

PHILIPS



Market trends caused by digitalization

Theo Peek

**Chief Technology Officer Philips Business Electronics
Chairman of the European Project for Digital Video
Broadcasting**

Let's make things better.



PHILIPS

Presentation outline

- Digital technology and television
- Standardization in Europe and USA
- Convergence of gateways
- Convergence of applications
- Philips position in digital TV
- Conclusions

Digital Technology

- Started in telephony and computer
- Followed by digital audio Compact Disc
- Next was broadcast contribution and recording
- Breakthrough early 90's:
digital video compression
- Made possible by computer and semiconductor industries
- May cause landslide changes in broadcast industry

Digital Television Broadcasting

- **Driver: sharp decrease of transmission cost on satellite**
- **Short payback time**
- **New industry in USA: Direct-To-Home Satellite Broadcasting**
- **Early adopters in Europe and ROW: pay-TV operators**
- **Emerging new consumer electronics device: digital STB**

Standardization in Europe

- Failure of HDTV caused initiative for standardization in 1991
- European Launching Group for Digital Video Broadcasting
- Participation of total value chain
- Start of the European DVB Project in 1993
- 220 members now from:
 - content providers
 - network operators
 - industry
 - governments

Let's make things better.



PHILIPS

Standardization in Europe (cont'd)

- Unprecedented success due to:
 - world standard for compression
 - market drive
 - participation of standards bodies and EU
 - decisions by consensus
- Standards adopted for:
 - satellite, cable, terrestrial transmission
 - scrambling and service information
 - all possible return channels
- Present standards issue:
 - harmonized receivers through standardized API's**

Let's make things better.



PHILIPS

Standardization in the USA

- Proprietary standard for early satellite DTH
- Adoption of DVB standards for new satellites
- Proprietary cable standards partly implemented
- Mandatory standard ATSC for terrestrial digital broadcasting
- Focus on High Definition Television
- Strong involvement of PC industry and Telco's

Convergence of gateways to the home

- All gateways (cable, satellite, terrestrial, telecom) can deliver all types of content
- Traditional separate technologies start to compete (e.g. ADSL vs. Cable)
- Virtually unlimited throughput capability for all gateways
- Rapid cost decrease of receivers (STB's, cable modems, wireless appliances)
- Personal Video Recording creates virtual reality

Let's make things better.



PHILIPS

Convergence of applications

- Traditional broadcast and Internet will merge
- Interactivity on all delivery media
- Fierce competition for eyeballs
- The PC vs. TV issue
- No “killer applications” yet

Let's make things better.



PHILIPS

Philips position in digital TV

- Is co-founder of standards groups in Europe and USA
- Started digital TV business in parallel with standards efforts
- Is major owner of essential IPR
- Belongs to top 2 in digital STB's world-wide and leading in Europe and Asia Pacific
- Is major end-to-end system supplier

Let's make things better.



PHILIPS

Conclusions

- **Involvement in standard setting essential for time-to-market**
- **Early presence leads to sizeable market positions**
- **Coping with paradigm shifts is only possible for those who are in the battle field**