Bridging the Gap between eBook Readers and Browsers
Position Paper for W3C's eBooks Workshop

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Abstract

Using Web technologies as a platform has become a common approach for many IT scenarios. In this position paper, we describe how a structured analysis of current common eBook readers, and the capabilities of the evolving HTML5 platform, can help to identify areas where there are gaps between what a "Web as a Platform (WaaP)" eBook reader requires, and what HTML5 and its implementation in modern browsers currently deliver. We believe that eBooks and ePublishing of pre-packaged materials in general should be an important enough use case to influence some of the relevant HTML5 standards, and the current landscape of over 50 specs under development makes it non-trivial to match identified eBook-reader uses cases against current WaaP capabilities. Our proposal is to work towards a functional description of eBook readers that makes it easy for eBook producers and the creators of eBook readers to decide whether a pure WaaP approach is currently feasible for them or not. Such a functional breakdown can also serve as a guide for identifying the most important areas where HTML5 needs to add or change functionality to become a better eBook implementation platform.

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1 Our Perspective

The current landscape of eBook readers is using custom apps, with all the disadvantages that come with this delivery model. Part of the reason for this is that custom apps make it easier to build DRM-based solutions that, for example, plug into a platform's identity and payment model. These reasons are not very much based on technology, it's mostly a business decision to design eBook stores and readers in a way that creates a well-controlled environment. However, even in environment where these business reasons do not exist, delivering eBook content as Web apps is hard because any eBook platform needs to provide some fundamental functions such as storing potentially large user libraries locally, and providing an environment where these libraries are available in offline mode. Also, it often will be necessary to sync libraries across devices, so that a users have access to the same content on their laptops, tablets, and smartphones, without the need to necessarily to manually sync all individual platforms.

We believe that the current set of Web technologies looks promising, but still has limitations to it because most of the energy in the recent HTML5 developments have gone into improving the runtime environment for scripting, rather that into improving the Web as a information delivery platform. While approaches such as *HTML5 "Offline Web applications"* [1] clearly are required, the current approach very much centers around code delivery, and does not really look into how such a mechanism should be structured and controllable for delivery of large packaged content.[1]

Another interesting question from the Web perspective is that of annotation. For security reasons, same-origin access policies apply to a variety of Web technologies. In the eBook space, however, providing content and adding in annotations from third parties can be an essential part of an eBook platform, for example when looking at scenarios of educational content, where the core content is an eBook, but the delivery model should be able to easily mix in additional content/comments from teachers and maybe even students. All these features of course heavily depend on how such a scenario is structured and implemented (are annotations pulled in on the server-side or the client-side, for example), but we believe that a structured look at features of current and desirable would help a lot to understand where current Web standards are sufficient, and where they may be lack features or functionality.

2 Our Interests

Our goal for the workshop is to create a systematic overview of current eBook environments, their features, and how these could be supported by current Web technologies. By presenting such an overview (starting from some popular eBook environments and an existing overview of the HTML5 landscape[2]), we believe that we can help eBooks in two ways:

- *Content providers* have a better starting point to understand how their publishing needs may or may not be met by current Web technologies. For some requirements, maybe it is possible to use libraries for frameworks, while for others, maybe Web technology is a limiting factor and certain publishing needs cannot be met at all. Such a starting point will help publishers to select Web technologies when possible, and thus should promote the use of Web-based eBooks.
- *Technology providers* (the W3C and browser manufacturers) can clearly see the possibilities and limitations of the current Web platform for ebooks, and thus it should become easier to identify pain points, and possible strategies when it comes to improving the Web as an eBook platform. While some features that are lacking are notoriously hard to tackle (such as a unified payment models or DRM in the browser), there may be other areas with better "bang for the buck", where for example one rather simple missing feature would enable a new class of applications to be supported, such as collaborative content revolving around eBooks as starting point.

We are currently working on educational content and face the real challenges of how to best author, package, and deliver en eBook that should become an open and easily accessible resource that can be

[1] As an example, a *Quota API* [2] was recently proposed, and might make it much easier for content-heavy Web apps to deliver UI/UX that allows users to meaningfully control local storage, instead of forcing them to go through browser configuration settings.

[2] http://dret.typepad.com/dretblog/html5-api-overview.html

accessed, used, and enriched by educators anywhere. We think that with eBooks as a useful and promising scenario, we can help to push Web technologies further along than they are now, and the more momentum we can gather behind such a movement, the more this community may be able to influence where WaaP is going.

3 Future Work

Should the workshop result in a working group or an interest group, our main interest is to have a forum where we can participate and contribute when it comes to making the Web a friendlier place for eBooks. We believe that there still are great opportunities for content-centric applications on the Web, and that the current success of walled gardens simply is an indication that people are willing to consume books on the electronic devices. By focusing on the needs of open and decentralized eBook scenarios, the Web can become an open place where people can easily publish, consume, and share eBooks and content associated with them.

References

[1] Robin Berjon, Travis Leithead, Erika Doyle Navara, Edward O'Connor, and Silvia Pfeiffer. HTML5 — A Vocabulary and Associated APIs for HTML and XHTML. World Wide Web Consortium, Working Draft WD-html5-20121025, October 2012.

[2] Kinuko Yasuda. Quota Management API. World Wide Web Consortium, Working Draft WD-quota-api-20120703, July 2012.