Flash media as a tool for advertisement

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ABSTRACT

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ABSTRACT

This thesis is the literary part of a project commissioned by the Professional Teacher Education Unit of HAMK. This commission came out of an idea of utilizing Adobe Flash in advertising for student recruitment purposes. Along with the literary part a practical part was also carried out, which is briefly discussed in the introduction.

The purpose of this thesis was to compile a comprehensive summary on Flash based advertising including such details as technical, professional, software and financial requirements and overall benefits in comparison to other similar media available, mainly HTML 5. The thesis aimed to answer the following questions: What does setting up Adobe Flash based marketing require? Is Adobe Flash a desirable media technology for marketing? How has HTML5 influenced Adobe Flash? How to utilize Adobe Flash effectively?

As an answer for the research questions this thesis gives a clear reference for Adobe Flash based advertisement and marketing, This result means that by reading this thesis one will get a clear picture of the requirements of Adobe Flash based marketing and how said technology should be used effectively.

The research model for this thesis was development research, based on documentation in form of published literature and digital online sources as well as theme interviews with notable Finnish media firms.

It was concluded that Adobe Flash is still the most cost effective and most widely used method of online advertising and as such the most viable option. The results also show that HTML5 has influenced Adobe Flash based production mostly on the mobile platforms so far, because of mobile producers favoring the shared HTML5 standard over a specialized 3rd party technology like Adobe Flash.

Keywords Adobe, Flash, HTML5

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TIIVISTELMÄ

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TIIVISTELMÄ

Tämä opinnäytetyö on Hämeen ammattikorkeakouluun kuuluvan ammatillisen opettajakorkeakoulun toimeksiantaman projektin kirjallinen osa. Toimeksianto tuli ideasta käyttää Adobe Flashia mainonnassa uusien oppilaiden rekrytoimiseksi. Kirjallisen osan yhteydessä toteutettiin myös käytännön osa, jonka luonnetta käsitellään lyhyesti esittelyssä.

Opinnäytetyön keskeisin tarkoitus on laatia kattava kooste Adobe Flash pohjaisesta mainonnasta sisältäen sellaiset yksityiskohdat kuin tekniset, ammatilliset, ohjelmistolliset ja rahalliset vaatimukset sekä ilmeisimmät edut verrattaessa muihin saatavilla oleviin vastaaviin medioihin, kuten HTML 5:een. Opinnäytetyössä pyrittiin vastaamaan seuraaviin kysymyksiin: Mitä Adobe Flash-pohjaisen markkinoinnin pystyttäminen ja tehokas käyttö edellyttää? Onko Adobe Flash haluttava mediateknologia markkinoinnin välineeksi? Kuinka HTML5 on vaikuttanut Adobe Flashiin? Kuinka Adobe Flashia tulisi käyttää tehokkaasti?

Tuloksena opinnäytetyö antaa selkeän suosituksen Adobe Flash-pohjaiselle mainonnalle ja markkinoinnille. Tämä tulos tarkoittaa, että opinnäytetyön lukemalla saa selkeän kuvan Adobe Flash -pohjaisen mainonnan vaatimuksista ja siitä, miten kyseistä tekniikkaa tulisi käyttää tehokkaasti.

Opinnäytetyössä käytetty tutkimusmenetelmä oli kehittämisprojekti, joka pohjautui kirjallisiin ja digitaalisiin online-lähteisiin sekä huomattavien suomalaisten mediayritysten kanssa käytyihin teemahaastatteluihin.

Lopussa johdettiin päätelmä, että Adobe Flash on edelleen hinta-hyöty-suhteeltaan paras ja eniten käytetty Internet-mainonnan keino ja sellaisenaan kaikista kannattavin vaihtoehto. Tulokset näyttävät myös, että HTML5 on vaikuttanut Adobe Flash -pohjaiseen tuotantoon tähän asti lähinnä mobiilialustoilla, koska mobiilivalmistajat suosivat kaikille yhteistä HTML5-standardia yli erikoistuneen kolmannen osapuolen teknologian, kuten Adobe Flash.

Avainsanat Adobe, Flash, HTML5

Sivut 28 s. + liitteet 1 s.

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Appendix 1 Interview Questions

1 INTRODUCTION

This thesis was commissioned by the Professional Teacher Education Unit of HAMK University of Applied Sciences (later HAMK) for the need of information and guidelines concerning the possibility of using Adobe Flash as a tool for advertising the unit and recruiting new students online.

In the commission a practical part was also included. It consisted of planning and drafting a working prototype of an interactive Adobe Flash based banner that could potentially be used on the commissioner's website. Along with the prototype, the commissioner wished for a kind of a mascot for their organisation to be designed and included in the graphical content. This thesis does not however document the prototype, but is instead a continuation of that project with the goal of finding out whether Adobe Flash is still a competitive, viable and overall desirable option for online marketing. In addition this thesis aims to gather a comprehensive summary detailing how Adobe Flash is most effectively utilized and what is required for functioning, well established Adobe Flash based online marketing.

The first chapters of this thesis will introduce Adobe Flash technology including its requirements, features, weaknesses, limitations, a brief history and software. The following chapters deal with media marketing as a whole, as Adobe Flash as a technology and its effectiveness as a marketing medium rely heavily on external services provided online. Included in these chapters are also the key concepts of marketing that give a sense how Adobe Flash should be utilized properly. The chapters following media marketing detail the major competing technology HTML5 along with all the relevant details. The following chapters introduce interviews made with four Finnish media firms and discuss and analyze the results in comparison with the base theory of the thesis. Finally, in the final chapters conclusions based on the gathered information are drawn and the most important points of the thesis are summarized.

The research model that was used was development research. Information handled in this thesis is based on literary and digital sources as well as theme interviews with notable media firms. This information was then tied together and analyzed in the light of personal experience and education.

2 DIGITAL ADVERTISEMENT

There are numerous different options for anyone wanting to do some advertising, varying from sign plates worn while walking around town to radio adverts, television commercials, posters and many more. Digital advertisement, however, is separate from other forms by the use of electronics and digital formats or transmission. Anything that is video, graphic, sound or simulation can be considered digital media and as such an environment for digital advertisement (What are the different types of digital media? n.d.)

2.1 Forms of Digital Advertisement

Notable forms of digital advertisement are television and digital radio, which are both self-explanatory. Another major form is email, which can be textual or graphical in a form of a designed newsletter. Videos can be used as advertisement especially online through services like YouTube on their site or embedded on a different website. Mobile platforms have media custom-made for them, mainly banners that favour different formats than the same media for personal computers. Websites often contain advertisements in forms of images or interactive banners. However, websites themselves can be made adverts. Then there are digital noticeboard and ticker displays that can be programmed to show text or graphical content. These can often be seen near high traffic areas like highways. (Baudains 2013.)

2.2 Benefits and Drawbacks

Different media are designed to catch as much attention as possible but by different means. While the television still remains the most effective means for advertisement as it reaches the largest number of people with very few limitations with what can be shown, it's highly expensive and cost effectiveness is not guaranteed (Estes 2011). Radio is also very effective in reaching people although much less so than the television and it is much less costly than television. However, it suffers from being limited only to audio content, which in turn makes standing out from the other content much more challenging when the audience cannot be engaged by other means such as graphics.

Email advertisements, while free of charge, require the recipient to have allowed for direct advertisement, which is otherwise prohibited by law. This is the same as with mobile platforms. It is illegal to send advertisements to anyone's mobile phone without them consenting to it. For this reason most advertising that happens through the mobile devices is Internet content, excluding advertisement through phone calls which are considered an allowed form of direct marketing. (Hyvä tietää 2006.)

Most advertisement through mobile devices online are banner adverts. Their effectiveness relies entirely on the method of distribution. Banners can be embedded on a website, but traffic on a single website varies greatly and is dependent on the popularity of the site. The more popular the site is, the more expensive the ad space, too. (Harris n.d.)

Localized forms of digital advertisements like digital noticeboards suffer from cost effectiveness, as the more trafficked the location, the more expensive the ad space and with no guarantees to the effectiveness of the advertisement. This basically means that if the advert is good, it will thrive in a highly trafficked location and if it's unattractive it will most likely end up costing the advertiser.

Graphic based interactivity in the Internet environment is most commonly attributed with Adobe Flash, the first technology to effectively allow for an efficient and easy interactivity in the Internet.

3 ADOBE FLASH

Adobe Flash is a multimedia format for primarily computer and some mobile platforms that allows for the use of picture, text, audio, video, commands and user interaction. Flash was originally created by Macromedia aided by technology gained through a merger with FutureWave Technology. Macromedia continued the development of FutureWave's vector drawing program FutureSplash Animator but renamed it Flash by combining "future" and "splash" simplifying the name. Adobe System purchased Macromedia in 2005 after which the technology has been known as Adobe Flash (later Flash). (Aaron 2008.)

Flash is primarily designed for the online environment and on the Internet it can be seen most often in forms of banner adverts on just about any website with a decent traffic, or as Flash video like YouTube. Many interactive and intuitive user interfaces on websites or even on some home appliances are often Flash based. Entire TV-shows, movies and games can be and have been made with Flash. Flash also offers powerful and versatile tools for creating presentations.

On a technical level any Flash anywhere is a .swf, or shockwave Flash, format file. The .swf is categorized as a vector graphic animation format. This file is played by a web browser that has a compatible version of Flash Player installed. Most web browsers support Flash through an installable plugin offered freely by Adobe. (SWF File Format Specification Version 19, 2012.)

3.1 Benefits of Flash

As outlined by Hardawar (2010) before Flash came out all the web pages on the Internet were much more static in nature. They lacked dynamic, animation and user interaction. It was based solely on the laws set by the HTML standard and a few clunky technologies still in their infancy like Java applets. HTML in itself only allowed for images, text and links for content. There was very little animation and most of it was based on formats like .gif images. Most user interaction and dynamics were based on moving between web pages via links.

Flash was the first technology to successfully change this. It could be implemented within the rules of HTML but allowed for much greater freedom in presentation that was not possible with HTML alone. It brought the use of live animation, use of audio content, a way to display content dynamically without having to change web pages. It made possible to create games that could be played on the web browser and it became possible to display content with fonts that needed not to be installed on the

viewer's computer, freeing the website designers from the grip of having to use the few suitable fonts installed on all computers by default.

With Flash it is possible to enrich the content of one's webpage by using as subtle or as extravagant display of graphics, animation, audio and user interaction as the imagination allows. With the Flash environment the content within is not tied to code, its placement isn't limited and interactivity isn't constricted. (Hardawar 2010.)

Flash authoring tools present a wide variety of easy-to-use tools for creating graphics and animation, creating, importing and exporting video clips and images, creation of vector or raster graphics, adding and editing text as desired and everything without having to have any knowledge of scripting or programming. However, if desired Flash contains very powerful scripting possibilities via ActionScript 3.0 for the creation of games, graphical user interfaces, presentations or any kind of user interaction or control desired.

Flash also allows for stand-alone videos that run with an embedded Flash-player. These video files can be played without the need for a web browser or other players and they can be handled otherwise like normal video files, burned on CDs or DVDs, for example.

3.2 Drawbacks of Flash

While Flash is a powerful tool for displaying or enriching content, its major drawbacks come from the fact that content within the .swf file that Flash cannot be read by search engines like Google. Some progress has been made on that front, but the problem has never been fully overcome. This essentially means that while a Flash presentation on a website might contain large amounts of information relevant to a person interests, he won't be able to find it easily via search engines. (Fishkin 2008.)

Another large disadvantage is that while a normal web page can be opened simply with a text editor such as the notepad that comes with windows and its text, image and link content can be changed just by editing text in the file, Flash content must always be opened in a suitable, dedicated authoring tool. Even then the .swf file shown on a webpage cannot be opened and edited as such, but to alter the presentation one needs to have the original Flash project file or .fla file for short. Updating the content itself in this environment is always somewhat laborious if compared to editing a normal webpage and its content.

It cannot be disregarded either that Flash in order to work always requires a plugin to be installed in every browser available. No browser ever comes with an inbuilt support for Flash. Although this is the case, it is estimated that 98% of all desktop users have a Flash player installed on their systems. This is assumed to be much due to YouTube, the largest host of video content on the web, using Flash video as their display medium. (Adobe Flash Player 10.1 Administration Guide 2010.)

Flash has been widely used on mobile platforms too, but its use is no longer viable nor in many cases possible. The popularity of Flash on mobile platforms decreased when Apple introduced the iPhone which by design did not support Flash. This trend continued with their tablet products. Also, at the same time Nokia started their cooperation with Microsoft and their windows phone regardless of much interest does not support Flash. Finally, Adobe stated the end of mobile Flash development in the late 2011 and informed that their new focus will be mobile apps via Adobe AIR and HTML5 via Adobe Edge mainly because of the universal support for it, circumventing the issues with different manufacturers. (Winokur 2011.)

There are also other less severe drawbacks. Browsers usually provide the option to translate a page if it contains text in a foreign language. In case of Flash textual content cannot be translated by browsers because the browsers similarly to search engines cannot "see" the content inside an .swf file the same way they can see text inside an HTML file. Another issue is printing out information. Flash is a presentation tied to the encoded .swf file. Printing it without the specific option set inside the Flash presentation often becomes problematic for the average user.

3.3 Requirements for setting up Flash Based Advertising

Depending on the type and scale of desired advertising scheme, setting up Flash based advertising is either very simple or somewhat complicated. Distribution and implementation itself is simple. The difficulty of design varies by scale and complexity. Simple Flash banners do not require much technical knowledge, rather the basics of a Flash production with an authoring tool such as Adobe Flash Professional or a third party free counterpart like Ajax Animator. A more complete list can be found in the Software section.

A simple Flash banner needs does not necessarily need to be even animated in which case creating a Flash banner is only a matter of having an artistic eye, using any image or drawing tools available for the digital environment. Flash Professional allows for importing of images, so it is entirely possible to draft a Flash banner in a more familiar environment, like Photoshop and then import the image in to Flash Professional and save it as a .swf Flash file.

Animation requires a slightly more in-depth knowledge of the Flash development environment, the timeline to be more precise. This still does not require more than the basic understanding how the timeline works, but does involve very few basic ActionScript functions.

If the planner Flash advertisement is designed to have interaction opportunities, then this will involve more ActionScript. Things like game applications that make use of mouse tracking and keyboard controls require heavy levels of ActionScript knowledge compared to something like controlling whether audio is enabled or disabled via a clickable icon.

The simplest form of Flash advertisement is through the advertisement services provided by Google Inc. that allow for a very powerful and customizable coverage of your target audience on the Internet. These services are described in more detail further in chapter 4.4. If the restrictions posed by Google Inc. are not suitable, another option is setting the Flash advertisement on your own website. This way there are no limits to what can be shown and how, within the boundaries of legislation. Legislation will be discussed in chapter 4.1.

Flash does not require any extra backend server side applications. Content is displayed to audience as long as they have an up-to-date Flash plug-in installed in their browser. If this is not the case, the browser will immediately inform the user about not being able to display the Flash content on the page and suggests installing the latest Flash plug-in.

If the production of the advertisement is outsourced to third parties, refer to the financial requirements section for cost estimates. While these media firms most often create the advertisement, the actual implementation online is left to the client. See section 4.4 services provided by Google Inc. for further details about how to put your advert to work. See chapter 3.5 for a list of authoring tools related to Flash production if Flash production is planned in-house.

3.4 ActionScript

ActionScript is the name of the scripting language used to control elements in Flash. ActionScript has three distinct versions that are supported by different versions of the Adobe Flash Player. These are from the oldest to the newest: ActionScript, ActionScript 2.0 and ActionScript 3.0. ActionScript can be compiled on all Flash Players from version 5 onwards. ActionScript 2.0 can be compiled from version 7 onwards and finally ActionScript 3.0 can be compiled from version 9 onwards. (Flash Player Version History n.d.)

While the development software for Flash allows for manipulation of graphical elements via a graphical user interface, ActionScript allows for a greater freedom and creativity.

3.4.1 History

As stated in the article A Brief History of ActionScript Flash, Flash Player 2 was the first version to add some scripting functionality to Flash. Initially it only contained a very few commands to achieve some very basic functionality relating to controlling the timeline. Flash Player 3 expanded on this by adding a little more relating to loading external swf movies. Flash Player 4 was the first large scale addition to the scripting scene with full support for the basic programming functionality including such examples as conditionals, loops and variables. This basic scripting language was called Actions.

ActionScript bearing its name was introduced first along with Flash Player 5. This release made it a full-fledged scripting language. It was designed as a prototype-based language taking after the ECMAScript that is a standardized scripting language following the ECMA-262 standard.

Flash Player 6 added some more functionality to ActionScript, mainly an event based system that allows the script to react to certain events that happen during run-time of the script. Examples of such could be mouse entering an element, mouse clicking on an element, button being pressed on the keyboard and so on. Other additions also included the support for switch which is a command type that allows for a value of a variable to control the flow of the script during run-time.

With Flash Player 7 came the first large revision of ActionScript. It was so fundamental in its changes that they named it ActionScript 2.0. The major changes it came with included the addition of a class based approach to scripting familiar from the more widely used programming languages such as Java. This allowed for a more object oriented approach to scripting through inheritance. ActionScript 2.0 was however, only a new layer of functionality built atop ActionScript 1.0 it was even run on the same virtual machine that interpreted the script in to byte code.

While Flash Player 8 did not add much else than bitmap data manipulation during run-time relating to ActionScript, Flash Player 9 introduced the current version titled ActionScript 3.0. This revision of the language changed it to the more modern approach of object oriented programming. This fundamental change also required the implementation of a totally new virtual machine titles the ActionScript Virtual Machine 2 (AVM2). AVM1 was not however discarded, meaning Flash Player 9 would still compile earlier versions of ActionScript. (A Brief History of ActionScript Flash 2012.)

3.4.2 ActionScript Features

ActionScript 2.0 is the older version of ActionScript, while still in use it is widely replaced by ActionScript 3.0. The main difference between these two versions is that AS 3.0 is much more focused on object oriented programming, meaning it is possible to utilize the code much more efficiently, creating libraries of functionality instead of having to write entire scripts from the beginning to suit the current requirement at hand. (The Features of ActionScript 2.0 and ActionScript 3.0.)

In Flash all visual elements are considered entities or rather items with specific identifying names or tags. These IDs are then used to refer to the elements from the AS-code. The elements also always belong to a parent-child relationship with other entities which is referred to as the display list. The stage is always the topmost parent and the start of the display list. Any and all elements that are intended to be displayed must then be added as children to the stage and thus appear below the stage in the display list. If an element does not belong to the display list it does not get displayed. (Robertson 2010.)

3.5 Software

There are many different software options to choose from for developing Flash and ActionScript content. Most are free, but the most powerful ones are licensed and fairly costly. Software, or otherwise known as authoring or development tools are used to create content with the inbuilt tools and graphical user interface. Code based software can help point out syntax errors in the code while different graphical authoring tools help with drawing and animation. Free software most often suffer from lack of dedication from the developers often resulting in the software being outdated and obsolete hence making licensed tools worthwhile for professional, long-term users.

3.5.1 Free tools

In the following are listed some of the more notable free authoring tools used for compiling Flash and ActionScript.

- FlashDevelop is an open source code editing tool, compiles ActionScript 3.0. Works on Windows XP, Windows Vista and Windows 7.

- OpenLaszlo is an open source application development tool that can export .swf files.

- Ajax Animator is a free drawing and animation tool but has no code support. Does not require a download nor install as it is run in a browser.

- Wonderfl is an online code editor and compiler. It shows code and compiled product simultaneously side by side.

- Tofino and Amethyst are Visual Studio plugins for ActionScript support the Visual Studio environment. It allows for .swf export.

3.5.2 Licensed tools

In the following are listed the most notable licenced authoring tools used for compiling Flash and ActionScript.

- Adobe Flash Professional CS3-6 is the original and most powerful Flash authoring tool available. Primary focus is on Flash animation and presentation creation and control.

- Adobe Flash Builder is the most powerful code authoring tool with the primary focus on application creation.

- Adobe Flash Catalyst is a program designed to fill the gap between UI designers and logic writers. This tool allows for creation and simulation of interactive user interfaces.

– SWiSH is a third party licensed Flash animation tool. It comes with stocks of premade multimedia effects, components and vector shapes.

4 MEDIA MARKETING

Media is a broad term that encompasses all forms of communication that are used to reach a large audience, also known as mass media. This includes everything from mobile phones to newspapers, the television and radio, to the Internet. Marketing Itself is the publication and or advertisement of anything, with the intention of drawing interest and attention from the target audience. Media marketing is the combination of the two, where marketing happens through media of choice. Media marketing is a broad area of study, with many different areas of interest that must be considered, such as legal, cultural, psychological, practical and technological. Rarely can one person be an expert in everything when it comes to media marketing, but the following chapters will aim to give a solid presentation of the main points of interest.

4.1 Legislation

This section deals with relevant legislation that should be noted when designing marketing for the online environment as set in Finlex by the Ministry of Justice of Finland. Information discussed here is shared by both Flash and HTML5 based marketing. This information is based on the Finnish legislation and should be considered applicable only in Finland.

There is no special legislation concerning online marketing in Finland so it then falls in with the Consumer Protection Act 38/1978 that deals with all marketing in Finland. The most relevant clauses from the perspective of Flash and HTML 5 themselves are clauses 1 through 6, 9, 11, 16, 17 and 19 §.

Marketing cannot be inappropriate or against a good manner as described in clause 1. It is further specified by clause 2 detailing that marketing can be considered against good manner if it clearly conflicts with generally accepted social values. It cannot contain anything that degrades or insults human value or religious or political standing. Also any discrimination against sex, age, ethnic, national or cultural background, citizenship, language, medical condition, handicap, sexual orientation or other such is considered against good manner. The same applies if marketing condones the endangering of health, public safety or the environment without proper justification relating to the marketed goods. Finally, any marketing targeted at the underage audience is considered against good manner if it abuses minors' inexperience or gullibility, if it's able to harmfully influence the healthy and stable growth of minors or if it aims to undermine the parents' authority to act fully as their children's up bringers.

Clause 3 specifies when conduct can be considered inappropriate. The conduct can be considered inappropriate if it goes against the usual appropriate manner of conduct of business. Also, if it it's able to clearly hinder

the consumer's ability to form a justified decision of purchase or any other decision relating to a consumer product that leads in the consumer making a decision he would not have otherwise made. Furthermore, conduct is especially inappropriate in cases where it goes against clauses 4-14. This means that conduct is always inappropriate if it doesn't follow legislation.

Marketing has to be recognizable in a way that its commercial purpose is not left unclear as detailed by clause 4. Clause 5 states that there can be no danger of mixing of businesses, labels or brands in such a way that the consumer makes a decision of purchase he would not have made without such marketing. Clause 6 details that marketing cannot give false or misleading information if it's possible that the consumer makes a decision of purchase based on this information. Clause 9 prohibits any use of aggressive conduct. This includes any forms of disturbance, forcing and any such pressing that could influence the decision of purchase. Clause 11 details that any sales or price reductions portrayed in adverts or otherwise stated must be factually stated in relation to the original price.

Clauses 16, 17 ad 19 detail that a ban or an official order of correction can be issued to correct, remove or prohibit any marketing that goes against any clauses of the consumer protection act. This is usually enforced with a fine if not otherwise stated unnecessary due to special circumstances. (Kuluttajansuojalaki 1978)

4.2 Mental Image Marketing and its Importance

Rope and Mether (2001) describe mental image marketing as a concept where the purpose of marketing is to influence the minds of the target audience by creating a certain type of a mental scheme related to the organisation, brand or product being marketed. The desired effect is that the target audience comes to think of the marketed item or brand as a more desirable option compared to its alternatives.

All markets today tend to have competition. Today's markets are saturated with similar products marketed and produced by hundreds of companies all over the world. Yet some products always stand above their fellow products. When you think of sodas, you think of Coca-Cola. When you think of fast food you think of McDonalds. Coca-Cola is only one of a broad selection of sodas as McDonalds is only one provider of fast food. There are literally hundreds of choices available, yet these are the most known and most consumed. One could argue it is because their beverages or hamburgers stand above all others, but anyone can immediately discard that thought. There are other companies that produce sodas that taste better and cost less, as there are burgers that are a lot bigger and a lot tastier at a lower cost. Why does Coca-Cola and McDonalds stand above the ones that have a product even better than theirs? The answer is mental image marketing.

These companies stand above all other companies because they have a wide, well-known corporate and product image. Their quality is widely accepted and popularity globally known. They market themselves as tradi-

tional and associate themselves with positive feelings. Coca-Cola advertises itself with Christmas and Santa-Claus while McDonalds advertises itself with smiling families in their restaurants and has a clown as the company idol. No matter what the product or service, mental image marketing is and should always be considered just as important as the design of the product or service itself. A well marketed product creates a positive mental image and the stronger the image the more likely the target audience is to become customers. The stronger the positive image, the larger the sales. Finally, not only is a better marketed item sold more over its competitors even if the technical specifications are close to identical with each other, but the mental image of quality also affects the price range possible for the product. Toilet papers are a good example of this. All the products are close to identical so most competition happens not in product design but in marketing. Still some toilet papers are noticeably more expensive than others but it has little to do with the production cost of the paper itself. (Rope & Mether 2001.)

4.2.1 Creating Impressions Through Suggestion

Disposition, feelings and beliefs are all abstracts influenced by emotional factors, while the elements supposedly based on facts like experience, can be influenced by one's values. Knowledge, on the other hand is based on information that might or might not be true. Thus, it can be determined that the mental image as a concept is subjective. This is what makes it an easy thing to exploit and even abuse in marketing knowing that it is not as important how things really are but rather as how they seem to be. This makes it possible for every advertiser to essentially "lie" about their product. The trick is that they aren't actually lying because that would be illegal, but they're still implying their product or service is better than that of their competitors even if in truth it could actually very well be inferior. That's the key, implying. It's a form of suggestion that affects the target audience. It's not a definitive statement that can be claimed right or wrong, true or false but it makes an impression, however large or small. Success in marketing is achieved when one's advertisement has made a stronger positive impression than that of one's competitors. (Rope & Mether 2001.)

4.2.2 Market what the Audience Wants, Sell what they Need

To best utilize mental images in marketing one has to understand what the person you're attempting to cater to is actually after. People buy products, but they're not wanting to buy a product because they want to own that specific product. The product is a tool, something they need to achieve what they really want. They buy hygiene products because they want to be clean. They buy clothes because they want to appear fashionable, deliver a visual statement about themselves or because they want to be comfortable. Women buy cosmetics because they want to appear beautiful. Even products that are mainly considered tools, like kitchen knives, can be marketed via the feeling "buying this knife set makes you succeed in the kitchen". Thus it is more important to market the product by catering to the basic

need. A person buying soap gets a more positive impression of the product if it's advertised as being able to make your hands squeaky clean and smell like flowers instead of trying to market the product by technical details only. (Rope & Mether 2001.)

4.2.3 Association is the key to a Positive Mental Image

Association is one of the core concepts of mental image marketing. Earlier it was mentioned how Coca-Cola uses Christmas and Santa-Claus heavily in their adverts. This is association at its best. The core target audience for Coca-Cola is children and youth up to young adults. A very large portion of the target audience identifies Christmas and Santa-Claus as something very enjoyable and positive. Coca-Cola then associates these two things with its product, the Coca-Cola soda. The target audience then gets the impression or mental image that Coca-Cola is tied with the holiday. This is a two-way effect. People will want to consume Coca-Cola during Christmas time but also they attach the positive feelings of Christmas to the drink itself, creating a positive mental impression of the product that sticks all year round. Association is much more about showing than it is about telling. Association cannot be effectively told. An advert that states their product is the best, even if it shows facts to back the claim up, is not as effective as an advert that can show or at least give the impression it is the best. It's the difference between describing something and experiencing something. This is why commercials showing cars often talk very little of the technical details of the car and instead show how well the car handles in terrain or how quiet or smooth it is to drive. (Rope & Mether, 2001.)

4.2.4 How Mental Images Are Formed

Mental images are a combination of many influential factors. Among such factors are things like values held important by an individual. An example of such could be that the individual values the environment or perhaps domestic products and services. Other factors are feelings, preconceptions, attitudes, observations, beliefs, information and experiences. Most of these are self-explanatory.

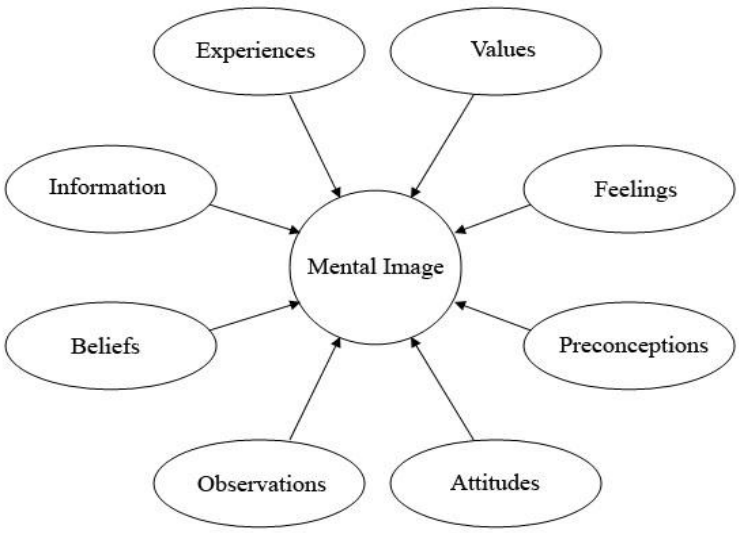

Figure 1 Breakdown of factors influencing the forming of mental images.

As summarized in figure one all of these factors influence the forming of mental images and an advertiser should always aim to influence as many of these elements as possible in order to create a favorable result. Not all of them can be influenced. Some of them can be influenced more than others. The most important elements for an advertiser are information, experience and feelings as these are most easily influenced through advertising. The advert should try to create positive feelings in the viewer through association and at the same time be informative. Experience is only gained from the product or service and if it does not hold up to the positive mental image formed so far, the experience will ruin everything gained from the advertisement phase and form a negative mental image of the product or service.

There are four layers of human psyche commonly influenced by advertisement. These are the rational and conscious layer that has to do with thought and information, the irrational and conscious layer that has to do with feelings, the rational and unconscious level that has to do with associating things and finally the irrational and unconscious level that can be influenced through suggestion.

A rational, conscious choice is made when a person uses the information he has and uses it to fill a need. An irrational but conscious choice is made when a person feels one option is better than the other based on factors not based on information but instead a feeling. A rational but unconscious choice is made when a person buys a new product of a familiar brand because the brand associates past good experiences with the brand, making the new product seem more desirable. Finally an unconscious and irrational choice is made through suggestion instead of information, feeling or association. These kinds of choices never happen by themselves as suggestion is subliminal, but it does always influence every choice as a part. All of these always interact and share a portion of the choice being made. For example, a person has a good experience of a product belonging to a well-known quality brand. This creates a feeling of trust toward other products

of the same brand; this is association, feeling and information all in one. This is why it is important for any advertiser to aim to be informative, associative and suggestive. (Rope & Mether 2001.)

4.2.5 Catering to Different Perceptive Types

When designing marketing it is important to try and cater to different types of perceptive audiences. People have different strengths when it comes to information intake. Some people are more auditory, some more visual and some more kinesthetic learners. This means that if you're more of an auditory person, an advert that has an emphasis on its auditory content will make a deeper impression. Most media thus attempt to engage its audience with both visual and auditory stimuli. This, however does not suit kinesthetic types of people the best. (Rope & Mether 2001.) This is where Flash has one of its strengths, but we'll return to that later in chapter 4.2.7. An advert should aim to draw the attention of the audience with visual stimuli and information but at the same time aim to do the same through audio. What is seen should also be heard, not only information wise but also to catch the ear of the listener. While beautiful graphical content might catch the eye of a visual person, a well thought of audio world will suit an auditory person better. Again think of a car commercial. They go a long way to show the car, but also narrate its features with pleasing narrators and pleasing music.

Not all media are suitable to do this, however. A television is by design a visual and auditory medium. Mobile devices, however, while auditory by primary design are often considered visual devices on the advertisement scene. This is because a mobile device is by design the device that you use while you are out of the house, sitting on a bus, for example. Mobile devices today have Internet connections and their own web pages and adverts designed for them but they don't contain auditory content. This is because such adverts are a nuisance when sitting on the bus. It's not just you hearing the advert, but everyone else, too and while that might usually be considered a good thing from the advertisers standpoint, the annoyance of such a situation overweighs the benefit of a wider audience. Internet is a bit of a mixed medium when it comes to advertisement. Most of all advertising one encounters on the Internet is Flash-advertisement. Most of it is silent advertising, Flashing banners, moving content, pop-up screens and so on and so forth. In some cases a page might contain an advert with auditory content, which will then surprise the user and force him to look for the source of the unexpected source of audio in order to silence it. This does force the user to pay attention to the advert, but in a negative way. Returning back to association, this kind of behavior links the product, service or company in the advert with negative thoughts which is counterproductive. The use of different stimuli in adverts should be carefully planned accordingly with the intended target platform.

4.2.6 Catching Attention

As this thesis is primarily about Flash and how to utilize it effectively, only the details about the subject in the Internet environment will be discussed as it is the most relevant medium.

Any advert anywhere is widely considered more or less an unavoidable annoyance whether a commercial break on TV or Flash-banners on the Internet. Where the two most often differ, is that on TV it's one or the other that's shown, some of the time you have a program on and some of the time you have commercials on. On the Internet, however, most often you have adverts and content sharing the same space competing for the user's attention. Web-pages on the Internet generally follow the same layout design where the content is in the middle, navigation on top and left hand and the rest of the space beyond these is used for advertisement. These are usually the areas that the human eye does not glance at first when entering a page as those are generally reserved for more important site content, so the competition for the viewer's attention forces some degree of harshness. Not only that but the vast majority of adverts on the Internet, especially Flash based, aim to get the viewer to click on them. Getting the viewer to click the advert is a lot more challenging than normal advertisement in other media as it requires the viewer to actually take interest and interact with the advert, not only see and hear it.

To catch the viewer's attention there are many methods available, most of which will be discussed here. First, there are the color stimuli: variation in color, contrast, depth of color, brightness, darkness and choice of colors. Different colors send different types of subliminal messages. This will be covered more in depth later on. A contrast is a visual cue, as bright colors are the ones in general that draw attention. Subtle and gentle colors aren't as attacking for the senses as, for example, pitch black, bright yellow or grass green. Most of the Internet generally is white, so anything that has white hue in it can be considered gentle.

There are also verbal stimuli. The mind is quick to subliminally skim-read the screen. Any verbal stimuli that stand out by its look or content will draw attention. Most of these use shock words and phrases like "You are a winner!" or similar to catch attention. However the use of such phrases has been a common practice since the beginning of Internet advertisement and most people already know or are quick to learn that they, in fact, are not a winner. Also, misleading adverts like these also create a negative experience and association relating to all adverts that appear similar in content or appearance.

There are other graphical stimuli, mainly the use of images, setting and size. These usually portray the product or the content of whatever is being advertised. Sports franchises advertising tend to have sports equipment or wear on their adverts, while other websites advertising themselves contain visual cues such as the logo or image relating to the content on their site. The size also directly affects the noticeability of the advert; the bigger the ad the more likely the viewer is to see it. Also, the more detailed and engaging the graphical content of the advert is, the more likely it is to draw

the attention of the viewer. A picture is said to be worth a 1000 words. Who is to say an advert can't do the same?

The next obvious method of drawing attention would be the use of auditory content. This is highly effective in an online environment. Any use of sound of any kind will essentially force the viewer to seek out that specific advert and put his focus on it in order to silence it. This is because the Internet is essentially a visual medium. The viewer listens only to what he chooses to listen to and is not fed auditory content unlike in other media. When he suddenly is fed auditory content he didn't choose himself to listen to, it both surprises and annoys the viewer. This is a negative association most of the time. The only time this does not have a negative impact is when the advert happens to contain something highly relevant to the viewer's interests, which is a rare occurrence. Catching attention in this manner is generally a bad idea in an online environment.

Some less obvious things to note when catching attention is saturation, location, repetition and innovation. Any advert suffers from saturation if the web page it appears on contains several other adverts, too. Then it has to compete for attention not only with the actual page content, but with the other adverts, too. If possible, one should aim to have their advert as the only advert on the screen. Some aim to achieve this through pop-ups that either darken or cover the rest of the screen by splashing the advert right in the middle. This is also usually a negative association as it forces interaction from the viewer instead of luring it, which is also usually a bad idea for any advertiser. The location also relates to this. while pop-ups are generally a bad idea, it is, however, a good idea to understand how the human perception works. When a new page is loaded by the viewer, his eyes will immediately start scanning the site from the top and left side. (Rowell 2010). So the further down and right your advert is, the farther away it's from the viewer's sight. Repetition also ties to both location and saturation in a similar manner. The first ads that hit the viewer's sight are noticed more easily than the ones that come after, but repetition can also mean the repetition of the same advert which essentially forces the viewer to acknowledge it. Innovation, on the other hand is an advert portraying something completely new and so exotic that the viewer's interest is sparked just because he wishes to learn more about it.

4.2.7 Mental Images and Flash

So far it has been discussed why mental images are important, what their potential effect is, how they are formed and how their creation can and should be influenced through advertising. Some details about advertising on the Internet have also been mentioned. Next it is time to venture a bit deeper in to how Flash relates to advertisement on the Internet and how everything discussed before relates to working with Flash.

Flash has the most potential out of all the advertisement media out there. It can display pictures and text and animate both, contain auditory content, has its own scripting language that allows for interactive advertisement and finally is cheap to produce and spread. Its biggest drawback is satura-

tion. According to Bort (2012) Netcraft survey has discovered 644,275,754 active websites during 2012, which means there are even more since the beginning of 2013. Each and every one of these sites has the potential for ad space. This means that ad space is plenty, but visitors are scarce. Where there are visitors, there's ad competition. The more visitors there are, the more competition there is. The more competition there is, also the higher the costs of advertising will be. Even when one manages to get their advert on a highly trafficked website, people go about their way to ignore adverts as they are generally considered a nuisance which has even brought about the term "banner blindness" as described by Jakob Nielsen (2007). According to his eye tracking experiments, people not only avoid adverts but they do it so rigorously any real page content that remotely resembles an ad will get discarded and paid no attention to.

While the biggest drawback is saturation through competition, the biggest strength at the same time is the possibility for a wide spread. This, however, is not something Flash achieves by itself but through services provided by Google Inc. These will be detailed later on.

The second greatest strength Flash has over any other widely used format of advertisement is interactivity. Flash allows for user interaction as it is entirely possible to create fully fledged games through ActionScript. These types of game interactions can also be scripted to an advert. Examples of such interactions are controlling a moving element in the advert and doing a simple action, this could be something such as controlling a weapon on a shooting range, trying to hit moving targets. The idea behind this is that the game challenges and lures the viewer to try the game aspect of the advert when suddenly it opens a new page after a click or two. This is actually somewhat of a trick, albeit a poor one, to get a visit from the viewer.

While the advertising services provided by Google Inc. provide a wide spread for your adverts to millions of websites that is not the only way to utilize Flash as a tool for advertisement. Flash has excellent embedding possibilities, i.e. it can be seamlessly embedded on a website. If desired it is even entirely possible to make the advert blend in so well with the website, the viewer won't even know he's looking at an advert until his attention is already caught, essentially avoiding the "banner blindness" factor mentioned earlier. This allows for very interesting opportunities for site designers and advertisers. Granted this kind of functionality has to be built in a website separately and it can't be spread like simple Flash-banners via Google Inc. services, but it will allow for much more noticeable and interesting adverts for the audience that does visit the site.

4.3 Guidelines of Cross-Cultural Communication

No matter what kind of visual advertisement campaigning is being planned and no matter what the target audience is, colours, images and symbols always carry different meanings and have different associations between cultures, nationalities, ethnicities, idealisms, religions and even political views. What is common and acceptable in western societies, like exposing of skin, is considered improper and insulting in the Muslim soci-

ety. The colour red is often associated with love and passion in the west but in South Africa it's the colour of mourning and sadness and for the Hebrew it's a colour for sin and sacrifice. Western societies consider the number 13 an unlucky number and it is often taken seriously enough to have most buildings not have a 13th floor at all and all apartments with number 13 are skipped. The Chinese consider the same of number 4, as it's pronounced similarly as death in Mandarin.

There is a lot to consider when designing the graphical look of any advert. At best the choices made can have a subtle influence on the viewer that encourages and draws a positive attention to it. The worst case the advert may leave the target audience unintrigued or even cause an actual uproar in the society. This most often happens when an advertiser is either blatantly ignorant of cultural differences, like advertising bikinis in Middle East or attempts too bold of an advertisement campaign through the use of shock methods or takes one step too far from the widely accepted. Many commercials get banned for the excess use of sexual or violent content for example, while both are still widely used.

4.4 Services Provided by Google Inc.

Google Inc. provides services for online advertisement that allow the most powerful utilization of Flash advertisement available. The main two services of interest are Google AdSense and Google AdWords. These function as the two ends of the advertisement scheme where the AdWords clients are advertisers looking to find ad space for their Flash and other adverts and the AdSense users are clients providing ad space on their web sites. Essentially those advertising pay Google Inc. a set amount of money on a by-click basis and the ad space provider on the AdSense end of the deal also gets paid a set amount in the same manner.

The main interest towards this service rises from the fact that Google Inc. acts as the middleman for all transactions and provides the actual technical solution. Since everything between the advertiser and ad space seller is handled by the Google services automatically and seamlessly, the entry for wide range online advertisement and selling ad space has become close to effortless, requiring only a simple account creation and payment details. This also means that no interaction between the advertiser and ad space seller is required. (AdWords n.d., AdSense n.d.)

4.4.1 Google AdSense

Google AdSense (AdSense n.d.) is the ad space seller's end of the advertisement service provided by Google Inc. A webpage owner can create a Google account and use it to submit an AdSense application. This application form asks for your address and contact information and the address of your website you are selling your ad space on. In addition, it states the guidelines and program policies that will have to be accepted before application submission. All AdSense applications are reviewed by Google Inc.

and accepted or rejected on a case by case basis depending on whether the website is in accordance with the AdSense policies or not.

After signing up and being accepted by Google Inc. the account holder is provided with a code that has to be embedded in the website code. This code interacts with the AdSense databases and forwards the adverts to the site. The content of the adverts can also be influenced by the AdSense client. For instance, if the site owner runs a sports online-store he could choose only to display sports related adverts on his site.

A real time auction is held within the AdSense algorithm for which a suitable advert is displayed on the site. Every time an ad is clicked by a visitor on the website, the website owner is paid directly by Google Inc. for the sum that was the highest bid on the auction. (AdSense n.d.)

AdSense Program Policies (Google AdSense Terms and Conditions n.d.) prohibit any kind of use of the AdSense service in such a way that it results in illegitimate clicks on the ads. Such would be clicks made by the site owner and any and all clicks made by site visitors through the influence or encouragement of the site owner. The influence and encouragement would include the use of ads on popup windows or pay-to-click campaigns, written encouragement or user interface design that forces ad clicks. It is also prohibited to tamper with the embedded AdSense provided by Google Inc. in any way. Any breach of these rules and the others stated in the AdSense Program Policies can lead to invalidation of the clients AdSense account and termination of related payments.

4.4.2 Google AdWords

Google AdWords is the other end of the advertising service provided by Google Inc. It offers the possibility of enlisting as an advertiser and getting your own adverts spread throughout the web potentially to every website that uses AdSense services. Making use of this service requires only a Google account that can be upgraded in an AdWords account simply by inputting information containing your geographical location, time zone and type of currency. (AdWords. n.d.) After registration of the AdWords account follows a 4-step setup. These steps are as described by Slagen (2011) in his article How to Set Up Google AdWords Express in 4 Simple Steps. These steps are choosing the budget, creating the ads, picking the keywords used to target the intended customers and entering billing information.

The most luring feature of this service is that there is no minimum budget that can be set for advertisement and charging only ever happens when a chosen action happens with the ad. For instance, invoicing could only happen when a person clicks on the ad if so desired. Another possibility of payment is per every time the ad is shown on the web page. This means that the advertiser is always guaranteed the exact amount of attention for his advertisement campaign as he puts in as the budget. The only variable is the speed at which the budget drains as the clicks accumulate.

The amount of clicks the advertiser gets can also be highly influenced by inputting desired targeting parameters. Examples of such parameters would be geographical area targeting, targeting by language or languages, targeting by certain websites or websites of a certain category or people browsing the Internet with certain devices such as mobiles or PCs.

Lastly it is important to know how the adverts are chosen for the available ad spaces. Every advertiser has a CPC max value which stands for "cost per click" and CTR or "click through rate". CPC is the price you pay for clicks after the auction is completed and max CPC is the highest bid you are prepared to make in the auction. CTR is a measure of how well your ad has been doing in its lifetime. The more clicks it has had, the higher CTR value it will have. CTR also tracks the location of the ad on every webpage it has been shown. This is because ad spaces on a site are not equal and are ranked. An advert spot closest to the top of the page usually has the highest CTR value meaning any advert in this location gets more clicks than any other ad on the page. CTR is a measure of quality both for the ad spot as well as the ad itself. The quality is a parameter derived from several factors, the CTR of the ad determined from its performance on the said page and all other webpages it has been shown on, the relevance to the webpage its being auctioned for and finally the quality of the page itself. An example of a high quality score would be an ad that normally gains more clicks on average than other ads portraying sports equipment and being auctioned for a popular sports forum webpage. It gains quality points for clicks, relevance to the webpage and popularity of the page.
CPC, Quality and the CTR of the ad space are weighed together and the ad that scores highest in the comparison gets the ad space in the auction.
This means that even if an ad has a higher max CPC set, meaning it's ready to pay more money for the ad space than the other ads, it still might not get the space if it has a bad quality. A sports equipment ad on a sports forum webpage with a lower CPC might get the top ad spot because of its higher relevance and prior performance over an ad selling sports cars with a higher CPC. (Clickthrough rate (CTR) n.d.; Cost-per-click (CPC) n.d.)

4.5 Financial Requirement

Prices for Flash-banner production vary greatly among media houses and are dependent on the amount of work the banner requires. Simple still pictures start from around 30-40€, animated pictures add to around 40-60€, Flash-banners are from 70€ upwards, and Flash presentations can vary from 150€ to a 1000€ dependent on the length, quality and amount of reworking desired by the client. Some firms provide package prices that include such things as the initial sit-down with the client, presentation of the initial result, a rework run if desired and second presentation. These deals are rigid and costly and will easily end up costing extra if the representative does a poor job. Most firms prefer giving an upfront price estimate for what the person wants. This is beneficial for the customer as this way he only pays for what he needs and the media firm delivers what was promised without it being tied to any time ranges that, if breached, end up costing more. Prices are estimated derived from the online price listings of several firms.

Using Google's services to spread Flash advertisement is very beneficial when a wider audience is desired. This service comes at a cost but how much money is put in to the service is entirely up to the client and the cost is directly tied to clicks and or times the advert is shown instead of campaign time or subscription fee. As mentioned before the cost of displaying an advert on a page is derived through an internal auction within the service. An advertiser can set a maximum cost per click money value, which is essentially your maximum bid for any ad space. So, if you never want to pay more than 2 euros for a click on your advert, you won't, but if other advertisers have a higher maximum cost per click value set, it is likely they will outbid your offer and gain the advert slot leaving your advert not shown. Giving price estimations using this service is impossible because it is entirely up to every advertiser themselves to decide. There is no minimum budget.

Finally there is no additional cost to having Flash on your website for instance. Flash does not need any server software to be purchased or installed. Flash files are played by the visitors' web browsers as long as they have up-to-date Flash plug-ins installed and these are provided by Adobe free of charge. The server transmits the Flash .swf file to the visitor just like any other file, so there will be no extra costs from hosting Flash.

5 HTML5

HTML5 is the newest version of the Hyper Text Markup Language or HTML, the follower of the previous revision HTML 4 of 1997, a product of cooperation between Web Hypertext Application Technology Working Group or WHATWG and the World Wide Web Consortium or W3C. The initial work began in 2004. The first working public draft was released in 2008 and has been updated progressively since. W3C aims to release a stable HTML5 Recommendation by the last quarter of 2014 while WHATWG has declared to be working on HTML5 as a living standard which means it will never be considered finished.

The goals of HTML5 are to reduce the need for scripting through more markup flexibility, it should handle errors better, reduce the need for external plugins and third party technologies, its development should be more transparent to the public and the most popular standards and technologies used with HTML 4 should be more tightly integrated, namely Cascading Style Sheets or CSS, Document Object Manager or DOM and JavaScript. New features in HTML5 should be based on these along with self-improved HTML. Finally, it will be completely device independent.

In layman's terms HTML5 is a better packaged, more flexible and self-reliant method of constructing websites and rich Internet applications, with less scripting and external implementations and more streamlined semantics. (Pieters & Kesteren 2013.)

5.1 Features

HMLT5 retains many of the same features that its predecessor had, adds a lot of new elements, removes many obsolete ones and improves upon many others. HTML5 introduces the ability to store data through a local storage, i.e. information that is typed in a website, or the status of an application, retains itself even if the browser is closed. Additionally, HTML5 now allows for such usability upgrades as bi-directional drag & drop, between a website and the desktop for example, a possibility for tracking geographical location and APIs for accessing external devices such as webcams, microphones and such.

As the primary focus of this thesis is on advertising and comparison on that front between Flash and HTML5, the new graphical additions in HTML5 are the real interest and this section will focus primarily on those.

HTML5 adds video and audio mark-up tags freeing itself from the need of relying on external players. As HTML5 is device-independent, this player will work across all platforms and it's easy to use compared to embedding other players. It supports gradient colours, shadows, opacity, hue, saturation, luminance, shape rounding, transitions, transforms and animations through attribute and slider controls.

Finally, perhaps the most powerful feature is the new canvas element. As the name states, it is a definable area on a webpage that works like a canvas. It can display graphics and animation and handle interaction much like any Flash presentation. It can be used to achieve all the same graphical marvels as with Flash. (Wichary n.d.)

5.2 Benefits

One of the main benefits of HTML5 is that it does not need expensive authoring tools or integrated development environments in order to produce content. As it is also fully device independent, it will work with all devices from PCs to tablets and smartphones with no additional plugins or installations required regardless of the producer or brand. In addition to that CSS3 that is an integral part of HTML5 allows for media queries, which can be used to determine what kind of devices are being used to browse the website and adjust the layout accordingly. For example, it is more desirable to show a three column website as one column when it's being browsed with a mobile phone, or two columns when being browsed with the phone sideways or with a tablet.

Secondly HTML5 with its JavaScript based canvas feature is lighter and better optimized in its processes, resulting in faster loading times and better performance on mobile platforms, especially on light applications.

5.3 Weaknesses

As HTML5 is a new standard and still under heavy development and as such it still lacks much of its planned content and fine tuning. A good example of this is that while it now supports webcam interfacing, it still falls short of the quality and reliability that flash provides on the same feature. While it will eventually spread like wildfire among the web developers, currently its progress is being slowed down by the lack of know-how on the production level, the incompleteness of the standard itself and the lack of widespread support for HTML5 services on the web. An example of this is YouTube which is beta testing with HTML5 video player. However, it is still currently underperforming when compared with Flash Video. Google AdWords service provides the possibility for converting Flash ads in to HTML5 format but cannot guarantee the copy will be exact and they do not offer the possibility of importing self-made HTML5 ads.

While the before mentioned benefit of HTML5 is that its production does not need purchasable authoring tools, it can also be considered a weakness. HTML5 still lacks proper tools to easily create visually catching presentations. Everything done in the canvas feature requires a good knowledge of the JavaScript language. Most ads and presentations are done by artists who usually do not possess the technical knowledge of creating the same quality of work through the code instead of a proper graphical user interface. This however is expected to be changed surprisingly by none other than Adobe itself, as it is developing an authoring tool for HTML5 similar to their Flash based one, called Adobe Edge.

5.4 Financial Requirements

Pricing for HTML5 is still much varied between media producers, but it's also difficult to compare pricing between Flash production and HTML5 production, because they are essentially very different products designed for very different things. If the end product desired is a visually engaging graphical presentation with interaction, which is what Flash is designed for, it is certain with the current approach to producing canvas content through code opposed to a graphical user interface with tools that the price range is much higher.

6 INTERVIEWS

To further improve the quality of the thesis, theme interviews were conducted with several different Finnish media firms. Interviews serve to provide a look at the interplay of HTML5 and Flash from a practical and professional perspective, adding to the theory so far.

Representatives of four different multimedia firms that provided Flash design services were interviewed. These firms were A1 Media Oy, KingHill Advertising Oy, Redland Oy and BM&M Oy. All participants agreed to take part in the interview anonymously but as representatives of their re-

spective firms. The interviewed personnel were technical designers working directly with Flash from each company.

The interview questions that can be found on appendix-1 were phrased so that the responses would give a wide enough perspective how the firms perceive Flash now in relation to HTML5 and what they expect from future.

6.1 Summary of the Attained Results

Three of the four firms claim that HTML5 has had an impact on their business design. Two of the three reported that the impact has been significant. Other of the two reports they no longer do new Flash designs at all, but instead only fix and maintain old ones while all the new content is based on HTML5. The other claims continuing rise in HTML5 orders due to increasing demand in mobile visibility, however Flash is still the technology more in demand.

All four firms agree that HTML5 will eventually completely replace Flash as an advertising method in the online environment, however all four estimated that this would not happen in several years still due to HTML5 still being in its infancy.

Benefits of Flash were said to be how it is easier, more user friendly to design and produce and how it is still superior in handling audio files and webcam interaction. HTML5 benefits from being lighter for devices to handle, resulting in smaller loading times and better performance, especially on mobile platforms. On top of this, it was pointed out by all that HTML5 benefits greatly from being device independent

All four firms agreed that Flash's future is not bright. Only one saw that Flash would fall out of use entirely while the remaining three thought that while it most likely won't be able to compete on the display and advertisement scene, Flash could flourish in more specialized uses, like web and desktop applications.

6.2 Conclusions Based on the Interviews

Based on the results of the interviews, it can be seen that the state of HTML5 and Flash in practical use by professionals follows the theory discussed in the thesis. HTML5 is gaining popularity through platform independent flexibility and better performance, but suffers from lack of user friendly authoring tools that allow graphical designers to circumvent the coding requirements of HTML5 graphical design. Flash is losing ground and being slowly replaced, much due to lack of mobile platform support, but is still expected to be the leading online advertisement medium for several years, while HTML5 develops along with more user friendly authoring tools for those lacking coding know-how.

7 CONCLUSION

Setting up and utilizing Flash based advertising is all in all quite simple and highly efficient depending on the choices made for distribution and production. If one has the personnel and know-how to do thr Flash-media content in-house, the costs of outsourcing the production to third party media firms can be avoided, which could save up from some tens of euros up to a couple of thousand euros depending on the scale of the advertisement scheme. Production is possible through various free of cost authoring tools as well as licenced professional development software that allow for production without coding knowledge through intricate graphical user interfaces. The distribution of the adverts is a question whether a localized or a wide spread visibility is desired. A localized distribution requires only a website to show the Flash content on, which could be the home page of a person or an organization, for example. A wider range distribution is offered by Google Inc. through its advertisement services AdWords and AdSense and their cost effectiveness is always guaranteed, as one pays only by clicks, visits gained through or displays of ones adverts. Adobe Flash plug-in is, however, required to view any and all Flash content on the web, and while it is freely distributed and downloadable, it is not an in-built standard.

While Adobe Flash and HTML5 are often considered competing technologies, the truth is that they are technologies designed to do very different things and meet a very different need, while they share some common ground on the graphical aspects respectively. While Adobe Flash is a senior technology by far on its own ground, widely used and widely supported throughout the web, HTML5 is still in its infancy but boasting great potential, especially with its graphical canvas feature. The main factor holding HTML5 back and preventing it from fully replacing Flash yet is the lack of a decent user friendly development environment with a graphical user interface capable of competing with Flash development environments.

In its current state the use of the canvas requires a heavy knowledge of JavaScript and there is no widely supported, reliable software with graphical user tools to aid in the creation of graphical content even though this is expected to change in the coming years as Adobe itself is first in line developing its own HTML5 authoring tool similar to its Flash development environment, Adobe Edge. Everything graphical in HTML5 is coded by hand while Flash development software does this by itself as needed through the tools available. Secondly, HTML5 is not yet widely supported by the major services available on the Internet, mainly Google Inc. who does not allow for self-made HTML5 based adverts through their AdSense and AdWords advertisement services, while it does offer an in-house method of converting Flash to HTML5, although not very reliably at all. Other major service providers like YouTube also dabble in HTML5 but do not rely on it on an effective level because of the third reason holding the technology back, which is the still incomplete nature of the standard. However, while Flash has already been abandoned for mobile platforms, HTML5 has stepped up to widely replace it and development on that front

has begun even inside Adobe itself. In a few years' time all mobile platforms will most likely make use of HTML5 as a display medium for all interactive graphical content, dependent on how soon Google Inc. adopts HTML5 in its advertisement services.

While mobile platforms have had their development of Flash discontinued since 2011, Flash remains the most viable and effective form of interactive advertisement for the computer browsing experience. Flash is also ineffective in distributing information due to its subpar search engine visibility, but it can be highly effective at catching attention with its animations, graphics and audio. The much more user friendly development tools for Flash, the ease of distribution provided by Google Inc. services and the flexibility of Flash as a technology make it the best option for any kind of online marketing and advertisement. Its only major competitor HTML5 is still under a lot of development and lacking support. When proper tools for creating HTML5 canvas content are developed and supported and the major online services adopt HTML5, then that will be the turn point where HTML5 canvas will become the more viable option, but that is still at least several years off in the horizon.

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Appendix 1

INTERVIEW QUESTIONS

1. Has the coming of HTML5 influenced your business and if so, how?

2. Do you see HTML5 replacing Flash as a tool for advertising on the Internet in the future?

3. What benefits do you see Flash having over HTML5 and or HTML5 having over Flash?

4. How do you see Flash's future?