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Thinking About Technology - Steve Jobs Was Right about HTML5, but Was He Right About Digital Publishing?

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*Thinking About Technology . . .***Steve Jobs Was Right About HTML5, but Was He Right About Digital Publishing?***

Darla W. Jackson**

Steve Jobs predicted that HTML5 would replace Adobe Flash, and in November 2011, Adobe announced it would cease developing its Flash Player plug-in for mobile browsers and encourage developers to adopt the HTML5 standard. Ms. Jackson discusses some of the features of HTML5 and suggests that as search engine optimization and usability on mobile devices become increasingly important, law librarians should consider how HTML5 features may prove useful in achieving the goals of the law library. Further, she discusses how HTML5 may also influence the development of legal digital publishing initiatives.

¶1 In 2010, in this column, I mentioned HTML5 with regard to the iPad.¹ At both the Mid-America Association of Law Libraries/Southwestern Association of Law Libraries (MAALL/SWALL) 2011 Joint Annual Meeting and the 2011 Center for Computer-Assisted Legal Instruction (CALI) conference, Timothy Wilson, the electronic resources librarian at St. Mary's University, delivered presentations on HTML5.² Wilson prompted my desire to return to the topic in more depth. As Wilson indicated, while the HTML5 standard is familiar to many in the developer community, it was Steve Jobs who brought HTML5 to the forefront when he suggested that Adobe Flash, which Jobs would not permit to be included on Apple mobile devices, would be replaced by HTML5.³

¶2 Despite Adobe's spirited response to Jobs,⁴ less than two years later Adobe announced that it would cease developing its Flash Player plug-in for mobile browsers and encourage developers to adopt the HTML5 standard.⁵ And in spite of

* © Darla W. Jackson, 2012. The title of this article was inspired by Mike Isaac, *Jobs Was Right: Adobe Abandons Mobile Flash, Backs HTML5*, GADGET LAB (Nov. 9, 2011, 3:09 A.M.), <http://www.wired.com/gadgetlab/2011/11/adobe-kills-mobile-flash>.

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1. Darla W. Jackson, 2010: *The Year of the iPad*, 102 LAW LIBR. J. 513, 519, 2010 LAW LIBR. J. 29, ¶ 17.

2. A video of the CALI presentation is available. Timothy Wilson, *The Future (of Web Development) Is Now: Key Features of HTML5 That Are Ready for the Web*, presentation at the CALI Conference in Milwaukee, Wisconsin, June 25, 2011, <http://conference.cali.org/sites/conference.cali.org.2011/files/sessions/91/Player.html>.

3. Steve Jobs, *Thoughts on Flash*, APPLE (Apr. 2010), <http://www.apple.com/hotnews/thoughts-on-flash>.

4. Kevin Lynch, *Open Access to Content and Applications*, ADOBE FEATURED BLOGS (Feb. 2, 2010, 8:35 A.M.), http://blogs.adobe.com/conversations/2010/02/open_access_to_content_and_app.html.

5. Sarah Jacobsson Purewal, *Adobe Ends Mobile Flash Development, Report*, TODAY@PC

previous doubts that HTML5 would prevail over Flash, Adobe's announcement certainly supports the conclusion that HTML5 is the future (perhaps even a future that is already upon us). As a result, law librarians must begin to consider how HTML5 features may prove useful in achieving the goals of the law library and the organizations that law libraries serve.

What Is HTML5?

HTML5 is not just some really fancy markup language. Instead it is a revised specification for how the foundational markup language of the web, HTML, should be used to deliver . . . just about anything you might see in a web browser. It is an evolving standard proposed and developed by the Web Hypertext Application Technology Working Group (WHATWG), which aims to move web markup into the practical . . .⁶

¶3 While HTML5 has been described as a "snapshot" of the evolving HTML standards, the designation as version 5 is no longer accurate. The Web Hypertext Application Technology Working Group (WHATWG) has now transitioned to an "unversioned" model for HTML in which draft milestones are considered on a per-section basis rather than as a whole.⁷ Additionally, the term *HTML5* is used by many web companies and developers "to describe HTML, CSS, and JavaScript as a basket of related technologies."⁸

¶4 Although there are numerous explanations of what the term *HTML5* encompasses, one of the noted advantages of using HTML5 is that, because it is an "evolution of HTML4/XHTML1.0," most developers "know most of it . . . [and] won't be using a completely new markup language."⁹ However, HTML5 does involve a number of new features; some of the most notable of which are:

1. HTML5 provides for native support for audio and video via web browsers. Current browsers rely on plug-ins, including Adobe Flash, Apple QuickTime, and Microsoft Silverlight, for handling multimedia content. HTML5 will address the plug-in issue for mobile devices by "mandating built-in support for video in browsers and allowing designers to insert <video> and <audio> tags into their pages."¹⁰

WORLD (Nov. 9, 2011, 4:17 A.M.), http://www.pcworld.com/article/243459/adobe_ends_mobile_flash_development_report.html.

6. Jason A. Clark, *HTML5: Changing How You Use the Web*, ONLINE, Nov./Dec. 2010, at 12, 12.

7. FAQ, WHATWG WIKI, <http://wiki.whatwg.org/wiki/FAQ> (last modified Apr. 23, 2012) (section 3.7: "What's This I Hear About 2022?").

8. Kony, HTML5—FAQs [3] (2011), <http://www.kony.com/sites/default/files/faq-html5-v5.pdf>. However, at least one developer opined that the semantics are important and that HTML5 should be understood as not including other web technologies such as CSS3, SVG, and web sockets. Jeffrey Way, *28 HTML5 Features, Tips, and Techniques You Must Know*, NETTUTS+ (July 14, 2011), <http://net.tutsplus.com/tutorials/html-css-techniques/25-html5-features-tips-and-techniques-you-must-know>.

9. Craig Buckler, *5 Reasons Why You Can Use HTML5 Today*, SITEPOINT (July 20, 2010), <http://www.sitepoint.com/5-reasons-why-you-can-use-html5-today/#fbid=5ojNGb9yH99>. In fact, WHATWG now refers to the new standard as HTML rather than HTML5. Ian Hickson, *HTML Is the New HTML5*, THE WHATWG BLOG (Jan. 19, 2011), <http://blog.whatwg.org/html-is-the-new-html5>.

10. Matthew B. Hoy, *HTML5: A New Standard for the Web*, 30 MED. REFERENCE SERVICES Q. 50, 52 (2011).

2. HTML5 refines the syntax of the markup language. The new standard is intended to encourage the separation of presentation from content. "HTML5 also adds some new semantic tags like <article>, <aside>, and <nav> that will better define blocks of content within pages."¹¹
3. HTML5 provides the capability to "build web-apps that behave more like local applications." HTML5 features including "drag-and-drop file management and local storage will allow developers to build web-based applications that seamlessly integrate with the user's computer." HTML5 will also support offline caching. This is particularly attractive for mobile users, since most mobile devices are limited in their connectivity and bandwidth.¹²
4. Canvas and Scalable Vector Graphics (SVG) tags allow developers to do what couldn't readily be done previously, which is to "draw on the web."¹³ Canvas "allows for dynamic rendering of shapes and images in the web browser."¹⁴ Developers can utilize dynamic database-driven data and apply them to visuals such as graphs, pie charts, and maps. Additionally, developers can write scripts that respond to users' interactions with the image—for example, by enlarging a particular part of an image when a user clicks on it.¹⁵

¶5 Additional features, such as improved form functionality¹⁶ and increased user editing and interactivity, are also attributes of HTML5,¹⁷ although they will not be addressed in this column.

Benefits

¶6 As law librarians have increasingly become responsible for supporting the web presence and marketing efforts of their organizations, they may want to consider using HTML5 for a number of reasons. Perhaps the most significant of these is the opportunity to optimize the visibility of the library or organizational web site in search engine search results, or more specifically, to ensure that the institutional or organizational web site is higher ranked on search engine results pages (SERPs).

¶7 For some time, search engine optimization (SEO) has been an important component of web development; however, it may become even more important as the scheme of domain name structures becomes more complex. The complexity may result from expansion of the generic top-level domain structure.¹⁸ In June

11. *Id.* at 53.

12. *Id.* at 52.

13. Brad Neuberg, *Video Introduction to HTML5* (Sept. 21, 2009), <http://www.youtube.com/watch?v=siOHh0uzcuY> (video at 6:07) (discussion of how to "draw on the web" using SVG and Canvas).

14. Wilson, *supra* note 2 (video at 44:45; Wilson demonstrates the working of Canvas beginning at 43:25).

15. Jacob Gube, *5 Exciting Things to Look Forward to in HTML 5*, READWRITEWEB (Dec. 18, 2008, 7:00 P.M.), http://www.readwriteweb.com/archives/5_exciting_things_in_html_5.php.

16. Jan Kleinert, *Making Forms Fabulous with HTML5*, HTML5 ROCKS (June 2, 2011), <http://www.html5rocks.com/en/tutorials/forms/html5forms/>.

17. Gube, *supra* note 15.

18. "The right-most label in a domain name is known as its 'top-level domain' (TLD)." There are country code TLDs, which are two letters, and more familiar three-letter generic TLDs (sometimes called extensions), such as .com, .net, and .org. *Top-Level Domains (gTLDs)*, ICANN, <http://archive.icann.org/en/tlds> (last visited May 30, 2012).

2011, the Internet Corporation for Assigned Names and Numbers (ICANN) announced that in 2012 it would begin accepting applications for new generic top-level domains (gTLDs).¹⁹ Despite continued opposition to the move because of fears it will lead to increased fraud, ICANN has gone forward with the expansion.²⁰ ICANN suggests that in addition to other positive outcomes, the expansion of gTLDs, which allows the use of non-Latin alphabets, will improve Internet access for large numbers of users.²¹ ICANN has projected that the number of gTLD applications may be as high as 4000 and that it might “offer additional gTLDs in the future.”²² On the other hand, because significant costs are involved, including a \$185,000 processing fee, the number of applicants may be more limited than anticipated.

¶8 Users increasingly use search engines, rather than URLs, to navigate the web. Particularly if, as anticipated, a significant number of gTLDs begin using non-Western character sets, use of search engines rather than URLs will certainly increase. It has even been suggested that, under these circumstances, the number of gTLDs may no longer be a significant issue.²³ If users are navigating the web through the use of search engines rather than URLs, law librarians involved in institutional web site development should contemplate using tools that will increase their web site’s ranking on the SERP.²⁴ Search engine algorithms vary, but in 2010 a Google employee suggested that developers should not “expect to see special treatment of your content due to the HTML5 markup at the moment.”²⁵ However, he also noted that if and when Google finds that more content is using HTML5 markup and “that th[e] markup can give us additional information, and that it doesn’t cause problems if webmasters incorrectly use it . . . , then over time we’ll attempt to work that into our algorithms.”²⁶

¶9 One of the benefits of HTML5’s inclusion of new semantic tags and elements is that web pages can “be indexed and searched more efficiently due to

19. Press Release, ICANN, ICANN Approves Historic Change to Internet’s Domain Name System (June 20, 2011), <http://www.icann.org/en/announcements/announcement-20jun11-en.htm>.

20. Tom Foremski, *US Opposition to ICANN’s Domain Names Policy Could Lead to a Fractured Internet*, ZDNET (Dec. 2, 2011, 11:40 A.M. PST), <http://www.zdnet.com/blog/foremski/us-opposition-to-icanns-domain-names-policy-could-lead-to-a-fractured-internet/2029>; Kevin Murphy, *ICANN Snubs Critics, Opens Domain Extension Floodgates*, THE REGISTER (Jan. 11, 2012, 12:46 GMT), http://www.theregister.co.uk/2012/01/11/icann_gtld/page2.html.

21. ICANN, NEW GENERIC TOP-LEVEL DOMAINS FACT SHEET (Apr. 2012), <http://www.icann.org/en/resources/idn/idns-fact-sheet-04apr12-en.pdf>.

22. Mathew J. Schwartz, *ICANN’s Vanity Top-Level Domain Names: Fraud Magnet?*, INFORMATION WEEK (Jan. 11, 2012, 12:45 P.M.), <http://www.informationweek.com/news/internet/policy/232400169>.

23. Barry Leiba, *The Good and the Bad of Top-Level Domains*, SCIENCE 2.0 (May 27, 2009, 9:29 P.M.), http://www.science20.com/staring_empty_pages/good_and_bad_toplevel_domains.

24. This column covers law librarian web development tools; a discussion of the effect of the ICANN change on access to U.S. and foreign legal information, as well as the effect on legal research instruction, are subjects beyond its scope.

25. John Mu, Comment to *How Well Does Googlebot Deal with Non-standard Tags?*, GOOGLE: WEBMASTER CENTRAL (Oct. 17, 2010), <http://www.google.com/support/forum/p/Webmasters/thread?tid=1d3850aec4e3dd96&hl=en>.

26. *Id.*

cleaner code.”²⁷ Further, use of HTML5 will facilitate indexing of *all* of the content on a site—even “content currently embedded in animations will be readable to search engines.”²⁸ Additionally, HTML5’s “addition of <article> and <aside> tags [may] benefit researchers by providing more context within pages and allow[ing] for easier programmatic gathering of citation information.”²⁹

¶10 Besides making institutional and library sites more visible and higher ranked in search engines, another suggested advantage of switching the tool used for web development is the “buzz” it may generate. As one developer suggests,

Buzz generates links. HTML5 is a continuing topic of interest. You might not find a lot of stories on the standard’s SEO benefits, but you’ll certainly find a lot of stories on the standard itself. If Facebook can generate interest with its new HTML5 iPad app, certainly your site can make the switch to HTML5 and get some good press (and links) in the bargain.³⁰

Similarly, as I have previously suggested, early adoption of technology creates the perception that an organization is “tech savvy” and may encourage users to be more receptive to services and information provided by the organization.³¹

¶11 Perhaps the most significant advantage of using HTML5 for web development is that adoption of HTML5 may allow developers to create sites that make the user experience more pleasant.³² With the increasing popularity of mobile devices, including smartphones and tablets, web sites that hope to survive must consider the necessity of becoming more mobile-friendly. HTML5 has features allowing for easier audio and video streaming on mobile devices and reduced download times, and this will certainly improve the experience that mobile device users have when visiting web sites as well as facilitating improved interaction.³³

¶12 As Jason Clark noted in *Online* magazine,

We are really just at the forefront of HTML5 in library web development, but the possibilities and potential could lead to the next generation of library web apps for emerging devices such as the iPad. We can develop responsibly and work to build the next version of the web using HTML5.³⁴

¶13 The expanded availability of legal resources in an electronic format that may be facilitated by the development and acceptance of the HTML5 standard is an even more favorable prospect for many law librarians. This was demonstrated in a brief but enthusiastic discussion about the opportunity to collaborate in the production

27. Susan Gordon, *HTML5—How SEO-Friendly Is It?*, MILESTONE INSIGHTS, <http://blog.milestoneinternet.com/web-2/html5-how-seo-friendly-is-it> (last visited May 19, 2012).

28. Terri Wells, *Should You Move Your Site to HTML5?*, SEO CHAT (Nov. 15, 2011), <http://www.seochat.com/c/a/Search-Engine-Optimization-Help/Should-You-Move-Your-Site-to-HTML5> (quote from second page of article).

29. Hoy, *supra* note 10, at 54.

30. Wells, *supra* note 28.

31. Darla W. Jackson, *Standard Bar Codes Beware—Smartphone Users May Prefer QR Codes*, 103 LAW. LIBR. J. 153, 156, 2011 LAW LIBR. J. 9, ¶ 9. Similarly, the authors of *Introducing HTML5* note that reading such a book demonstrates that “you’re an early adopter, ahead-of-the-curve.” BRUCE LAWSON & REMY SHARP, *INTRODUCING HTML5* 285 (2d ed. 2012). A May 2012 text search of *AALL Spectrum* and *Law Library Journal* in HeinOnline for the term **HTML5** found no significant discussions of HTML5.

32. Wells, *supra* note 28.

33. *Id.*

34. Clark, *supra* note 6, at 14.

of legal resources and programs, such as CALI's eLangdell program, following Apple's January 2012 introduction of iBooks Author.³⁵

¶14 Although law librarians have reacted favorably to the eLangdell program, CALI publications, which are published in PDF, ePub, .mobi, and Word formats,³⁶ do impose some limitations on the dynamic nature of the content. As one author pointed out, "the dominant formats in digital publishing have been PDF and EPUB, both static formats which, to varying degrees, make an e-book seem like a by-product of physical-world publishing work flow."³⁷ Similarly, Greg Lambert noted:

The format (look, feel & navigation) of the Kindle [.mobi format] works really good on a book that you read from cover to cover. However, name me the last book published by ThomsonReuters or LexisNexis that any of your attorneys read from cover to cover. They tend to skip around, look for specific sections, and flip back and forth from section to section. It "can" be done on the Kindle, just not very easily. I think most attorneys that have a Kindle understand the limits of that ability. With the more flexible iPad touch screen, this type of interaction should be easier (should be!!).³⁸

HTML5 may serve as "a possible way forward" to overcome these types of limitations.³⁹

¶15 Apple's iBooks Author uses HTML5 and JavaScript to support multimedia and interactive features in iBooks.⁴⁰ However, e-book readers other than iBooks do not support these extensions.⁴¹ It is iBooks Author's failure to adopt a nonpropri-

35. Posting of Mark Estes to AALL MEMBERS OPEN FORUM (Jan. 25, 2012, 9:07 A.M.), <http://community.aallnet.org/AALLNET/Discussions/Message/?MID=3420> (available to AALL members only) ("Apple's education event announcing iBooks Author reminded me of opportunities for law librarians to create new tools for teaching legal research and perhaps more exciting—to collaborate with law faculty to produce new, less expensive casebooks and treatises and practice books."); posting of Sarah Glassmeyer to AALL MEMBERS OPEN FORUM (Jan. 26, 2012, 10:36 A.M.), <http://community.aallnet.org/AALLNET/Discussions/Message/?MID=3460> (available to AALL members only) (describing CALI's eLangdell program).

36. See FAQ, CALI ELANGDELL, <http://elangdell.cali.org/content/faq> (last visited May 19, 2012). However, CALI is utilizing HTML5-based systems in another project. "CALI is in the process of recoding A2J Author from scratch to replace the Adobe Flash based system with a HTML5/Jquery web-based system that will run on smartphones, tablets (e.g. Ipads) and will work on almost any browser and on any operating system." John Mayer, *Teaching Law Students 21st Century Practice Skills Through Coding with A2J Author*, <http://conference.cali.org/2012/sessions/teaching-law-students-21st-century-practice-skills-through-coding-a2j-author> (last visited May 30, 2012) (describing a program to be presented at the 2012 CALI conference). While I am unaware of any specific plans, perhaps the adoption on the A2J project will result in transition to a similar HTML5-based publication program for eLangdell.

37. Richard Padley, *HTML5—Bridging the Mobile Platform Gap: Mobile Technologies in Scholarly Communication*, SERIALS, Nov. 2011, at S32, S36.

38. Greg Lambert, response to comment on Greg Lambert, *Could Legal Publishing Survive on iPad Only Books?*, 3 GEEKS AND A LAW BLOG (Apr. 5, 2010, 2:25 P.M.), <http://www.geeklawblog.com/2010/04/could-legal-publishing-survive-on-ipad.html>.

39. Padley, *supra* note 37, at S36.

40. Chris Foresman, *Enthusiasm for iBooks Author Marred by Licensing, Format Issues*, ARS TECHNICA (Jan. 20, 2012, 1:50 P.M. CST), <http://arstechnica.com/apple/news/2012/01/enthusiasm-for-ibooks-author-marred-by-licensing-format-issues.ars>.

41. *Id.*

etary publication standard that has been the source of some criticism,⁴² and its resultant failure to serve as a tool for producing cross-platform e-books may limit its potential. Greg Lambert aptly pointed out the issues created for legal publishers as a result of the proprietary nature of Apple products:

The biggest problem with legal publishers relying on the iPad as their platform for electronic publishing is that they are really locking themselves into a partnership with a company that is extremely proprietary Legal publishers also have to consider what to do when the next big product is released Pretty much all of that work that was put into making the publication work in the iPad format will have to be done all over again to make it work in the “next big thing.” Same as with all those companies that created iPhone apps who then wanted to make it available in other formats. . . . Most didn’t even bother to convert [the applications], thus locked themselves into a single vendor format with a small but vocal user base. If legal publishers go with the iPad, will they find themselves locked into a closed format and simply not port their product over to other formats simply because doing so . . . tips the scale of [the cost of publishing]?⁴³

¶16 These problems notwithstanding, it has been suggested that despite the need for users to have an iPad, there is “a big future . . . for the use of iBooks Author in law firms as a creator of teaching/reference tools, and, indeed, to make promotional and explanatory material for clients.”⁴⁴ A firm environment, in which a majority of the attorneys and staff may have access to iPads, is, however, different from the academic and court environments, where many users may not have access to the iPad.

¶17 In contrast to Apple’s iBooks Author, HTML5 has the potential for producing cross-platform works.⁴⁵ Academic legal publishers are beginning to recognize the demand for cross-platform materials. Kristine Clerkin of Wolters Kluwer has said that “in the last year or so, law professors have become increasingly interested in providing their course materials across platforms”⁴⁶ According to Clerkin, Kluwer will debut an “electronic book custom publishing system,” but “has not yet decided whether to also use Apple’s fully interactive system.”⁴⁷ Perhaps, instead of

42. Craig Grannell, *iBooks Author Riles Standards Advocates*, .NET (Jan. 20, 2012), <http://www.netmagazine.com/news/ibooks-author-riles-standards-advocates-121714>.

43. Lambert, *supra* note 38.

44. Simon Fodden, *Apple’s New iBooks Author*, SLAW (Jan. 19, 2012), <http://www.slw.ca/2012/01/19/apples-new-ibooks-author>.

45. David Cardinal, *What Is HTML5, and Why It Will Save the Web from Itself*, EXTREMETECH (Oct. 5, 2011, 12:05 P.M.), <http://www.extremetech.com/computing/98137-what-is-html5-one>.

46. Evan Koblenz, *Apple, Publishers, Open-Source Dictate Law School Textbook Evolution*, LAW TECH. NEWS (Jan. 25, 2012), <http://www.law.com/jsp/lawtechnologynews/PubArticleLTN.jsp?id=120253981173>.

47. *Id.* Other legal publishers have announced e-book initiatives as well. Thomson Reuters is publishing e-books on its ProView platform, which it touts as “the first eReader platform specifically built from the ground up for professionals” Press Release, Thomson Reuters, Latest Version of Thomson Reuters ProView eReader Platform Launches Globally (Mar. 7, 2012), http://thomsonreuters.com/content/press_room/legal/556134. Thomson acknowledges that ProView publications are “currently only available on iPad or via Web browser” but suggests that the publications are expected to be available “for other devices in the future.” THOMSON REUTERS, EBOOKS ON THOMSON REUTERS PROVIEW (Mar. 2012), <http://store.westlaw.com/pdf/proview/L-375035.pdf>. LexisNexis has announced its partnership with Overdrive to “create [a] customized eBook lending” collection. Press Release, LexisNexis, LexisNexis Announces LexisNexis Digital Library (Apr. 24, 2012), <http://www.lexisnexis.com/media/press-release.aspx?id=1335290703893930>.

using the Apple system, Kluwer's custom publishing will take advantage of the cross-platform potential of a system based on HTML5 standards.

¶18 While HTML5 does provide the potential for producing cross-platform resources, and in fact, in 2011, one company released a cross-platform e-book as an HTML5-based app,⁴⁸ distribution of the app remains an issue. For instance, as John Palfrey pointed out regarding his book, *Intellectual Property Strategy*, which was being developed as an app, any app distributed via Apple's App Store must first be reviewed and approved by Apple.⁴⁹ Further, as Palfrey mentions, although as an author he would prefer an open source app that could include commentary, he recognizes the publisher's concerns about this.⁵⁰ Perhaps Apple, or Steve Jobs, didn't fully consider the demand for digital publications (or at least digital publications of educational materials) to be available via multiple platforms, or the resistance of groups, including authors, web and app developers, and librarians, to the preemption of the HTML5 standard and the resources produced using HTML, in whatever version, by proprietary systems.⁵¹

Possible Concerns

¶19 Despite the exciting developments that may be possible with HTML5, there are some drawbacks. Web security issues have been the source of some concern regarding the use of the HTML5 standard. In August 2011, the European Network and Information Security Agency (ENISA) issued a report on HTML5 that found fifty-one security issues. ENISA's report concluded that "some of the security issues can be fixed by tweaking the specifications, while others are more risks based on

48. Christina Warren, "Sesame Street" E-Book Hits iPad and Chrome Web Store Simultaneously, MASHABLE BUSINESS (Feb. 6, 2011), <http://mashable.com/2011/02/06/sesame-street-chrome-web-store>.

49. *Book Talk: John Palfrey on Intellectual Property Strategy*, BERKMAN CENTER FOR INTERNET & SOCIETY (Nov. 21, 2011), video available at <http://cyber.law.harvard.edu/interactive/events/2011/11/palfrey> [hereinafter *Palfrey Book Talk*] (video at 71:32). The same review and approval process in the Mac App Store has been a source of concern for developers. See Jonny Evans, *Collected: What We Know About the Mac App Store*, COMPUTERWORLD (Jan. 6, 2011, 8:10 A.M.), http://blogs.computerworld.com/17618/collected_what_we_know_about_the_mac_app_store. Further, as Jason Clark cautions,

HTML5, along with JavaScript and CSS3, offer an alternative development platform to the native smartphone app market, but the app store model is not going away anytime soon. I wouldn't bet against Apple or Google's Android market in the short term. As HTML5 matures, you might see a serious challenge to the app store model, but it will take time.

Jason Clark, *supra* note 6, at 14. Preservation of a publication as an app involves additional issues. See John Palfrey, *Book Experiment #1: Intellectual Property Strategy as an iPad App (or, reply to Cody Brown)*, JOHN PALFREY (Jan. 30, 2012, 9:52 A.M.), <http://blogs.law.harvard.edu/palfrey/2012/01/30/book-experiment-1-intellectual-property-strategy-as-an-ipad-app-or-reply-to-cody-brown>.

50. *Palfrey Book Talk*, *supra* note 49 (video at 73:09).

51. Perhaps Jobs didn't anticipate the demand for digital books, at least textbooks, to be available on other platforms because he envisioned textbooks being provided for free. Apple, in contrast to Jobs's vision, will not offer textbooks for free. Matthew Panzarino, *How Does Steve Jobs' Vision for Textbooks Match Up with Apple's Reality?*, THE NEXT WEB (Jan. 19, 2012), <http://thenextweb.com/apple/2012/01/19/how-does-steve-jobs-vision-for-textbooks-match-up-with-apples-reality>.

the features that users should be alerted to⁵² In December 2011, security vendor Sophos raised security concerns because HTML5

provides far more access to the computer's resources than its predecessor. It's built to integrate with modern web browsing devices and offers capabilities like location awareness, graphics rendering and access to the webcam and microphone.

. . . .

The enhancements are great, but they radically change the attack model for the browser.⁵³

¶20 Another concern is that not all browsers support the entire range of features provided by HTML5. Despite the lack of universal browser support, though, most major desktop and mobile web browsers support many of the HTML5 features.⁵⁴ Information regarding browser support for specific HTML5 features is available via the web.⁵⁵ Even though browsers currently support the standard, the final recommendation for HTML5 is not expected until 2022.⁵⁶ This significant delay is, in part, necessitated by the desire to complete a comprehensive test suite that will require at least two browsers to pass before the final recommendation is made. As Ian Hickson pointed out in 2008: "If one were to try to write such a test suite for HTML4 and DOM2 HTML, one would find that there isn't even one browser that fully implements those specifications, let alone two."⁵⁷ Despite this, HTML4 and DOM2 HTML standards are current implementations.

¶21 While the delay in the final recommendation seems justified, particularly in light of the fact that, as stated above, many browsers already support many of the HTML5 features, it has nonetheless caused concern for some developers. In 2010, one developer concluded, "in the ever changing world of the web, HTML5 will

52. Jeremy Kirk, *European Security Group Issues Warning on HTML5*, ITNEWS (Aug. 1, 2011, 10:43 A.M.), <http://www.itnews.com/browsers/35282/european-security-group-issues-warning-html5>.

53. JAMES LYNE, *HTML5 AND SECURITY ON THE NEW WEB 2* (Dec. 2011), <http://www.sophos.com/medialibrary/PDFs/other/sophosHTML5andsecurity.pdf>. See also Robert Mullins, *Rise of HTML5 Brings with It Security Risks*, NETWORK COMPUTING (Jan. 24, 2012), <http://www.networkcomputing.com/next-gen-network-tech-center/232500303>.

54. Internet Explorer is the one major desktop browser that has traditionally failed to support significant features of HTML5; however, with the March 2011 release of Internet Explorer 9, even this browser supports many HTML5 features. Mobile devices have less powerful CPUs, and they have special web browsers designed to accommodate their limitations. These browsers, including the mobile browsers of many desktop web browser vendors, offer some of the most robust HTML5 support. One noted exception is Trident for Windows Phone 7, which is closely based on Internet Explorer 6 and offers "one of the poorest mobile HTML5 browsing experiences among smartphones." ADAM McDANIEL, *HTML5: YOUR VISUAL BLUEPRINT FOR DESIGNING RICH WEB PAGES AND APPLICATIONS 7* (2012). However, Windows Phone 7 with the Mango update is said to have improved support of HTML5 through Mobile IE9. Kony, *supra* note 8, at [4].

55. Detecting HTML5 support in a particular browser is not an exact science, but a number of web sites provide compatibility information. See, e.g., HAZ.IO, <http://haz.io>; WHEN CAN I USE . . . , <http://caniuse.com>. See also *HTML5 & CSS3 Support*, FINDMEBYIP, <http://www.findmebyip.com/litmus/> (last visited May 20, 2012).

56. Justin James, *HTML 5 Editor Ian Hickson Discusses Features, Pain Points, Adoption Rate, and More*, TECHREPUBLIC (Aug. 27, 2008, 3:25 P.M. PDT), <http://www.techrepublic.com/blog/programming-and-development/html-5-editor-ian-hickson-discusses-features-pain-points-adoption-rate-and-more/718>.

57. *Id.*

never be able to live up to its promises. Its development is just too slow. . . . It seems only proprietary frameworks like Flash and Silverlight can provide excellent development and design tools”⁵⁸ With the Adobe announcement regarding HTML5, it seems that this developer’s conclusions were premature. HTML5 does appear to be the future, and the future looks bright. HTML5 may facilitate law librarians’ contributions to their organizations. However, law librarians must continue to work to ensure that the promise of HTML5 is not dimmed by the preempting of the standard so as to produce only proprietary resources that are available on limited platforms.⁵⁹

58. [Alex Manarpies], *HTML5: “No Actual W3C Recommendation Status Until at Least 2022”???*, ACE ON TECH (Aug. 27, 2010), <http://www.aceontech.com/blog/2010/8/27/html5-no-actual-w3c-recommendation-status-until-at-least-202.html>. It is also interesting to note that functions such as the map of your research history in Lexis Advance are developments supported by Microsoft’s proprietary Silverlight application. Carol Ebbinghouse, *Lexis Advance: Legal Research for the 99%*, INFORMATION TODAY, INC. (Dec. 15, 2011), <http://newsbreaks.infotoday.com/NewsBreaks/Lexis-Advance-Legal-Research-for-the--79405.asp>.

59. John Sullivan points out that Steve Jobs and the Adobe representative, during the debate about Flash, failed to effectively address the concerns about the use of proprietary software on the web:

Freedom on the Web has multiple elements. Free standards like HTML5, which govern Web publishing, are critical and have amazing potential, but they are only one element. Standards are not enough on their own, because there is another layer between them and the computer user—the software used to interact with the Web, and the operating system surrounding it. Freedom in terms of Web publishing does no good if the software with which you access the Web filters it before it ever gets to you, or restricts you in other ways in order to grant access to the Web.

John Sullivan, *Pot, Meet Kettle: A Response to Steve Jobs’ Letter on Flash*, ARS TECHNICA (Apr. 30, 2010, 1:02 P.M. CDT), <http://arstechnica.com/apple/news/2010/04/pot-meet-kettle-a-response-to-steve-jobs-letter-on-flash.ars>.