



The Technology Partnership plc



**IET Cambridge 2006 seminar
Mobile TV – Evolution or Revolution?**

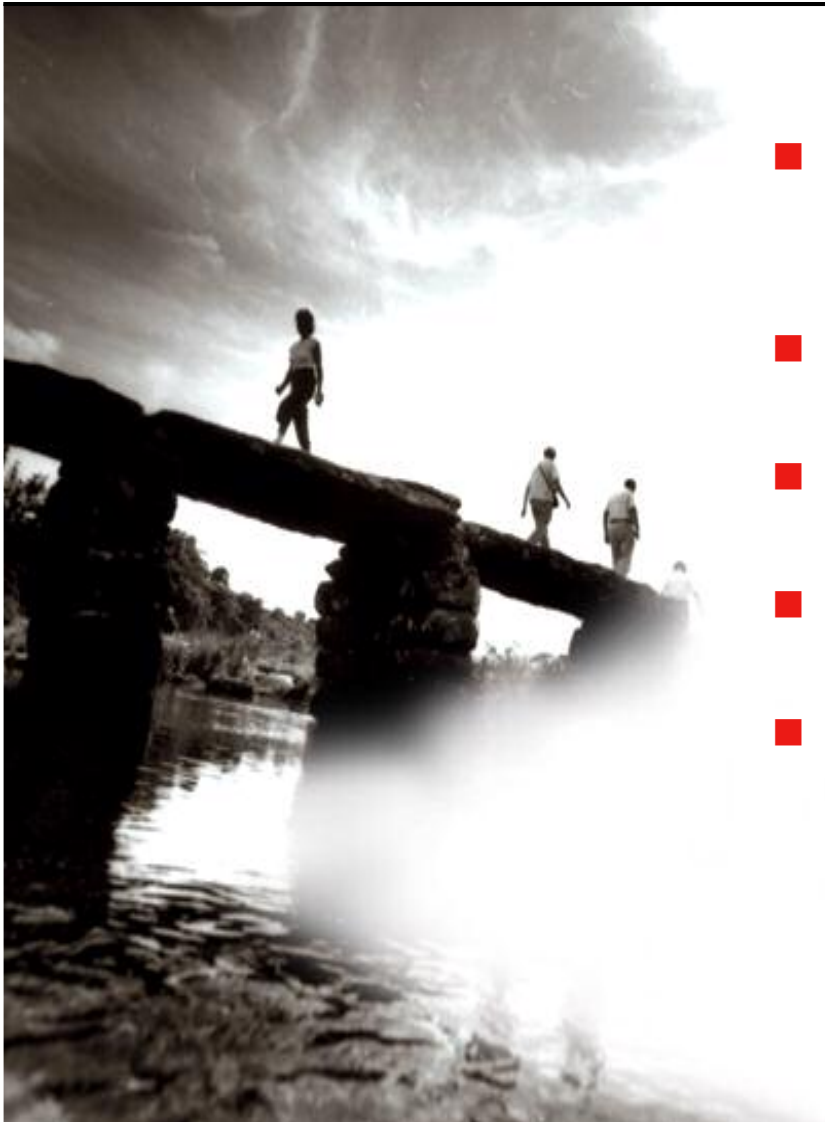
The challenge of delivering content to
mobile devices

7th December 2006

Mathew Palmer



TTP - The Technology Partnership plc

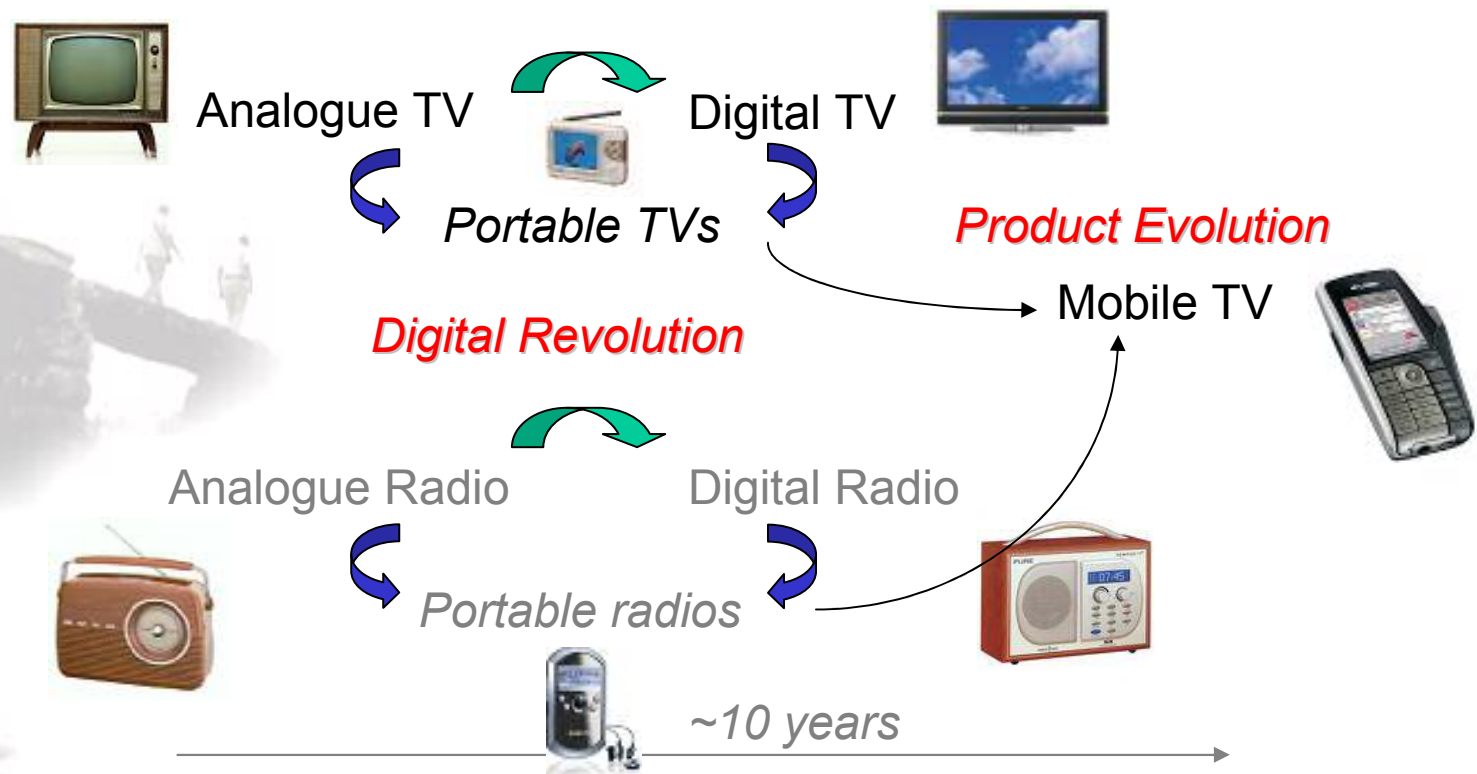


- Leading intellectual property and technology services company
- Technology and product development
- Licensing and Contract models
- In DAB since 1998, Mobile TV since 2003
- Played key role in the development of the BT Movio mobile TV service launched by Virgin Mobile
 - Receiver hardware and software
 - Consultancy



Mobile TV – Evolution or Revolution?

■ Technology Perspective



Mobile TV – Evolution or Revolution?

■ Content and Consumption Perspective

Then

Restricted

Linear

Family

Collective

Fixed

Anonymous

Trusted content



Now

For all

On-demand

Individual

Personal

Mobile

Interactive

Any content (incl. user)



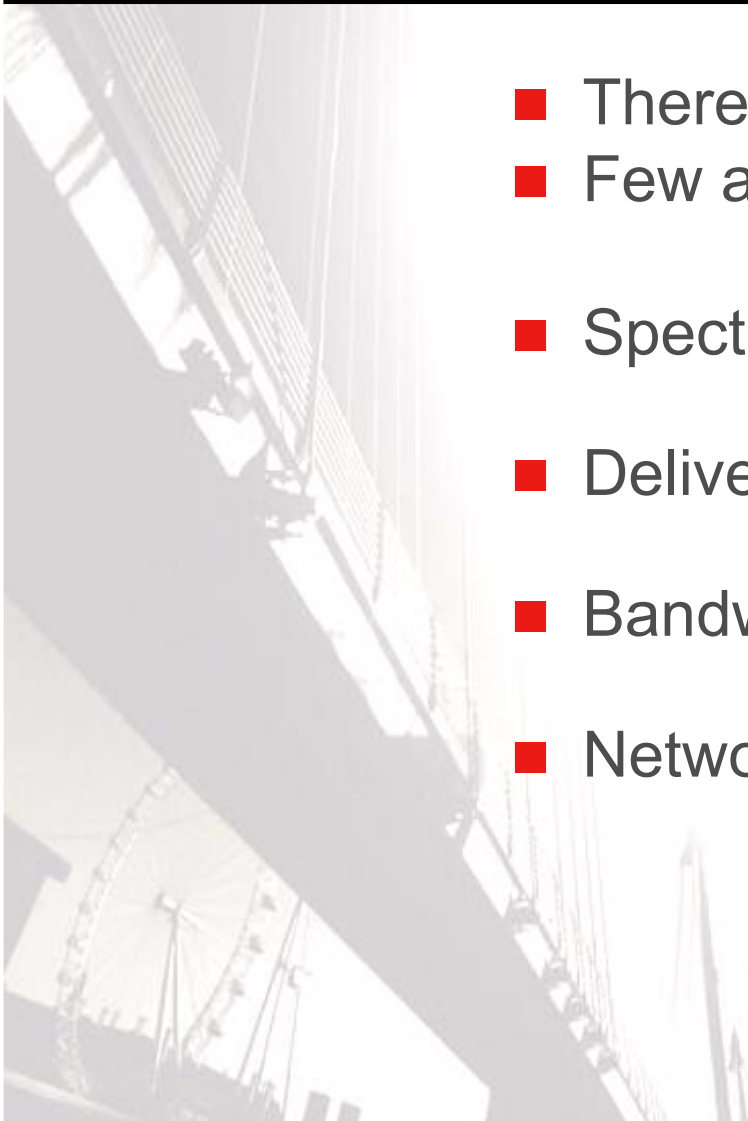
Consumption Revolution





The challenge(s) of delivering content to mobile devices

- There are many
- Few are purely technical...
- Spectrum availability
- Delivery Technologies and Standards
- Bandwidth cost and use
- Network type and coverage

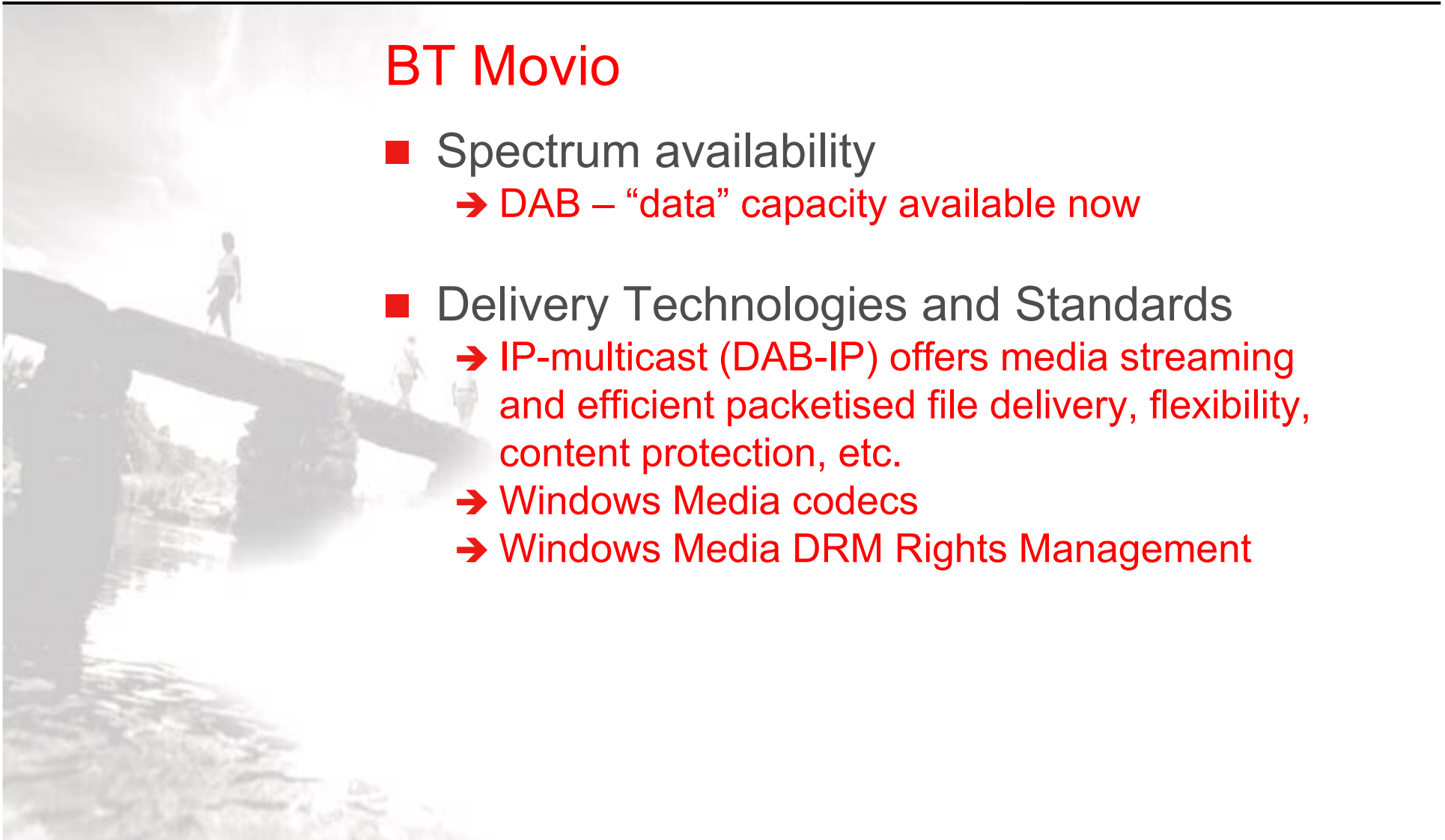




The challenge(s) of delivering content to mobile devices

BT Movio

- Spectrum availability
 - DAB – “data” capacity available now
- Delivery Technologies and Standards
 - IP-multicast (DAB-IP) offers media streaming and efficient packetised file delivery, flexibility, content protection, etc.
 - Windows Media codecs
 - Windows Media DRM Rights Management



The challenge(s) of delivering content to mobile devices

BT Movio

- Bandwidth cost and use
 - Regulatory restrictions on use of DAB for “data”
 - 5 TV channels
 - Plus all DAB radio stations
- Network type and coverage
 - Existing National DAB SFN
 - Good UK population coverage





The challenge(s) of delivering content to mobile devices

- Types of content
 - Item type and duration

- Types of service – flexibility
 - Compatibility with wider service offerings
 - Future-proofing

- Ease of use
 - User experience of service, receiver and UI
 - Receiver specification – display size, quality

- Receiver supply
 - Availability
 - Commitment of suppliers





The challenge of delivering content to mobile devices - receivers



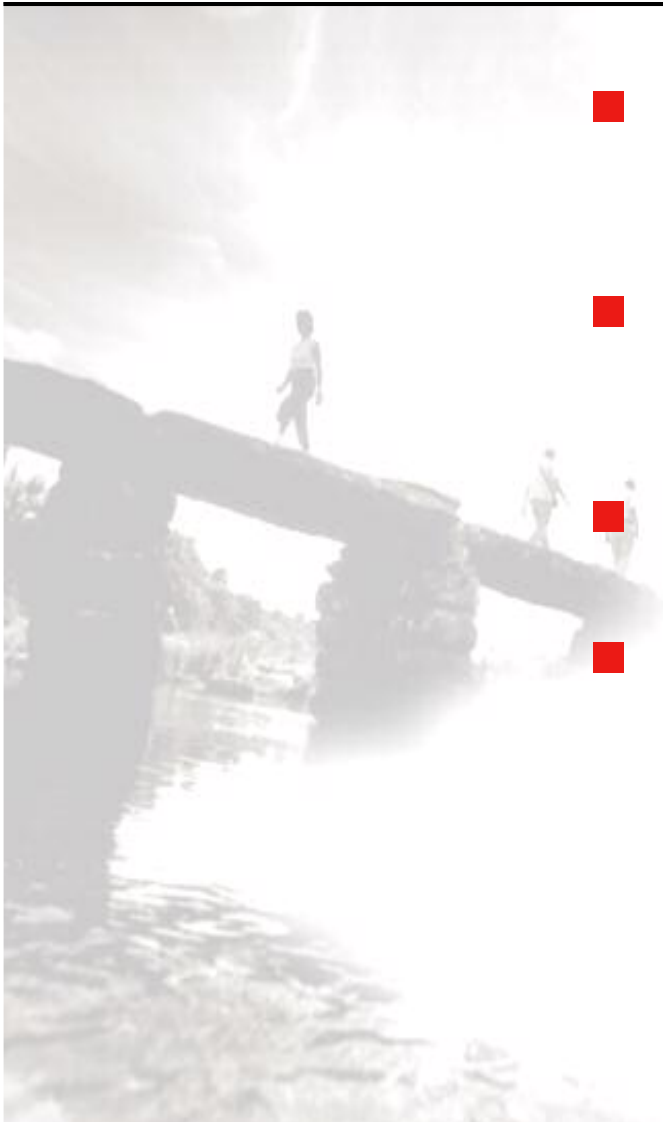
Virgin Mobile Lobster TV Phone

- Smartphone platform
- Microsoft Windows Mobile OS
- GPRS, Bluetooth, QVGA
- DAB Receiver Module
- Windows Mobile Application for Mobile TV
 - ➔ EPG
 - ➔ Digital Rights Management
 - ➔ Mobile TV UI



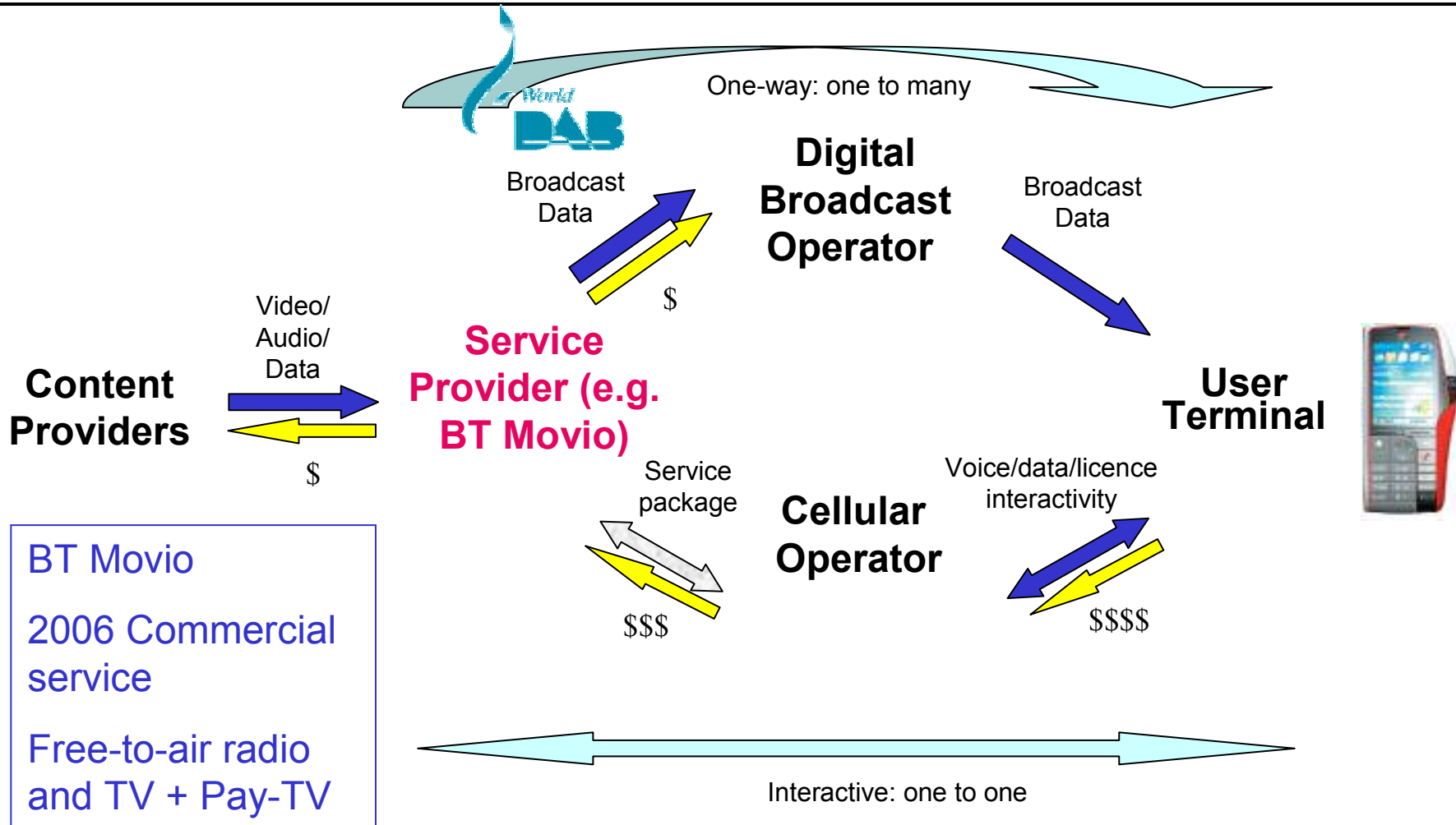
The challenge(s) of delivering content to mobile devices

- Content Rights
 - Artist, studio
- Content Protection
 - FTA, DRM, CA
- End-to-end system design
- “Monetisation”
 - Advertising
 - Subscription
 - Pay-per-view
 - Pay for no ads, discount for receiving ads
 - Network Operator participation





The challenge of delivering content to mobile devices – commercial model



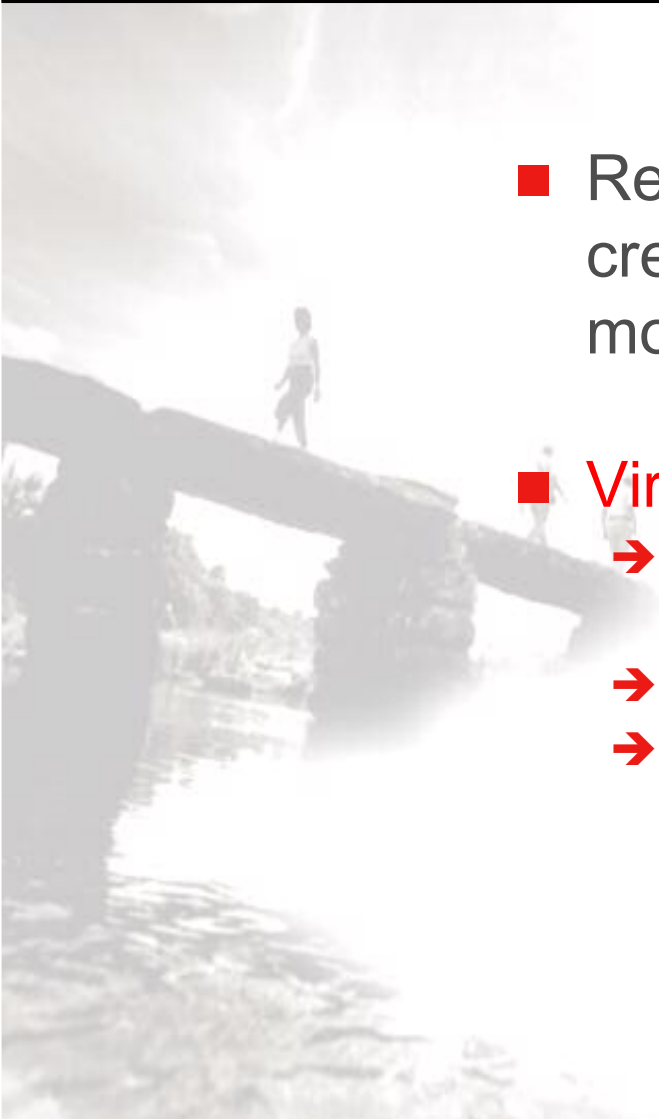


The challenge of delivering content to mobile devices – commercial model

- TV is free
- Radio is free
- Even time-shifting is free
 - but...
- Broadcast advertising revenue is falling
 - Internet competition
- There isn't enough quality content available
- There isn't enough revenue to go round
- Revenue models needed to create new, and valuable, content for mobile



The challenge of delivering content to mobile devices – commercial model

- 
- Revenue models needed to create new content for mobile
 - **Virgin Mobile**
 - Free phone and TV service with £25 monthly contract
 - Phone £109.99 PAYG
 - 90-days free with PAYG then monthly charge



The challenge of delivering content to mobile devices

- What do users want?
- Mobile TV
 - Snack-length items
 - News, weather
 - Longer-form simulcast
 - 5-plus channels
 - Willingness to pay
- Radio
 - Digital radio well liked



Source: BT Movio 2005 Pilot



The challenge of delivering content to mobile devices

- What do users want?
- Other services:
- Digital Music Download (DMD)
 - UBC Media music download service
 - Real-time - interact with digital radio programme
 - Successful 2006 trial – 83% keen to use

Source: UBC Media DMD Trial



The challenge of delivering content to mobile devices

- A new age of content creation and consumption
- Services:
 - Free and pay TV and radio
 - Non-linear/On-demand
 - Record/rewind/timeshift (PVR)
 - Hybrid linear/DMD
 - Download/Cache/File push
 - Podcast
 - User-generated content
 - Interactivity
 - Voting/Dating/Gambling
 - Traffic information/local/regional...





Mobile TV – Evolution or Revolution?

A Content and Consumption Revolution

Tomorrow's consumer devices...

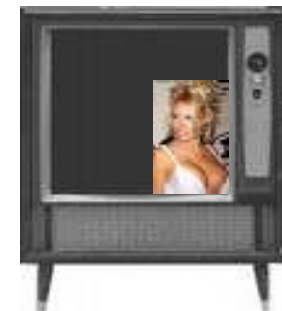
...tomorrow's service delivery methods...

...need to be flexible and future-proof

Mobile TV is key...

It drives many technology choices
but...

it is only part of the picture!





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