HTML5 and the Mobile Web

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ABSTRACT

Accessing the Web from mobile devices is a popular practice. Trends show that the mobile space is becoming the method through which many consumers access content – both through native and web applications. These applications have expanded the browsing experience, but have also complicated the development process. A need exists for a simple, uniform solution which HTML5 is attempting to address. HTML is a mark-up language, now on its fifth edition, used for structuring and presenting content on the World Wide Web. Because of the large increase in users of mobile devices, internet access on these devices is widely used. The creation of web sites, web documents, and applications are done with HTML5, as it is compatible with both PC and mobile device browsers. However, with its lengthy development process, it is not yet apparent if HTML5 can incorporate the demands of developers in a changing environment. This paper provides an overview of the use of HTML5 in structuring and presenting content on the World Wide Web and compatibility issues on mobile browsers, key features, tools, and the advantages and disadvantages on the mobile web devices as well as the state of the mobile web.

Keywords: HTML, Mark-Up languages, Mobile Browsers, Mobile Devices, Mobile Web, Web Access

1. INTRODUCTION

In North America, three-quarters (75%) of teens and 93% of adults ages 18-29 now have a cell phone (Lenhart et al., 2010). With the use of mobile platforms to access multimedia, social networks and the internet becoming almost ubiquitous, many opinions on the most appropriate forms of development are emerging. With the growing popularity of Android-based devices and the already popular Apple iPhone and iOS platform, the options for developers (each with restrictions and unique abilities) are almost as diverse as the devices themselves. The mobile web is now rivaling desktop usage for total time spent on the Internet. Total time spent online has almost doubled in mobile devices (Ozks, 2011).

The proliferation of web-enabled mobile devices has had the effect of diversifying the hardware and platform architecture of devices available to developers. This is both an advantage to prospective developers and the biggest restriction: It is very unlikely that any application developed would have a single development run due to the nature of the different hardware and the different approaches necessary to develop software for them. HTML5 is becoming the new standard for web-development and is already being adopted all across the web.
34% of the web’s most visited sites conform to HTML5 standards (Maine, 2011). One of the reasons for this adoption is the shift to the Web and supporting applications. This means that the use of proprietary technologies to create applications for the web is being subsumed into the HTML5 standard, allowing developers to create rich, platform-agnostic applications. HTML (Hypertext Mark-up Language) is the authoring language used to create documents on the World Wide Web. HTML is used to define the structure and layout of a web page, how it is supposed to look and other special functions to be displayed. HTML achieves this by the use of adding tags which have attributes. For example: <p> would be used in HTML to create a paragraph break. When a user views a web page, they would not see the HTML as it is hidden from view, but they do see the results. HTML5 is the newest edition of this Mark-up Language which is widely used today and is supported by many browsers in both PC and Mobile Devices. Because of the rise in the quantity of mobile devices users, more and more internet activity is on these devices. HTML5 offers many new and improved features and is looking set to become the standard mark-up language in the very near future. HTML5 is still a work in progress and has its compatibility issues that are being solved and supported as time goes on. HTML5 works well on supported mobile browsers and offers many new features and advantages, so it is a good choice in creating web sites, web pages and mobile applications.

In specifying the technology behind HTML5, the specification is absorbing technologies like XHTML and by extension, XML (as well as specifying important elements of JavaScript). HTML5 is being specified because the old standards of HTML have become laden with convoluted functions and utilities which are unnecessary and inefficient; HTML’s vocabulary has not kept up with the times (Lerner, 2011). HTML5 offers developers new methods of producing semantically expressive elements on web pages; such as replacing “div” tags (commonly used to divide up a page into header, navigation, footer, etc.) with tags which express their purpose exactly: “<section>”, “<article>” and “<footer>” are examples of this. These examples highlight the ability of HTML5 to afford the developer a more efficient way of designing the web content. Furthermore, the efficiency of the standard is helped because it allows the developer conform to DRY principles (Don’t Repeat Yourself). Specifying HTML5 is providing developers the opportunity of creating a standard which conforms to their specific needs. With the specification being constructed by “people on the ground” who are working with the technology all the time, the structure and content of HTML5 is being suited to exactly what the industry is requiring. For example, anyone who wishes to can have their say on what the important issues surrounding the HTML5 standard are; through open forums and submission forms built right into the specification (Hickson, 2011).

Approaching with this standardisation is the ability for developers to create rich web sites and applications which can be viewed many platforms – including mobile. HTML5 is allowing the web to be uniform; offering similar and custom user experiences across platforms. It is overcoming obstacles set by hardware manufacturers: different screen resolutions, capabilities, sensor options, etc. By innovating and restructuring how content is created for the web, the impact of these restrictions is minimised. When it comes to mobile web development “our objective will be to make only one product” (Firtman, 2010). This sentiment is reflected in many publications and essentially boils down to the fact that the development of any web content should consist of one development period, with the content itself deciding how it should be presented to the user depending on viewing platform - an objective greatly assisted by the development of HTML5.

2. HTML5

Vannevar Bush first proposed the basics of Hypertext in 1945. Tim Berners-Lee popularised the World Wide Web, HTML (Hypertext
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