

The role of HTML5 and Flash in Web Design

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Abstract

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The purpose of this study was to determine whether HTML5 will replace Flash in the web design industry. Using the information taken from the study, the researcher made a prediction to answer the former question.

The researcher looked further into these programs and find information to determine what it is that makes each of these programs unique and possibly replaceable. The researcher also interviewed and surveyed those who used these programs to design or view online websites to gain insight on practicality and current trends in the web design industry.

Through research and experimentation, the researcher decided that HTML5 may replace Flash in the web design industry because of the found trends in today's society. HTML5 surely has much more work to go before being completely developed as a useable program, but once it is Flash will slowly disappear from the web. Adobe Flash may have lost its relevance in web design, but it is surely not disappearing completely any time soon due to the several other purposes it serves outside of the web.

Table of Contents

Chapter 1 – Introduction	4
Chapter 2 – Literature Review	7
Chapter 3 – Research Methods and Procedures	20
Chapter 4 – Results	22
Chapter 5 – Conclusions	31
Appendix A – Questionnaire/Survey	34
Appendix B – Interview Questions	36
References	37

Chapter 1

Introduction

Statement of the Problem

The web has become one of the most popular forms of media to share and communicate information throughout the world. The use of Hypertext Markup Language (HTML) is the standard method of displaying this information for users on the web. Web developers are constantly looking for ways to help enhance web users experiences through interactivity. In order to create this interactive aspect of web design, applications such as Adobe Flash have been developed. Flash gives web designers the opportunity to make interactive websites that could not have been designed in HTML alone. Both methods have their own positives and negatives, but with the introduction of HTML5, which has the capability of adding the interactivity that Flash did before, Flash may no longer be needed. The new HTML5 is designed to be an effective new way of coding that promises users a better web experience, replacing the older standards across all devices. Therefore, the purpose of this study is to determine whether the development of HTML5 will eventually replace Flash in the next few years.

Significance of Research

Web design is important in the graphic communication industry. With the ever-changing technology and growing population usage of mobile devices and tablets, it is

imperative to understand how to design for each of these different applications. In order to do so one must be able to use the tools available in the most effective and efficient way. The list of things to take into consideration when designing a web page today is constantly growing. A designer must be aware of factors such as search-ability, typography, loading time, screen size, and more. Because of the combination of these different factors and the constant change in communication devices and browsers, creating a website can easily become a challenge for the designer. It is necessary that the designer create an experience that meets user expectations. In order to do so the designer must have a full understanding of both programs Flash and HTML so that they can approach the project and meet all of the needs of their client in the most cost effective and practical way.

Flash may have limitations fulfilling the needs of users that the new HTML5 alone may be able to solve. Consequently, it is necessary to have an understanding of the advantages and disadvantages of both Flash and HTML5 in order to make an informed decision to answer the question of whether HTML5 will replace Flash and become the new standard in web development.

Interest in the Problem

As a Graphic Artist interested in the web design field of Graphic Communication, the researcher is interested in understanding the different applications that are used in the process of creating a successful website. This study intends to understand how to meet the needs of clients by creating a well designed website by having a complete understanding of the standard tools of Flash and HTML, and how to apply them in the most efficient way

possible. Web designers today have a bigger job than before, to create a website for not just to fit and look nicely on the computer, but for the smartphone and tablet devices as well. The announcement of HTML5 has made a huge impact in the Graphic Communication industry, and it has been speculated that HTML5 will be the future standard of web design. The researcher recognizes the importance of understanding the benefits and weaknesses of both these programs in order to be successful in the future as a web designer.

Chapter 2

Literature Review

With the changing technologies and growth in web development, it is important to understand the tools that could be used to design and to create an all around effective website for the viewer. This literature review begins with an explanation of the two methods that are used to create and incorporate interactivity into web design; one using *Adobe Flash* and the other using HTML5. This review examines the benefits of each program and how they are being used today and how they will be used in the future.

Adobe Flash

Adobe Flash was first released in the mid-1990s as a multimedia platform to add animation, video and interactivity to web pages. Flash is frequently used for advertisements, games, and flash animations for broadcasts. It has been used to create more interactive graphically pleasing websites and has more design capabilities than other methods that use coding. With the use of the free plug-in of Adobe Flash Player, web browsers are able to display animations built with Flash from any website for any computer to see. With these tools at hand, companies are able to create an enhanced web experience for their online visitors to help advertise and appeal to viewers.

Another common use of Adobe Flash is to create interactive games. Several of today's most popular browser-based games were created using this program. In fact, one of

the most popular, Angry Birds, was made with Flash Player 11. ActionScript, which is a form of coding in Adobe Flash, is another method that makes it possible to produce high quality animations that are superior to those created by other methods.

Flash as a main method of Web Development

According to Jesse Redniss, the Vice President of Cable TV's *USA Network* (Taft, 2011), Flash provides an ease of development process on one platform, and also an ease of cost and ease of development timeline."

Robert Boeri from *EContent Magazine* lists out several of the advantages of using Flash files for the web (2011).

Advantages

- Flash files are small and use very few computing resources.
- Although Flash requires constant updates, they are not much of a big deal, and are easy to implement
- It runs nearly everywhere, from 95% to 99% of web accessible devices (Only excluding Apple mobile products)
- Flash runs on the 3 major computing platforms—those being Windows, Various flavors of Unix such as Linux and Solaris, and Mac OS—and in all major browsers.

Disadvantages

- Edit ability

- Search Purposes (SEO)
- Not available/will not work on any of Apple's mobile devices
- *Adobe* says it no longer plans to develop future versions of Flash Player for mobile browsers
- *Adobe* has faced increased vulnerabilities in the *Adobe* Flash standard exposed by hackers (Smith, 2011)

Future Outlook for Flash Applications

With *Apple's* decision in 2010 already made by dismissing the support of Flash in any of their mobile devices, *Adobe* has announced that it is no longer working on developing Flash for mobile platforms (Moren, 2012).

Flash still plays a prominent role in web design today. Although the next generation of HTML is believed to replace the program in the future, the program is still predicted to make progress in the industry. According to Dan Moren from *Macworld* magazine, Flash is undergoing improvement for future versions. Instead of working on improving its technology in mobile applications, Adobe plans to continue developing Flash on the desktop, where it will work hand-in hand with HTML5 (2012). Danny Winokur from *Adobe* says that with the halt of development on Flash for mobile platforms, Flash will increase investment and innovation with Flash where it can have the most impact for the industry which will include advanced gaming and premium video (2011).

Apple currently continues to draw back their support for Flash on Mac products. *Apple* has already stopped including the plug-in on their Macintosh products, so users that

want it have to download it themselves (Moren, 2012). Dan Moren expresses his concern for the future of Flash on the web, “It’s hard to imagine that software makers will continue to embrace a technology that is reaching fewer and fewer platforms” (2012).

HTML5

In 2009, the first working draft of HTML5 was introduced. HTML5 is the next evolution of web development standards by which application developers create end-user experience. HTML5 is a combination of HTML (Hyper Text Language), CSS (Cascading Style Sheets), and JavaScript all in one. Grensing-Pophal (2011) explains that HTML5 creates a universal set of capabilities without of plug-ins that is freely available to both users and developers. Already, some features of HTML5 are being incorporated into various webpages and applications. HTML5 is currently supported in *Apple* Safari, Google Chrome, Mozilla Firefox, Opera, and most recently Internet Explorer 9 browsers in addition to most mobile web applications.

Ultimately, the purpose of HTML5 is to create a simpler, faster, and cheaper way to run a website. HTML5 has several new capabilities that offer much more for the web in a simpler form of construction. The new standard will offer new features and allow for more artistic expression. HTML5 offers considerable potential for the future, so it is important to be aware of its capabilities and how they may be used. There is no doubt that HTML5 will make a huge impact on the Web in the future, and is something that web designers need to know about.

No need for Plug-ins

Unlike plug-in applications such as Flash, everything that is needed is built into the HTML5 coding. Frequently, with plug in applications developers must make an additional payment for their use. Some programs require multiple plug-ins depending both on desired functionality and browser being used to access information. HTML5 makes the use of plug-ins obsolete (Grensing-Pophal, 2011).

Bradshaw, a principal of Click Here, a digital advertising and marketing agency in Dallas states that with HTML5, “you are no longer required to stream your audio and video files through a Flash plug-in. This significantly reduces download times and theoretically reduces the load on the CPU,” (Grensing-Pohpal, 2011). This will let people load and show this content “natively” in their web browsers. This should make for a simpler, faster, and more secure experience. (What HTML5 Will Change, 2010)

Mobile applications

One of the most important benefits of HTML5 is that it is capable of making the Web useful on mobile devices. This includes those from Android phones, iPhones, iPads, Tablets, and more. WebKit is an application through HTML5 that makes it easy for a web designer to create a website that will adapt to all different types of mobile devices to look great on all screen sizes to help the viewer get the most out of their online experience. Its open-source browser engine, the software component that translates the code of a Web page into what appears on the screen. (What HTML5 Will Change, 2010). Today it is the dominant engine for mobile Web browsing.

When *Apple* launched the iPhone in 2007, it dramatically altered the expectations the public had for the mobile Web. Until then, most smart phones offered only a substandard version of the Web as it appeared on PCs. Apple, however, opted to use the same system that underpinned its desktop Safari browser: WebKit. In 2008 Google adopted WebKit as the basis of its Chrome browser, bringing it to desktops and Android phones. A string of phone makers followed: Nokia, Palm, Samsung, and the maker of the BlackBerry, Research in Motion, have incorporated WebKit browsers into their handsets. (What HTML5 Will Change, 2010)

Coding Structure

HTML5 makes use of a new <article>, <section>, <nav> and <header> tag in the coding that helps with the organization and structure of a webpage. New “tags” in the coding of sites will help them better organize the information they resend to search engines’ automated indexers. That could make search results more relevant for everyone (What HTML5 Will Change, 2010). The use of coding also allows less of a need for image use, since search engines search use text in websites and cannot draw information from images alone.

Animation

The increased development in HTML5 has also caused a development in CSS, with the upcoming CSS3 that works hand-in-hand with HTML5. HTML5 enables rich animated effects for the content through CSS (Cascading Style Sheets). An example of the use of this new CSS is text wrap, giving designers more control over the flow of text in HTML by letting them wrap text around graphics and custom shapes, enabling almost magazine-like layout

design. Another example of these effects is the CSS Shaders, which is based off of *Adobe's* Pixel Bender technology which supports drop shadows and fade in graphics through the coding (Taft 2011).

Canvas

The “canvas” tag is a new feature in HTML5 that allows graphics or other visual images to be rendered programmatically. Animated graphics and other interactive content won't need a plug-in. A new “canvas” tag will let Web designers create graphical elements in HTML (What HTML5 Will Change, 2010). This means that graphics and animations can be based on user interactions or other behaviors (Grensing-Pophal, 2011)

Interaction and Edit ability for Users

The article *What HTML5 Will Change* (2011) talks about how HTML5 will affect the interaction on websites and the edibility it may have for both the creator and user.

Content Editing

“Users will be able to edit text in selected portions of a page. They might jot down notes about what they've viewed, and those notes will appear when they return to the site.”

Drag and Drop

“Dragging and dropping has been the standard way to move files around a computer desktop. Now HTML5 is bringing it to the Web. You could quickly upload a new photo of yourself to a social network.”

Chat

“An application-programming interface associated with HTML5 will let Web Developers set up a simple chat program. That could let their users interact with each other beyond the limits of a comments section.”

Typography and Design

One of the most exciting features of HTML5 is that it allows for more innovation in design through coding. HTML5 enables websites to create advanced graphics and animations and richer typography (What HTML5 Will Change, 2010). This capability also makes websites more appealing on all screen sizes. Webkit enables a new expressiveness using HTML only.

Weaknesses

Although HTML5 may seem like an excellent future alternative to other current applications, there are still issues to consider.

Being new to the World Wide Web, HTML5 may not yet be mature enough to handle the high-end entertainment experiences that other programs currently provide. HTML5 has not yet been fully developed and still has more work to be done before the program is perfected for web use now.

One of the biggest challenges facing HTML5 legacy browser support needed to become a standard for the web design industry. Not all Internet Explorer applications yet

support HTML5, which can be difficult because not everyone may be as up to date with technology or may still be using browsers that are not able to handle HTML5.

Imad Mouline is the CTO of *Gomez, Inc.*, from the web performance division of the Compuware Corp., in Detroit talks about this issue in *eContent Magazine* (Grensing-Pophal, 2011):

The type of apps that are taking advantage of HTML5 tend to be mobile apps,” says Mouline. “The problem with getting to that level on a desktop is that the browser market is very fragmented,” he says. “The specifications haven’t been fully implemented. Browsers that implemented HTML5 may not have implemented all of the same parts.” For developers, it becomes a chicken-and-egg scenario, he says: “Do I develop for HTML5 and hope people will start upgrading their browsers, or do I wait until the browsers have been updated?” One of the reasons adoption in the mobile market has been different, he says, is that people are simply using the built-in browsers that came with their devices.

Because HTML5 is brand new to the industry, and still has some a few things to work out, adoption is going to take some time for everyone to be on the same page. HTML5 still as a long way to go, and will not be able to fix the web overnight.

Another disadvantage is that the new implementation will require innovators to agree on standards that HTML5 will offer. Although browser makers they are agreement on most topics, but they continue to argue about which video standards to support. They have yet to agree on a single codex for the web. As mentioned earlier, one of the main things that

needs to be taken consideration is to make sure that enough people are using Web browsers that can fully handle HTML5.

Will HTML Replace Flash?

Pro Flash

Although many are predicting that Flash will be replaced by the future of HTML5, there are several that do not believe the application will go away any time soon.

One of the reasons that Flash may be around for a while is because Flash is more suited than HTML5 is to logic-heavy enterprise applications, wherever applications use big data sets or complex business logic. An example of this can be browser based gaming, which “is almost always Flash,” even when it is embedded in HTML5 pages. RJ Owen, the senior software architect at Effective UI brings up a good point with an interview with *eWEEK* (Taft, 2012),

Flash is good at the visual layer—Its awesome at that—but if I want to do image processing on a phone, which is already low power, I want to do that in native code and be as efficient as I can. So the ability to divide up the responsibilities between the places where it will run best—that’s amazing.

Although HTML5 may be able to perform several of the tasks that Flash can, the interactivity that Flash can handle might be more practical to be used in applications to help the project to perform more efficiently. Danny Winokur in an post from Adobe (Taft, 2011) supports this idea by stating,

It's not even one or the other. There are a huge number of projects that I can think of where HTML and Flash get combined in a single project. The key message is we're all about giving the content creator or developer the richest toolbox.

Ultimately it seems that what it comes down to is that the use of these tools is more about choosing which is right for you and your situation. The person that decides on what tool to use is based off of the content creator.

Pro HTML5

Many industry leaders predict that HTML5 will in fact be the new standard, and that Adobe Flash will come to its end.

One of the most impactful events that have caused movement towards HTML5 is the lack of support that *Apple* has for Flash applications. The introduction of apples newest product, the iPad tablet, *Apple* continues to support only HTML5. This disability makes it impossible for these devices to see any videos or advertisements that may have been created using Flash. With each of these *Apple* products rapidly growing more popular, the need for a program that will support these devices grows as well (Boeri, 2011). *Apple* has, somewhat counter intuitively, become one of the biggest players on the Web, despite the fact that it has driven the app revolution and holds only a slim share of the browser market (What HTML5 Will Change, 2010). Steve Jobs argument was that flash was a “processor—and an unstable battery hogging standard that caused its devices to perform improperly.” Steve Jobs hoped for the proliferation of HTML5, which performs the same functions but can operate across all platforms (Ozer, 2011).

Adobe saying that Flash on mobile isn't the best path forward (is not equal to) *Adobe* conceding that Flash on mobile (or elsewhere) is bad technology," he wrote. "Its quality is irrelevant if it's not allowed to run, and if it's not allowed to run, then *Adobe* will have to find different ways to meet customers' needs. –Steve Jobs (Smith, 2011)

With this at hand, it is apparent that HTML5 may become an attractive alternative to Flash that does not work on these other mobile devices.

HTML5 has made a large impact on web design is because it enables websites to create advanced graphics, animations, and richer typography. For example, its elegance has already improved the document sharing website *Scribd.com*, one of the most prominent sites to begin using those elements of HTML5 that Web browsers can recognize today. The article *What HTML5 Will Change* (2011) explains how *Scribd's* founders used to fret that the site, which used Flash to display documents, didn't look that great. The things people posted weren't as readable or as easy to manipulate, as they should have been. They appeared in a frame, like "documents in a box," as *Scribd* cofounder Jared Friedman put it. To further explain their experience (*What HTML5 Will Change*, 2010):

Scribd's engineers spent 6 months rebuilding the site. They stopped using Flash to display documents, even though that meant they had to convert tens of millions of files to HTML5. Eventually their exhausting coding marathons paid off. After the renewal, *Scribd's* pages looked crisper because the documents had come out of their boxes. No longer did it seem as if users had to view files through a lens. Readers

began sticking around three times longer, Friedman says. "It was fantastic," he says. "Even we were surprised how good the metrics looked."

Scribd's experience with HTML5 has proven useful and has resulted in excellent results for his purposes.

Some statistics to also support the replacement of Flash by HTML5 come from The HTTP Archive, which collects site data from over thousands of sites all over the Web. This website shows that *Adobe Flash* usage on the Internet's Top 100 websites has dropped from 38% to 34% between November 2010 and July 2012. Doing a Google search for "flash developer jobs" from the past 24 hours turns up 511,000 results; a year ago the same search produced 832,000 results. By the same token, searching for "HTML5 developer jobs" turns up 243,000 results today vs. 116,000 a year ago. (Pachal, 2011)

Chapter Summary

It is apparent that both Flash and HTML5 have made a large impact on the web design industry in Graphic Communication. Both programs have their advantages and disadvantages to web development, as we have seen examples of how companies in the industry have implemented both applications for their own purposes. It appears for now that Flash does not seem to be going anywhere any time soon with the on going development of HTML5. HTML5 still has some work to be done and bugs to be fixed before it is fully executed into the web design industry. To determine if Flash will be replaced by HTML5 in the future of web design, further study and experimentation is required.

Chapter 3

Research Methods and Procedures

To understand the question of whether HTML5 will replace *Adobe Flash* in the future of web design, it is important to understand the user and creators standpoint on which method may be better for our situation. Therefore the purpose of this research was to compare the usability of HTML5 vs. *Adobe Flash* for web design. The procedure that was used to determine the answer of this question involved two experiments. These experiments were conducted on a group of selected subjects who observed different websites, and the a group of selected web designers who designed using both Flash and HTML.

The group to be studied for the first experiment consisted of a group of people varying in the age of 16 to 50. This group of people was those who use computers on a daily basis, but are not necessarily be knowledgeable of the two different programs HTML5 and Flash. In this experiment, the subject was given two lists of websites, the first list of websites created in HTML5, the other created using *Adobe Flash*. These websites were all well designed and involved the use of interactivity through as many ways possible. The subject was then told to choose one website from each list to observe. When viewing the two websites, the subject did not know how each website was created. A list of items for the subject to view on each of the specific webpages was given to them to examine. After examining the two websites for 10 minutes, the subject was given a list of questions (Appendix A). The purpose of these survey questions was to examine the users experience with each of the different websites, and to compare what they may have liked and disliked

about their experience. Subjects were given the opportunity to give open-ended responses and was asked to explain the reason for his or her preference of a specific site. They were then asked to open each website on their mobile phone and answer questions about that experience.

The next phase is to approach the topic through a designer's point of view. This study showed how using HTML5 versus Flash might change how a person is designing for the web. This experiment involved web developers who currently work in the web design industry. These designers were familiar with both Adobe Flash and HTML methods of web design. An interview with a list of questions (Appendix B) pertaining to this topic was asked.

The purpose of this methodology is to approach the subject through a creator's standpoint. The researcher intended to gain insight from these designers through their web designing experience with the two applications. From this point of view the researcher can see which methodology may be best for use in specific situations in web design and how people who use these programs in the real workforce world may feel about them.

Chapter 4

Results and Discussion

After conducting the research methods and procedures that were stated in Chapter 4, the researcher was able to gain some useful insight on the topic from both the user and creators standpoint of the programs Flash and HTML5. Trends in the current web design industry have been identified from these results and the results. This chapter is an analysis of important takeaways from the results gathered from experimentation.

The Designers Point of View

The designer's point of view was reflected through the interview questions located in Appendix A. These questions were given to a group of successful web developers who are currently work in the industry and have experience using both HTML and Flash to build website.

Key factors to creating an effective website

In order to create a successful website, there are many things that a designer must take into consideration. Kevin Luttrell, from NightOwl Studio says that, "first and foremost, it needs to serve a purpose and communicate that message clearly out of the gate. Everything has to communicate; visuals, written copy, UI, UX." Wyeth Styles from Inflight Studio also agreed with Kevin that a website must deliver the message in a clear simple way. Wyeth also listed off a number of factors that take a more technical direction towards

practical design for the web viewer and owner of the website. This included good design, ease of use, expandability (which is the ability to grow or change to accommodate more content and pages), and ease of updating for the client.

Websites for Mobile Devices

Mobile devices are a factor that can be taken into consideration when building websites, but according to Kevin Luttrell the use of mobile devices and tablets do not affect the way he develops websites at his company. He states that developing websites for other devices is not a priority, since most smart phone devices are able to recognize code.

Wyeth describes some interesting points about how these devices may affect the way he designs for the web. “There is an ongoing argument over whether you should build a separate mobile site or build one site that will expand or collapse to different screen sizes. There are many frameworks out there that allow you to build once, and have the site re-size to different screen sizes... but because our clients are so design focused, it can be difficult to do.”

Depending on the situation and purpose of the website, designing for mobile devices may be important, but for these developers at their companies creating a mobile friendly website is not necessarily considered a key priority.

Developing websites using Flash

Wyeth and Kevin are both experienced in developing websites using Adobe Flash, but today use HTML as their primary method of development. Combined with PHP and CSS they use websites such as Drupal or Wordpress to manage their pages to make them easy

for their clients to work with. Although these two designers work with the same programs on a daily basis, their feelings about Flash in web design are slightly contrasting.

With the development of HTML5 still undergoing development Kevin Luttrell discusses why Flash may be advantageous instead of coding with HTML5 in today's web design world. "I like being able to envision something, code it and it simply works. No nonsense about it not working on an old browser or whatever. As long as the plugin is up to date, which is 90% of browsers have, your design works. Plus you have the ability to use Adobe's graphics tools, import Illustrator or Photoshop files, whatever. You simply can't do that with HTML5."

On the other hand, Wyeth Stiles believes that the days of building full-flash web pages are over. Unless a website has a lot of multimedia requirements, creating a website in Flash is not necessary. Wyeth also brings up that because Flash is not supported on many mobile devices, a separate mobile site would need to be developed, which can be cumbersome.

HTML5 Thoughts

HTML5 has proven itself to have a promising future to the interviewees, but because it has not been fully integrated into the web this can cause a problem for web developers who are designing for now. HTML5 is not yet successfully supported by all older browsers. "The challenge is that various browsers see tags differently and that makes coding elements a moving target in "this doesn't work" on browser X. Actually most of this relates to CSS3 but things like being forced to add a laundry list for the right codec for a video tag are infuriating. With flash it may be a plugin but so much easier to place and it works every

time,” is what Kevin’s thoughts about the current status of HTML5. Both Kevin and Wyatt believe that there are still holes in HTML5 that need to be fixed before it is fully integrated, and have decided to stand off but continue learning of its progress until it is further developed.

Will HTML5 Replace Flash in the web design industry?

The difference in opinion between the two interviewees has been apparent throughout the interview process. When asked the specific question of whether HTML5 will replace Flash in the web design industry, both agreed that HTML5 is here to stay, but covered several different important points to think about before completely putting Flash to the side.

Kevin Luttrell states that “Flash is not a web centric technology,” and makes the researcher recognize the other important uses of Adobe Flash aside from web design. “I use Flash for the web but I also use it to make 2D animations and assets that I use in video projects that have nothing to do with the Internet... In addition Flash is becoming an industry standard for creating UI and Menu systems for video games.” For example, Kevin talks about *Framescale*, which is a company that has incorporated Flash into their middleware line for tools for game developers. *Framescale* “gives Flash designers the ability to leverage Flash’s powerful graphics tools and animation capabilities to create designs that are exported into all the major game engines and are used for UI and menu systems.” Kevin then states that HTML5 on the other hand is a web centric technology and has no application or usage beyond web design.

As far as websites go, Wyatt believes that HTML5 will replace flash. Most of what was done in the past can now be done with things like jQuery and CSS3, which come hand

in hand with HTML5. “Adobe is creating tools like *Edge*, which allows you to make timeline based animations in HTML5. That is a strong indication that people are moving away from flash. They also have a new module in Flash 6 that allows you to export flash libraries and layouts as HTML5.” With the increase of people using mobile devices for the web, and the fact that Flash does not work on all sized devices is a large setback for its place in web design.

Summary

Wyeth and Kevin both had very interesting insight through their interviews. Although each of them differed in opinion through several of their responses, both agreed that Flash was losing its place in the web design industry. The need for further development and support in HTML5 is shown to be a large factor in the growth of usage for HTML5, but both agree that once it is completed it may replace Flash made websites due to the fact that it is not supported by the growing mobile world.

The Users Point Of View

The second half of the researchers experimentation process involved the surveying of a few selected people who vary in knowledge and personal preference when it comes to web design. Of the following categories, here is their reaction to a few of the most relevant categories to the research being done on the topic. Through this experiment we are able to see how HTML5 versus Adobe Flash built websites may have affected their reaction.

Loading Speed

One of the most relevant takeaways from this survey was how the interviewee's felt about the loading speed time for each of the pages they were assigned to. Results were very consistent for this category. Out of the HTML5 websites, each person stated that their website loaded quickly, and that they did not face any issues. As for the list of Flash websites, everyone seemed to have a problem with loading speed, whether it be with opening the website, or browsing through it from page-to-page or image-to-image. One of the people surveyed even quoted for one of the websites they observed, "I would have clicked away immediately if it wasn't for this survey." As most of the interviewee's complained significantly about this topic, it appears that loading speed is a large priority to web users.

Navigation & Design

Navigation and the ability to browse through a website is very important to a person viewing it while trying to find significant information. Because there are so many options of styles on how navigation can be presented, it was harder to analyze the results from the interviewee's perspective, which is why the researcher has chosen to combine the two categories.

The takeaway's from this category of the experiment was the importance of design and navigation for a user. The user searches for ease and simplicity and appreciates good design using good color palettes and readable fonts. Convenience appears to be key for navigation, as websites with more complex difficult to find navigation were more disliked. The researchers results found that design and navigation depend purely on the designer and how they approach the website rather than the programs that they use to put it

together. The researcher also recognized the fact that every individual has a different taste and preference for design from the variation of results in this category.

Interactivity

Each of the websites had a variation of interactivity and animation in each of them. The Flash made websites tended to have more intense animations with sound effects and moving objects throughout the page. Typically the reason that people design in Flash is to have the ability to use these animations, so the websites that the researcher chose for the experiment were heavy in interactivity, but still well designed. HTML5 on the other hand is still capable of a lot of the interactivity that is allowed in Flash, but the researcher found it harder to find HTML5 practical websites that have been built using animation heavily.

Perhaps this is an observation that can tell us the trends in web design that designers and users prefer. HTML5 is a more recent development, and the designers that design with it tend to use animations more subtly despite the fact that it is capable. Many of these Flash made websites showcased the interactivity they were capable of. From the websites given, most of the interviewee's commented on the interactivity on the Flash websites stating that the sound effects may have been "too much" and "lots of spinning", or that the animations "gave (them) a headache". Although most responded with that same response, a couple few of the interviewee's appreciated the fact that the Flash interactive websites were non traditional and found the animations and sounds entertaining.

Mobile Capability

Mobile use was also one of the questions where the results were very consistent, and HTML5 did have the strong hand in this situation. One of the first things to note is that not all mobile devices support Flash. For those who did not have a phone that supported flash, the website turned into plain text, and the design was completely dismantled, making the website almost completely unusable. Out of the people that were interviewed, there was a select few who were able to view the Flash website on their phone in and see it in the exact same design that was on the web. Although the website remained unchanged on their smartphone, it was obviously not designed to be used on a mobile device and not controllable. Each of the Flash websites were considered unusable.

The HTML5 websites on the other hand did work on the mobile phones successfully. Some designers failed to make their websites mobile friendly which was noted by the interviewees, but those who did were noticed and applauded for convenience. Others made the appropriate changes to make their website completely mobile friendly as in the interface and design were changed for the use on a mobile phone rather than a computer screen. The use of bigger buttons and a simpler interface is what helped make the website more mobile friendly.

Each of the interviewees were asked “How important is it to you that a website be mobile friendly, and why?” On a scale from 1-10, with 10 being the highest, the interviewees rated the importance from a level of 6 to 10, mostly in the higher range. Here is an answer from Alyssa Chow, a 22 year old and what her thoughts were about the topic.

Due to the heightened accessibility of smart phones, I believe that it is imperative that companies invest in R&D to extend their websites so that they are user-friendly

on mobile phones. Especially with the current techno-generation that we are, I think that people are beginning to scrutinize the layouts and accessibility of websites on their phones to a greater degree because of the many mobile-friendly websites that are in existence already. For instance, if you had the choice to shop online, you would be much more likely to view a website that is mobile friendly than one that is not because the efficiency of the time you spend on your mobile device makes it more desirable to use the mobile friendly website. For the sake of business, it would be prudent of companies to recognize that the mobile-friendliness of their websites could be a big factor in their continued—or discontinued—success.

Many of the other people who were asked the same question responded in the same fashion, stating that “I use my smart phone more than my laptop and it definitely helps having a website that is mobile friendly.” Many others noted the fact that mobile phones and devices have become more prevalent in society today, and with so many people using smartphones now it is important that websites be geared towards these mobile users in order to be successful.

Summary

Through the users point of view the researcher was able to identify several of the trends in web design that users expect. Comparing each of the different types of websites it was apparent that slow loading speed was not acceptable, interactivity and good design is expected, and that being able to use the internet on a mobile device is very important. The researcher is able to draw the conclusions from these results that HTML5 was the users pick for this survey.

Chapter 5

Conclusions

Technology is constantly changing, that is a given fact. What is overlooked is that technology in all forms is changing, and for this research, each of these changes affect one another. Reliance on the web is increasing for all needs, and the technology we use the web on is growing rapidly in both software and hardware. The sizes of our screens have become smaller, and the coding has grown more complex. What comes with this growth is more options. Everything we want can be fulfilled with a few lines of code. Convenience is literally at our fingertips and we are able to control the web through the mobile devices that we carry on a regular basis.

HTML5 is a recent development from the past few years that is still being developed to turn into a new industry standard of creating websites. This code has the power to create interactive websites in a simpler manner, and perform much more tasks than its previous version was capable of. The question to be answered through this research was to determine whether the capability of HTML5 would eventually replace these programs that complete these tasks currently (aside from HTML4 which is assumed), this being *Adobe Flash*.

After conducting research and gathering data from experimentation, the researcher has found information to answer the preceding question, but not in a yes or no fashion.

It is evident that society today simply expects more. With new technologies constantly coming out, society automatically expects a few givens. Fast is never fast enough, convenience is a must because we already have so much done for society by technology

already, and good design is what society judges each other by. HTML5 has helped the web design industry fulfill these needs and expectations. HTML5 provides ease of use for the designer with its simple tags. It provides the option to perform interactivity and good design through purely code causing pages to load faster. The code is also recognized by mobile devices and can be adjusted to fit any size screen in a graphically pleasing manner. All of which can be performed without an external plug in. On the other hand, Adobe Flash has been performing these tasks for the web for the past several years. It has provided a place to web designers to be able to be more innovative and bring the web to life through animation and interactivity.

Through research we have found that both methods of designing for the web have their downsides. HTML5 has not been completely developed and found support in all browsers is a problem for those who are not up to date with the latest Internet browsers. Mobile devices do not support Flash so this is a problem for mobile users who view websites on the web.

Flash has shown its capability in the web design industry and years ago opened a new light to web design and offered a new way of looking at the web. With the recent development of HTML5, Flash has begun to lose relevance in this particular industry. HTML5 is still in the process of development, and there still being years before it is fully accepted through all browsers or those who use older browsers update themselves, so it will not be able to completely replace Flash any time soon. Flash plugins are still being used and are on every computer to aid viewers. What may make Flash begin to decline and slowly lose support today in the web design industry is its lack of support for mobile devices because of how many people rely on the mobile web.

HTML5 has proven that it can perform a lot of what Flash was made to do for the web design industry, so perhaps yes, maybe one day HTML5 might replace Flash in the web design world. This would be only when HTML5 has been completely successfully developed and implemented into every web browser being used. Keep in mind that all though Flash may be disappearing for the web, it will surely not disappear from the world. Flash has many other purposes outside of web design including animation and video game design, and will be continued to be used in these other industries.

Appendix A

List #1	List #2
http://zhc.com.au/ http://www.blacktie.es/ http://doubleleft.com/ http://www.wildrhodyseafood.com/	http://www.fogliaumberto.it/#/splash/ http://www.trendypix.com/ http://hrnetworking.be/ http://www.insightopticians.co.uk/#/aboutus/

Please pick one website from each list above.

Which websites did you pick?

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Take a moment to browse through the two websites that you chose.

Do not be concerned with the content or company of the website, the purpose of this survey is for you to look around and get a feel for the interactivity, and design of the website. Please answer the following questions below pertaining to each.

Explain your experience with the following categories. Please be specific on your experience.	
Navigation	
Loading Speed	
Design	
Interactivity	
Other notes?	

Which website did you prefer, and why?

What are some things that you liked about these websites?

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What are some things that you didn't like about these websites?

--	--

Please open each of the websites on your mobile phone.

Did the websites appear any differently? List some observations

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Does it interfere with your usability?

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On a scale of 1-10 (1 being the least important) how important is it to you that a website be mobile friendly? And why?

Appendix B

1. How long have you worked in the web design industry?
2. What type of customers or companies do you design for?
3. What method and programs do you primarily use to build the websites you design?

Please be specific

4. What are the benefits of your primary method of web developing?
5. What are some obstacles that you might face using this method?
6. What do you think are some key factors to creating an effective website?
7. How do mobile devices or tablets affect the way you develop your website?
8. Do you have experience using HTML5? What are your thoughts about HTML5?
9. How do mobile devices or tablets affect the way you develop your website?
10. Do you have experience using HTML5? What are your thoughts about HTML5?
11. Do you have experience developing websites using Flash? Thoughts?
12. Do you believe that HTML5 may someday replace Flash in the web design industry?

Why or why not?

Interviewee's:

Kevin Black – Couto Solutions, *Web Developer*

Wyeth Stiles – Inflight Studio, *Interactive Producer*

Kevin Luttrell – NiteOwl Studio, *Owner*

References

Boeri, R. (2011, December). Will HTML5 Edge Out Flash?. *Econtent*, 34(10), 39.

Grensing-Pophal, L. (2011). HTML5. *Econtent*, 34(2), 10-12

Jobs, S. (2010). Thoughts on Flash (Apple website). Retrieved from

<http://www.apple.com/hotnews/thoughts-on-flash/>

Mark W., S., & USA, T. (2011). Adobe ends development of Flash for mobile devices.

USA Today.

Moren, D. (2012). Adobe Cans Mobile Flash. *Macworld*. 29(2), 26.

Ozer, J. (2010). Here comes HTML5—Should we care?. *Eventdv*, 23(4), 48.

Pachal, P. (2011). Does Adobe Edge Signal the End of Flash?. *PC Magazine*, 30(9), 1-15.

Schiller, S. (2012). Is Flash Dead Yet? (Website). Retrieved from <http://isflashdeadyet.com/>

Taft, D. K. (2011). Adobe Commits to both Flash and HTML5. *Eweek*, 28(17), 16-18.

What HTML5 Will Change. (2010). *Technology Review*, 113(6), 51-53