Digital Video Recorders (DVRs): New Media in the Traditional Media Industry

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Agenda
• Digital Video Recorders (DVRs): Towards a Common Understanding
• DVRs in More Detail
  - Major Features
  - DVR-Driven Viewer Behavior
  - Actual DVR-Roll-Out
• Value Chain of Video Content Services Industry
• Implications of DVR-Roll-Out for Different Players
• Outlook

Main DVR-Features
• 'VCR on Digital Basis'
• Up to 200 video hours storage capacity (depending on model)
• Menu System (Electronic Program Guide)
• Pausing, Rewinding, Fast-Forwarding during Live Programs
  ➢ Uninterrupted Near-Real-Time Viewing
  ➢ e.g. 30-Second Jumps
• ‘Buffering’ Viewing at more favorable time slot
• ‘Bookmarking’ Avoiding constraints of the schedule
• ‘Grazing’ Scanning complete day's viewing via on-screen program guide and recording a selection for later viewing
• ‘Stacking’ Collecting a number of episodes for big viewing session
• ‘Archiving’ Storing content - to give copies to other people
• ‘Compressing’ Creating 'highlights' version (90 min game in 20 min)
• ‘Extending’ Watching live program, re-playing key events repeatedly
• ‘Pausing’ Zapping in and out of recorded content of live TV
• ‘Ad Sampling’ Halting fast forward process to watch ads one enjoys

Digital Video Recorder
(also: Private Video Recorder (PVR), Time-Shift Recorder (TSR))

DVR-Driven Viewer Behavior

Buffering
Viewing at more favorable time slot

Bookmarking
Bookmarking particular program

Grazing
Scanning complete day's viewing via on-screen program guide and recording a selection for later viewing

Stacking
Collecting a number of episodes for big viewing session

Archiving
Storing content - to give copies to other people

Compressing
Creating 'highlights' version (90 min game in 20 min)

Extending
Watching live program, re-playing key events repeatedly

Pausing
Zapping in and out of recorded content of live TV

Ad Sampling
Halting fast forward process to watch ads one enjoys

... Plus
Ad Jumping
**Consumer-Interest in DVR-Features ('Very Interesting', % of Age Group)**

- Ability to skip commercials
- Simple recording of TV programs
- Ability to pause live TV
- Ability to record shows relevant to interest
- Instant replay
- Ability to search and record programs by actor, genre etc.

**Impacts of DVR-Driven Viewer Behavior**

- Cross-promotion & lead-ins ⇒ Questionable
- Role of prime time and concept of life shows ⇒ Minimized
- 'Call-in' model ⇒ Not feasible
- Channel surfing ⇒ Reduced
- Exposure to commercials ⇒ Reduced

- Different forms of advertising needed (e.g. promotions within programs)
- Replay figures replacing Nielsen Data
- More accurate information about viewers


**DVR-Roll-Out in US (% of TV HH)**

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**Value Chain**

- Content Providers
  - e.g. Hollywood
- Channels (Aggregators, Programs)
  - e.g. CNN, ESPN, Discovery
- Equipment Providers
  - DVRs - e.g. Motorola, Scientific Atlanta
- Satellite Distributors
- Multi Service Operators (MSOs)
- Distributors
  - e.g. Comcast, Time Warner, Cox
- Viewer
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TiVo Impact on Advertising Attention

<table>
<thead>
<tr>
<th>Reality TV, News, Events</th>
<th>Drama, Comedy</th>
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DVR Impact on Advertising Attention

<table>
<thead>
<tr>
<th>Advertising hours per year</th>
<th>Loss due to DVR (in %)</th>
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<tbody>
<tr>
<td>76.9</td>
<td>0.3 2002a</td>
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<tr>
<td>79.4</td>
<td>1.7 2003a</td>
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<td>11.6 2006e</td>
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<td>88.8</td>
<td>16.6 2007e</td>
</tr>
<tr>
<td>91.1</td>
<td>24.3 2008e</td>
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</table>

DVR-Impacts Along Value Chain

- DVRs - Equipment Providers
  - e.g. Motorola, Scientific Atlanta
- DVRs - Channels
  - Channels (Aggregators, Programs)
    - e.g. CNN, ESPN, Discovery
- DVRs - Multi Service Operators (MSOs)
  - e.g. Comcast, Time Warner, Cox
- DVRs - Content Providers

Example - Cable Operator View -

- Income
  - Advertising (from channels)
  - Subscription (from viewers)

- Cable Operators (MSOs) vs. DVRs
  - On-demand sales vs. DVDs ??
  - DVDs (and their exchange platforms) vs. DVRs

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Outlook on DVR-Impacts

New technologies such as DVRs:
Impact on various business models / economics in related industries

Still too new and too small to offer real world calculations
Less country-specific than infrastructure - / facility battles

… Questions, Comments, Complaints ?

Thank you very much for your attention!

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