Switching to Digital Television

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1. Outline

- The technology
- The two big political decisions
  (a) starting digital terrestrial TV
  (b) switching fully to digital
- The early history
- The UK route to digital switchover
- The US and Japanese routes
- Elsewhere in Europe
- Market-specific factors and general principles
2. Digital TV will happen anyway

- More channels
- More targeted services
- Option of high definition
- Move to widescreen
- Robust quality
- Interactive features
- Convergence with other digital media: Broadband
3. Satellite & cable transmission

- Digital satellite
- International phenomenon
- Wide coverage simply
- Pay TV
- Targeted regional reception
- Proprietary systems?
- Digital cable: urban only?
- Two-way TV & ‘Triple Play’
4. Why start digital terrestrial?

- Limited capacity
- One-way
- Lots of transmitters
- Why bother?
- Portable reception
- Local programmes
- National regulation
- Long-term substitute for analogue TV
5. Why switch off analogue?

- Spectrum saving
- Insufficient spectrum for analogue/digital coexistence (contrast AM/FM radio)
- Make new digital terrestrial services near-universal
- Other possible reuse: e.g. local, terrestrial HD, mobile TV, wireless broadband?
6. The early history

- Analogue HDTV in Japan
- Japanese consumer electronics domination
- USA: spectrum rivalry
- The digital breakthrough
- Europe and MAC
- UK satellite wars
- Return match on home ground
7. UK route to digital switchover

- Spectrum for terrestrial incumbents
- Widescreen simulcasts & new services
- Three further multiplexes
- Ondigital & ITV Digital
- **Freeview**
- The UK Digital TV Project
- Timetable, Digital UK & targeted assistance
- Role of the licence fee
8. The United States

- High definition spectrum for terrestrial incumbents
- Switchover target of 2006
- Slow start, low take-up
- Spectrum auction revenue
- Regulating TV receivers
- 9/11 and public safety
- Hard date of February 2009
- Role of satellite and cable
9. Japan

- From analogue to digital high definition
- Dominant role of terrestrial television
- Spectrum efficiency and mobile communications
- Switchover July 24th 2011
- 2003-2006 roll-out of digital terrestrial
- HD & mobile reception
10. European experience

- Role of the EU & national governments
- Market for new standard definition channels
- Germany: dominance of satellite and cable, first switch-off in Berlin, end 2007 target
- Spain: *Quiero* crisis and 2005 re-launch
- Italy: subsidised receivers
- France: later start in digital terrestrial
- Sweden & Finland planned switchovers
11. Market-specific factors

- History of BBC, ITV & BSB
- Satellite failure in the UK
- Undeveloped multi-channel TV in UK & Europe
- HDTV
- Strength of satellite and cable
- Strong position of the BBC and licence fee funding in the UK
- Market size
12. General principles

- No country has decided to ‘skip’ digital terrestrial
- No country has adopted digital terrestrial without analogue switch-off goal
- Switchover requires allocating spectrum to existing broadcasters
- Digital terrestrial pay TV is risky commercially where satellite is strong
- Public policy has to work with the market
13. Convergence

- Convergence of broadcasting, computers and telecommunications
- Broadband, IPTV, video-on-demand
- Mobile telephones and TV services
- Link to the Internet
- Importance of spectrum as a resource
14. The next wave of countries

- The Americas, Asia, Australasia and Europe
- Avoiding the pitfalls found by the first pioneers
- An integrated process from switch-on to switch-off
- National market factors
- Public policy: spectrum allocation, public funding, broadcaster regulation, receivers, role of subsidy