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# **STRATEGIC ISSUES FOR BROADCASTING**

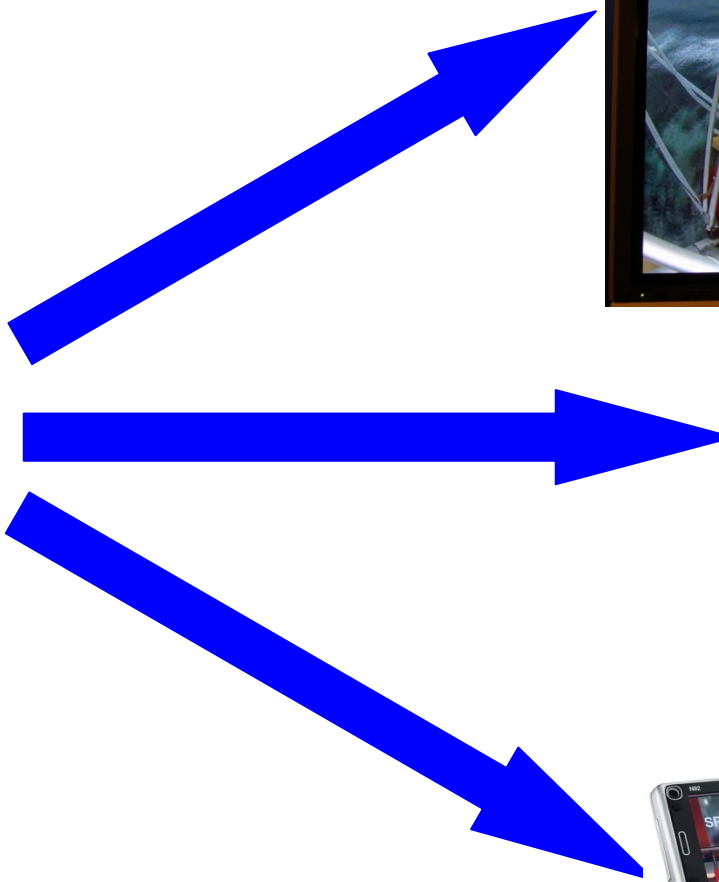
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***DTG Digital TV Summit, London***

***7 March 2008***

# EVOLUTION OF TV

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**HDTV**



**Widescreen  
TV**



**Hand-held device**

# MOBILE TV or HDTV?

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- **Sports enthusiasts will welcome the availability of mobile TV**
- **But, if the sports coverage is available in HDTV on a large flat-panel display, nobody would choose to watch sports on a tiny screen . . .**
- **Mobile TV will be used mainly when users cannot use larger screens (e.g. whilst travelling)**
- **Mobile TV and HDTV will co-exist**
  - **both have clearly defined areas of application**

# **BUSINESS CASE FOR MOBILE TV**

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- **Mobile TV will be attractive to consumers**
  - **people would like to be able to watch TV on their mobile phones**
  - **but how much will they pay for such services?**
- **The operators of mobile TV services must:**
  - **build extensive transmitter networks providing reliable indoor coverage (difficult & expensive)**
  - **obtain the rights to attractive content**
- **Will the income from subscribers cover the costs of the networks and the costs of programming?**

# BUSINESS CASE FOR HDTV

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- **Consumers are already buying HD-ready displays**
  - **BEFORE** any HDTV content is available
  - never happened with any other technology!
- **But the business case for HDTV is not obvious**
  - will it attract larger audiences? **NO**
  - will it increase income from commercials? **NO**
- **HDTV is inevitable**
  - just like colour TV replaced black & white TV
- **Broadcasters cannot ignore HDTV**
  - even if it is expensive to launch HDTV services

# HDTV



# HDTV FORMATS

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- All three formats give similar quality in the uncompressed domain: all are “HDTV”
- When the signals are compressed, 1080i gives worse picture quality than 1080p and 720p
- Broadcasters using 1080i must use higher data rates to achieve the same quality
  - wasting money on transmission costs
  - wasting spectrum
- 720p is very attractive for emission
- 1080p is attractive for production and emission
- Avoid interlaced signals . . . .

# A SIMPLE MESSAGE



# LONGEVITY OF TECHNICAL STANDARDS

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- **Broadcasting technologies survive for a long time**
  - 80+ years for AM radio
  - 50+ years for FM radio
  - 40 years for PAL colour TV
- **Digital technologies will have a lifespan of 20 years or less**
  - 2012 is just the first “digital switchover”
  - DVB-T will be replaced by better technologies, such as DVB-T2, MPEG-4 AVC, HDTV
  - DVB-H will be replaced by DVB-H2, DVB-H3 . . .

**Major impetus for switchover is spectrum efficiency**

# WHO BENEFITS & WHO PAYS?

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- Changing to new technologies offers benefits to:
    - consumer electronics manufacturers
    - network operators
    - broadcasters
    - spectrum regulators
      - other users of spectrum
    - consumers
  - Broadcasters pay heavily for each switchover
    - but consumers pay very much more
  - Can we find novel ways of funding switchovers?
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- The diagram illustrates the flow of payments between broadcasters and consumers. It features two horizontal arrows pointing left, one above the other. The top arrow is labeled with a pound sign (£) at its tail, indicating payment from broadcasters to consumers. The bottom arrow is also labeled with a pound sign (£) at its tail, indicating payment from consumers to broadcasters. A curved, double-headed arrow connects the two horizontal arrows, suggesting a reciprocal relationship or a cycle of payments.

# INTERFERENCE . . .

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- Interference to analogue TV typically appears as patterning (easily identified as “interference”)
- Interference to digital TV means that your picture freezes or goes “blocky”



- Download the video *“Where’s my picture gone?”* from [www.ebu.ch](http://www.ebu.ch) by clicking on



# INTERFERENCE

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- **Mobile phone operators (& EC) have accepted that interference to digital TV is a real problem**
- **Suggestion that “cognitive radios” should operate within UHF TV bands**
  - **cognitive radios find “unused” spectrum and then adjust their transmission parameters to avoid causing interference to other users**
  - **technically much more difficult than it seems**
  - **beware that politicians like “miracle cures”**

# SPECTRUM POLICY

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- Some EC officials and regulators still favour spectrum auctions
- An economic study of effects of market-based mechanisms for spectrum allocation was commissioned jointly by EBU Members & by major commercial broadcasters across Europe
- Download the study (by Oliver & Ohlbaum and DotEcon) and other documents from [www.ebu.ch](http://www.ebu.ch) by clicking on



## 7 MAIN FINDINGS . . . .

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- **Sound economic reasons why markets are likely to fail when applied to UHF spectrum**
- **High public value from broadcasting on terrestrial**
- **Threat to investment in high-quality original European programming**
- **Poor substitutability of terrestrial broadcasting services**
- **The mobile “myth”**
- **Rural Broadband not the most viable use of UHF**
- **National markets require a different approach**

**“Effects of a Market-based Approach to UHF Spectrum Management and the Impact on Broadcasting”  
Oliver & Ohlbaum and DotEcon, 27 February 2008**

# CONCLUSIONS

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- **The next digital switchover will be about HDTV**
  - **new methods of funding of switchovers?**
- **Do not ignore HDTV**
  - **HDTV is inevitable**
  - **expensive transition for broadcasters, but this is simply the cost of staying in business**
- **Political pressure for efficient use of spectrum**
  - **free-to-air digital terrestrial TV is important**
  - **market-based mechanisms for spectrum allocation do not give optimal results**
  - **interference to digital TV is not a trivial problem**