Position Paper: Third W3C Web and TV Workshop September 2011

Bill Mandel / bill.mandel@nbcuni.com
VP Technology, Universal Pictures
August 15, 2011

Interactivity in entertainment media

- Utilized to showcase additional materials and experiences that can be packaged with a collectible consumer entertainment product.

- History has been what you see today on DVD and Blu-ray

- Has been a number of tries at incorporating web type standards:
  - Authored as 'ROM Files' on DVD: "web links", Nuon, Interactual/PC Friendly, DHTML and ultimately Flash
  - Scripting based formats: PlayStation Portable UMD, HD DVD
  - iTunes extras, Facebook application, Silverlight enhanced movies

- Issues that come up:
  - Same experience for all.
  - Multiple authoring (programming)
  - Complexity of authoring vs. making street date.
  - Consistency of runtime on different platforms. Verification, testing and QC

- Looking to discuss with W3C typical content authoring issues that have come up with disc based product and provide some comments and requirements for the standardization process to consider.

DVD Experience

- Simple state machine with very basic command based language can be programmed manually or via specialized tools (authoring systems) that streamline some of the tedious work. Essentially a programmable calculator that can run in time with video.

- Ability to have interactivity over video

- Deals with remote control reasonably well and even computer mouse when on a PC

- Multiple tracks of audio, subtitles and even video

- Does not provide any ability to update programming after release or Internet features.

- Challenging to deal with player inconsistency, need to solve flaws by modifying programming to least common denominator rather than firmware updates in players.

- But it does allow for highly complex presentation of huge amounts of extra materials, numerous videos, thousands of stills, layered presentation etc.

- In moving from DVD to Blu-ray stated goals were Internet connectivity and better verification and consistency of players.

Blu-ray experience

- Dual mode devices that can be programmed by either a "tricked up" DVD style system 'HDMV' or via Java 'BD-J'. Most titles are developed in Java to accommodate quite intricate interactivity and Internet connectivity. Supports augmenting the delivered disc contents with virtual file system downloaded.

- To accommodate tight programming deadlines with projects each production facility has created their own "framework": pretested code library that can be assembled into projects. Most interactive items are developed, added to this framework and reused in multiple titles.

- Compatibility generally is maintained best in cooperation between player makers and disc programmers as the nuances of issues are beyond what can be fixed on the java programming side only as was the case with DVD.

- Popular items have been imagery over video, picture in picture video and Internet streaming.

Requirements / Questions

- What would be ideal for us in a generic authoring platform?
    - Easily constructed interactivity and interactive wrappers around bundled content.
    - Technology suited for rapid development and consistent performance across ranges and classes of devices.
    - Interactivity and experience that can flow along with video
    - Layers of graphics (e.g. video, graphics, subtitles)
    - Timecode – Timeline based events.
    - Synchronous activities such as playing streamed audio over a download video or remotely controlled activity (e.g. server controlling playback to assist with a live commentary activity)
    - An expressed strategy for compatibility, QC and compliance verification

- Interest in determining if collectable downloaded digital content could re-use interactivity standards from TV, connected devices and the web in general.

Thankyou / Questions?