

Overview of PVR Technology and Applications to Date

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Terminology

- PVR – Personal Video Recorder
- DVR – Digital Video Recorder
- PDR – Personal Digital Recorder
- All refer to high-capacity, local media storage on fixed magnetic disk drive, plus OS, UI, appropriate I/O, IR control and a data communications port
- At present “PVR” seems most broadly understood

The flint-axe era

- The stand-alone analog PVR
 - You supply the video (like VCR)
 - EPG via modem
- PVR as a new service business
- Basic functionality
 - VCR-like operations
 - “Smart” timeshifting (EPG)
 - Live pause
 - Play while recording
- <10 hours capacity
 - Plus ~30 min pause buffer

Second-gen: PVR+STB

- Integrated receiver/recorder
- The first “PDRs”
- EPG data comes with content
- Device dedicated to specific service
- Larger storage capacities (30 hrs +)
- Standalone devices also increased capacity

Issues of integration

- PVR “hijacks” the receiver
 - Two-tuner design
 - Twin-decoder design
- No encoder required
 - No consumer video input
 - No resolution choice
- Freeing up the backchannel
 - Updating the processor
 - Interactive services
 - Internet TV services

Next-gen devices

- More storage (50-100 hrs)
- HD capability (10-12 hrs)
 - Standalone & Integrated models
- Digital I/O (HDMI)
- PVR as standard in all STBs
- PC w/PVR
- Beyond A/V content
- Enabling home media networks
- More intelligence
 - Improved search
 - Segmentation/Micro-navigation (DVD-like)

Business reaction

- Commercial-skipping concerns
 - Fast-wind
 - 30-sec jump
 - Automatic removal
- Internet redistribution concerns
 - Defining the “authorized domain”
 - Content protection/copy management (DRM)
- PVR vs. VOD
- Future advertising models

Consumer reaction

- Strong desire yet low penetration
- Hardware + subscription obstacle
- Cheap or freely provided Sat/Cable STB+PVR may overcome consumer resistance in US
- Horizontal market development may also increase penetration outside US

U.S. PVR status report

- 1.5 million PVRs now in use in U.S.
 - 65% w/integrated receiver
- Projected to double by 2004
- Growth in cable STB
- Typical hard disk capacity is 80 GB now
- Likely to move to 120 GB by 2004



