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sense and simplicity

Retail TV Products and the Need for a Stable Profile of Web Technologies

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Summary

- TV business models
- Focus of this presentation
- Consequences of business models on software updates
- Stable specifications
- Test suites, materials, ...
- Suggestions

TV Business Models

- Many different business models for TV – all successful in their own way
  - No winner or loser
- Classical “vertical” pay TV
  - Operator defines specification for receivers, buys receivers from manufacturers and leases them to consumers
  - Typically subscription based
- “horizontal” retail TV
  - Industry defines specification for receivers
  - Manufacturers implement industry specification at their own risk
  - Typically no subscription
- “diagonal” models
  - May be specified by operator or partly by industry & partly by operator
  - Receivers purchased in retail with subsidy or cash-back by operator
  - Many variations on this theme

Focus of this Presentation

- Focus of this presentation is “horizontal” retail TV and the unique requirements of that model
- In a purely horizontal model:
  - There's no network operator in charge to make the key decisions
  - The manufacturer gets income once when the consumer buys the TV and that's it
    - No revenue to the manufacturer after sale
  - Consumers own the device
    - May impose limits on what can be done by software updates
  - Typically no contract between consumer and service providers
    - User agreement (e.g. that particular applications are trusted) has to be obtained in other ways

Consequences of Business Models on Software Updates

- One place this has a big impact is software updates
  - All these devices have the potential for software updates
  - Software updates cost – payments to suppliers, integration, testing and distribution
- Even if suppliers provide updates for free & distribution is via internet, integration and testing have to be funded
  - In a horizontal retail model, that has to come from the income at the time of purchase
  - Software updates are typically limited to fixing critical bugs
- The business model won't support (say) 3-4 software updates per year for the (7-year) lifetime of a TV set
- It's not unique to TV - how many of today's Android 2.2 tablets will get upgraded more than 1 android version?

Stable Specifications

- If devices will only be updated to fix bugs then stable specifications are very important
- If specifications change then the devices you sell today become tomorrow's legacy problem!
- Sometimes there's a very hard choice;
  - Reference something which is formally work in progress or
  - Invent your own solution or
  - Don't have the feature
  - If the market requires a feature then the last of these isn't an option
- Known issues include
  - HTML5 (media tags, cross document messaging, …)
  - Widgets
  - Specifications from UK DTG CTV – CSS3, Web notifications, ...
  - Cross-origin resource sharing

Test Suites, Materials, ...

- Test pages, streams, files & other materials are an important aspect to achieving stable specifications
  - Both for informal testing by implementers and as part of certification programs in order to obtain a logo or trademark
- If different downstream specifications that are choosing from the W3C toolbox make their own test pages (etc.) this is;
  - A big waste of effort
  - A problem for implementers addressing >1 of downstream spec
- In our opinion, most relevant are:
  - aspects of HTML 5 which were not in HTML 4 or which have changed from HTML 4
  - CSS3 2D and 3D
    - Both functional correctness and minimum performance need to be addressed
    - Content developers need to be able to rely on a minimum level of performance when creating their services
- Integration of existing test materials into test automation frameworks may also be interesting

Suggestions

- Organisations will be making selections from newer W3C specifications for TV and related markets
  - Like CEA did in CEA-2014 for the older W3C specifications
  - Having the W3C more aware of what's being selected could inform both sides and result in better, safer and more stable selections
- Co-operation on test materials should be explored
  - Developing and/or validating test materials for newer technologies
  - Integration of existing test materials into test automation frameworks
- A lot of work has already been done in device APIs for TV (e.g. OIPF)
  - Any W3C work in this field should build on these specifications (and test specifications / materials) rather than duplicating it
  - Consider if submitting some/all of the OIPF JavaScript APIs to W3C would be useful or just a waste of everyone's time
    - Perhaps some of the JavaScript APIs presented by Ericsson could also be used with the <video> object?

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Background

W3C Work in Progress Referenced by OIPF

- W3C, “CSS Backgrounds and Borders Module Level 3”, Working Draft 10 September 2008.
  - Used for border-*-radius
- W3C, “HTML5 - A vocabulary and associated APIs for HTML and XHTML, Working Draft 25 August 2009”
  - Used for cross document messaging and media tags
- Widgets
  - W3C, “Widgets 1.0: Access Requests Policy”, Last Call Working Draft, 8 December 2009
  - “Widgets 1.0: Widget Interface”, Candidate Recommendation, 22 December 2009
  - “Widgets 1.0: Digital Signature”, Candidate Recommendation, 25 June 2009
  - W3C, “Widgets 1.0: Packaging and Configuration”, Candidate Recommendation, 1 December 2009
  - W3C, “Web-Storage”, Last Call Working Draft 22 December 2009


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