



The Future of Digital Radio

IBC 2010

EBU Technology & Development

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- Radio is popular

- UK: 46.5 million adults listening weekly, 90.6% UK population (15+)
- An all time high !

- Digital listening share: 15.8% DAB, 4.1% DTT, 2.9% Internet

Source: rajar.co.uk, Q2 2010 figures



Digital Radio, a new technology?

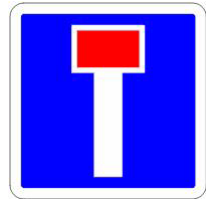


Digital Radio generations



- 1st generation (1990-)

- Context: Audio migration from analogue to digital
- Simulcast of AM/FM programmes on digital
- Audio quality as the only added value





Digital Radio generations



- 2nd generation (2000-)
 - New and exclusive audio content on digital
 - Strategy with broadcasters, governments, retailers
 - Growing success in some countries
 - Inaction or rejection in other countries





Digital Radio generations



- 3rd generation (now)

- Context: Internet and Smartphones disruption
- Broadcast? Broadband Internet? On demand?
Rich media content associated to audio?





Delivery platforms



• Terrestrial Broadcast

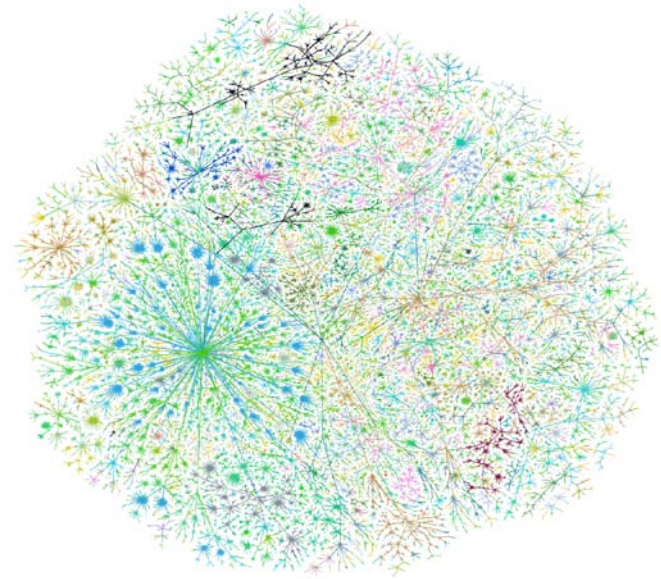
- Efficient one-to-many delivery
- Direct access to listeners
- Horizontal market
- **Free-to-air**
- Broadcasting is green
- Spectrum is available
- Strict regulation





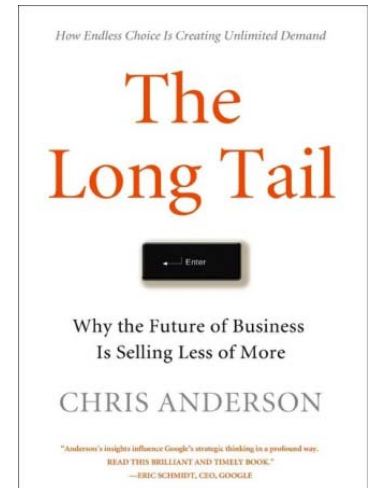
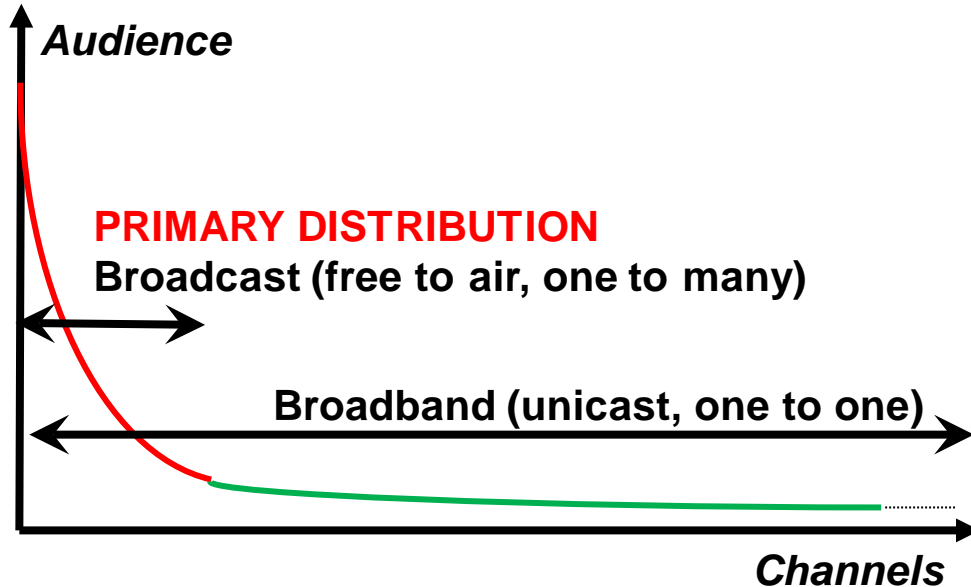
• Broadband

- High flexibility
- Worldwide coverage
- Inefficient for mass delivery
- Democratised delivery (no license needed)
- Subscription needed for reception (not free-to-air)
- Net/operator neutrality questions – quality of service



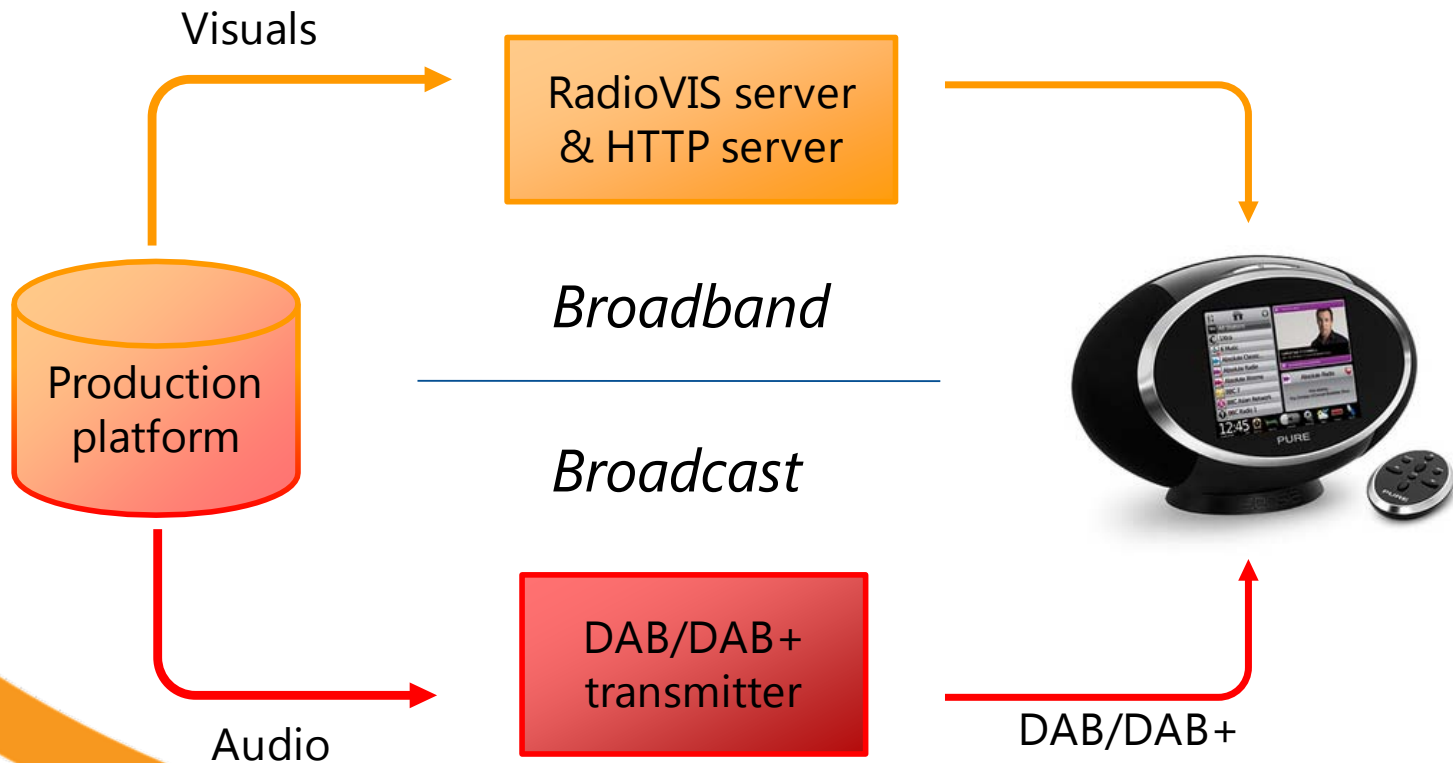


The Hybrid Broadcast/Broadband Approach





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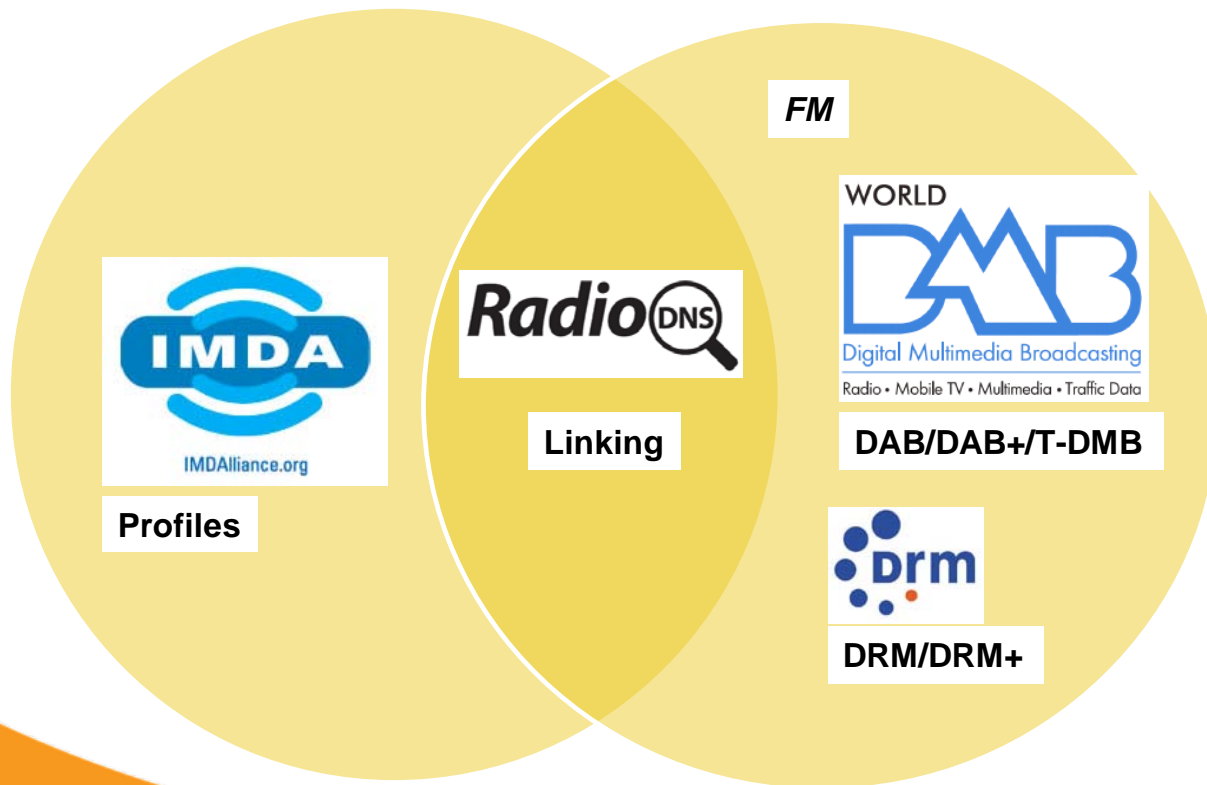
- Multimedia content push to listeners
 - Visualisation
 - Programme guide
 - Podcasts
 - Service following
 - Interaction: tagging, voting



Broadcast and Broadband radio standards

Broadband (Internet)

Broadcast





Digital Radio Broadcasting gets democratised



• Software defined radio

- CRC MMBTools: DAB/DAB+ (open source)
- Spark: DRM/DRM+
- Gnuradio/CRC: FM Stereo RDS (open)
- USRP, generic RF transmission peripheral
- Amplifier and mask filter
- Total: less than €5,000

(WE ARE NOT SELLING A SOLUTION!)

Experimentation, local broadcasting trials,
innovation



Future of receivers?





• Standard radio receiver profile

- The “daddy’s radio” as we know it
- Simple text screen
- Low cost





• Rich media receiver profile


- Colour screen
- Interactive controls
- Very often with Internet connection (wifi, 3G)
- Integration in multimedia devices
- Hardware tends to become generic (micro PC platforms)
- Possibility to create applications





• Broadcast hotspot

- A solution for “tuner-less” multimedia devices
- SmarTV (by ArgoOne)
- CRC Openmokast (open source)



Free-to-air
broadcast
signals



Wifi/Bluetooth
relaying





Confusion about the systems?



Provide a unified view on radio





The future of Radio is Hybrid and Multiplatform





Content is the key

- **Broadcasters: be creative**
 - Create compelling programmes and associated content
 - “Produce once, distribute to many”
 - Branding and visualisation experience
 - Temporary or event radio stations

- Don't lose the opportunity, The Digital Radio clock is ticking !
(for spectrum, industry, etc)



EBU TECHNICAL
MEDIA TECHNOLOGY & INNOVATION

- **EBU supports you**
 - Active representation in industry forums
 - Information, exchange of experience
 - Publications
 - Demo, Open source tools

Your participation is essential



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