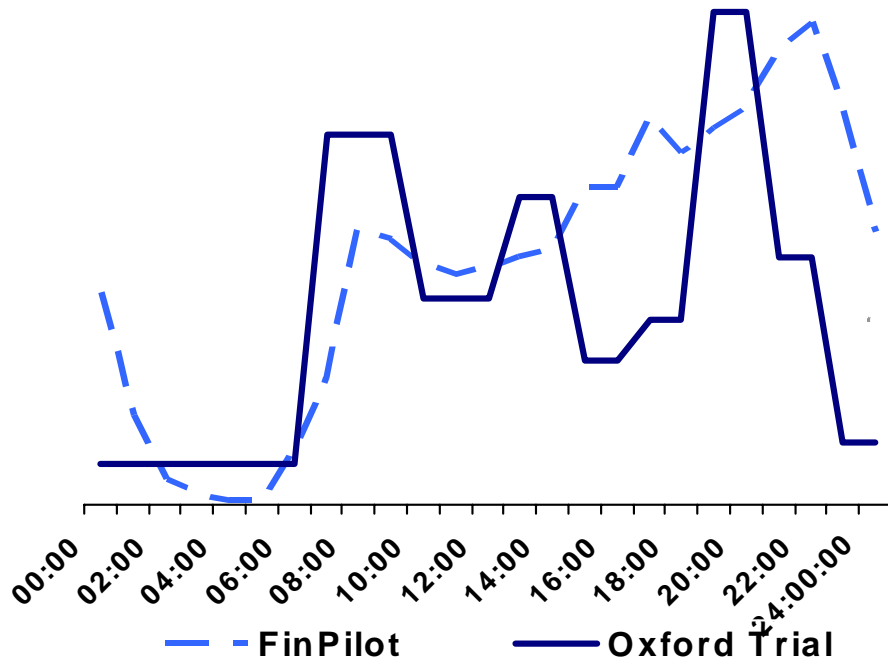
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Experience

DVB-H “Mobile TV”

- “Mobile TV” experiences
- Facts about DVB-H
- DVB-H launches
- DVB-H at 3GSM
- Conclusions

Mobile TV experiences: “Where?” “When?”



- Surprising number of viewers at home
- Disappointing (!) number at work
- Peak is in the evening and before work in the morning
- Usage varies according to demographics
- Finland different to UK

MobileTV Experiences: “What?” “Would you?”

- Patterns follow fixed TV
 - Channel branding important
 - News, Soap Operas, Music, Sports
 - “Made for mobile” content concept needs work
 - Average viewing time in Oxford was >3hours a week (session = 23 mins).
- High percentage (>80%) satisfied with the services and willing to pay
- >70% (Oxford) would subscribe to service within 12 months. Figures slightly less for FinPilot trial

Various ways of delivering MobileTV

- 3G – UMTS MBMS
- T-DMB – Korean variant
- T-DMB – European standardised variant
- S-DMB – not to be confused with T-DMB
- “DAB-IP”
- Qualcomm’s MediaFLO

- DVB-H -

DVB-H Facts

- Developed by DVB Project
 - 270 member organisations
 - 120 million DVB receivers around the world
 - DVB-H standardised in November 2004
 - Service Guide, Purchase & Protection, Content Delivery Protocols, etc. published
- Standards normally lag behind proprietary solutions
- DVB-H was first and provides best synergies between broadcasters & telcos
- DVB's work complete. Services launching

DVB-H Facts

- DVB-H based on DVB-T technology
- Technology designed to enable interoperability between broadcast and telecoms networks
- Promotes convergence between broadcasters and telecommunications operators
- Multi-vendor support from across telecommunications and broadcast industries
- RF performance is very important but it's only half the story
- DVB's work complete. Services launching

DVB-H Services

- DVB-H “Mobile TV” services will be launched in 2006
 - Q3 '06 – Mediaset & TIM in Italy
 - Q3 '06 – Modeo in US
 - Q? '06 – Finnish Govt. issuing licenses in 03/06
- 30+ extensive trials under way worldwide
 - see <http://www.dvb-h.org> for details
- Support from all major vendors and infrastructure providers

DVB-H at 3-GSM

- “DVB-H Guide” with 40 companies
 - we ran out of room!
- First demonstration of recently published “Electronic Service Guide” with comprehensive interactive services
- 3 DVB-H multiplexes on air
 - 1 x T-DMB
 - 1 x Qualcomm’s “MediaFLO”



Conclusions

- MobileTV is now a reality
- There are a variety of way of doing it, each with its merits
- Telecoms sector is better able to absorb multiple standards (technologies) than broadcasting
- DVB-H was the first MobileTV delivery mechanism and has unrivaled industry backing
- 3GSM is a super opportunity to see MobileTV in action

I ♥ DVB[®] H
HANDHELD

<http://www.dvb-h-online.org>

Comparisons

	DVB-H	MediaFlo	T-DMB	S-DMB	ISDB-T
Main Supporter	DVB	Qualcomm	LG, Samsung	SK Telecom	ARIB
Video Coding	H.264	MPEG4 AVC	H.264	H.264	H.264
Audio Coding	MPEG-4 HE AAC	MPEG4 AAC	MPEG-4 BSAC	MPEG-2 AAC + SBR	MPEG-2 AAC
Transport Layer	IP over MPEG TS	3G data packets	MPEG-TS over DAB	Something different to T-DMB - ? MPEG-TS	MPEG-TS
streamed/broadcast	IP streaming	streaming	broadcast	broadcast	broadcast
Modulation Scheme	COFDM 2K, 4K, 8K	COFDM 4K	COFDM 2K, 1K, 0.5K, 0.25K	CDM	COFDM 2K, 4K, 8K
Frequency Spectrum	UHF, L-Band	UHF (6 MHz @ 700 MHz)	VHF, L-Band	2.56 GHz	VHF, UHF
Channel Bandwidth (MHz)	5,6,7,8 MHz	6 MHz	1.5 MHz (DAB channel)	25MHz	413 kHz (1 segment)
Data-rate	2 - 15 MBit/s	3 - 11 Mbit/s	700 kBit/s	?	312 kBit/s
Error Correction	RS & CC & MPE-FEC	Turbo Code	RS & CC	RS & CC	RS & CC
RX pwr consumption	50mW	?	120mW	?	250mW (?)
Start of Services (where?)	2006 (Finland, Italy, US)	Q4 2006	07/05 trials (Korea) 11/05 service (Korea)	04/05 (Korea, 50K rx on 17/06/05)	Q2 2006 (Japan)