

Matthew Stringer
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Drew Keller, instructor

Adobe Flash for Television

Abstract

With the 20 April 2009 announcement from Adobe Systems Incorporated that their popular Adobe Flash software platform would finally be developed for and deployed to various Internet-connected living room devices (e.g. high-definition televisions, cable and set-top boxes, Blu-ray players, and so forth), Adobe has potentially changed the face of content delivery, web storytelling, and home entertainment for years to come. Theoretically speaking, “Flash for television” marks another major advancement for convergence culture and social media communications technology. However, the success of Flash for television will be extremely dependent on the scope of content availability, the ways in which home users will be able to acquire and/or interact with content, and the imaginations of content producers, device manufacturers, and, undoubtedly, MSOs¹ and telecoms. This paper outlines the basics behind Flash for Television, presents an overview of how Flash could enhance the television viewing experience, and, lastly, postulates on the seemingly limitless possibilities of Flash in the living room.

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Introduction

Flash² has become a popular and ubiquitous multimedia platform throughout the web.

- 1 Multiple service operators, or companies that provide a variety of communication services over a standard signal-capable infrastructure in which they control. Most cable companies are now MSOs, offering broadband Internet and telephone services in addition to television over their networks.
- 2 For more, see the Wikipedia entry on Adobe Flash. (2009, August 21). In *Wikipedia, The Free Encyclopedia*. Retrieved 23 August 2009, from http://en.wikipedia.org/wiki/Adobe_flash

Capable of integrating interactive graphics, games, and videos in to websites through a simple web browser Flash player plug-in, it is difficult to imagine an Internet without Flash. Though other multimedia platforms have come and gone, Flash has withstood the test of time. Popular video sharing websites like YouTube and Vimeo would probably not exist without it. Many of the web's most popular casual and social games are implemented with Flash. Many of the latest Rich Internet Applications³ are being created with Flash (Adobe Flash, 2009). Notably, major entertainment content providers like NBC Universal and News Corp deliver their content at the increasingly popular Hulu video site via Flash (Hulu, 2009). Nevertheless, anyone can purchase Flash design and creation software and build their own Flash media files. In that regard, Flash evens the playing field; Flash is everywhere and its everyones', allowing all parties the ability to share unique stories through web video. And when it comes to web video, Flash appears to be king.

Video on the Internet is becoming an increasingly popular means of communicating messages, telling stories, reporting news and distributing popular entertainment. So, naturally, being able to watch many of the same Flash videos available on the web with a television set, that time-tested traditional point of video consumption in the home, could provide for an ideal home entertainment experience. Indeed, and ironically enough, Flash on TV would mark the convergence of an otherwise re-purposed facet of the on-line experience (viewing videos) with video's traditional medium.

What is at matter most, though, in terms of Flash landing on television, is the creation of a new content delivery process, potentially unrestricted due to its format. Unfortunately, when individual licenses to view certain content are often sold medium-by-medium, this format-

³ For more, see the Wikipedia entry for Rich Internet application. (2009, August 22). In *Wikipedia, The Free Encyclopedia*. Retrieved 23 August 2009, from http://en.wikipedia.org/wiki/Rich_Internet_application

shifting (PC to set-top box, web to TV, etc.) presents a key challenge to content providers: how will their content be properly monetized? This challenge aside, the possibilities for content consumption and monetization are potentially significantly increased when distribution points increase. Flash could vastly increase distribution to brand new head-ends. Some content providers have apparently already recognized this and subsequently made deals with Adobe as part of Adobe's announcement to deploy Flash to the living room (Chanslor & Offerman, 2009). Providers want to ensure that they get their slice of this new pie. These partners are as wide-ranging as the The Walt Disney Company to Comcast to The New York Times (Chanslor & Offerman, 2009). And this is not to mention where user-generated content might eventually find a place, if any, in the fray. Predicting what will happen and painting a picture of what should happen is very exciting, and forms a critical new element to the future of web video and storytelling.

What is Flash for Television?

At the 2009 National Association of Broadcasters convention in Las Vegas, Adobe made the announcement that it would bring its HD-quality Flash software to televisions, Blu-ray players, and other Internet-capable set-top devices (Chanslor & Offerman, 2009). Essentially, what this means is that home users should eventually become able, depending on whether or not their TV or another connected device is Flash-capable, switch between standard television signals (e.g. cable, DVD player, etc.) and streaming Flash web content with the flick of a button (for more, see Cheng, 2009). More importantly, they should be able to view this Flash web content without a traditional web browser (Cheng, 2009). In theory, anything that is Flash on the web should be viewable on a Flash-enabled TV, or through any Flash-enabled set-top box connected to a TV.

HDMI⁴-capable television sets have acted as exhibition points for web video for many years already, wherein users have set-up their television sets to provide an augmented web-surfing experience simply by connecting them to their PCs. However, Flash for TV will mean that either the television itself or a device connected to it will actually be able to read and display Flash files without the help of third-party devices (Cheng, 2009). Certainly other technologies have echoed the promise of delivering web videos to one's home entertainment center, such as Apple TV and Microsoft Windows Media Center, but these systems have relied on their third-party presence. Adobe's announcement of Flash for Television is groundbreaking, because it eliminates the middle man, at least when it comes to Flash content (Cheng, 2009).

Content & Delivery

Content delivered to home televisions through traditional multiple service operators has always been under the control of such MSOs. Theoretically, Flash will open Pandora's box, allowing content to come to TV in much the same way that content proliferates on-line. However, this will depend on how Flash-enabled TVs and set-top devices are configured to receive Flash, and what "channels" (to use the term loosely; in other words, what delivery methods) are made available. Questions abound. Nevertheless, and not surprisingly, the first maneuver Adobe has taken is to, as has been mentioned, strike deals with mainstream content providers and MSOs, in an attempt to establish some foothold in this potentially wide-open and lucrative world of Flash on television.

Some of Adobe's initial partners in their TV venture, as previously noted, include Disney, Netflix, Comcast, and Intel (Frommer, 2009). Securing a wide-range of media and manufacturing partners hopefully indicates that a diverse amount of viewing options and delivery

4 **H**igh definition **m**ultimedia **i**nterface.

scenarios will be afforded the end user. Establishing pacts with the major national and regional MSOs, like Comcast (already signed) or AT&T, both of whom already deliver broadband service over their wired infrastructures, would also mean that channels and/or video on-demand systems could be established, each offering access to Flash content from the web. A major content provider like Disney or Netflix can also ensure a vast library of Flash-rendered media for download to televisions and set-top boxes would eventually become available. By extension, this also implies that product manufacturers will partner with Adobe, as well as hardware innovators such as chip maker Intel, to develop devices and/or television sets that not only work with Flash, but contain the necessary hardware and interactive elements to make finding and viewing Flash content a simple process.

With all of this content, major questions quickly arise: how will digital rights be managed? What level of interactivity will be granted the end user? Will devices be created that allow for permanent storage or duplication of Flash files? Will format-shifting be available? How will the user-generated content traditionally found at popular video sharing websites, for example, the multitudes of videos found at YouTube, be streamed to television? Will established video websites have to take on new forms, or television versions of said sites, tailored specifically for MSOs' graphical user interfaces or other interactive services? What kinds of Rich Applications will become available? What innovations will come from those inevitable rogue end-users who invariably find ways to violate rights management systems and unlock new means of sharing or consuming Flash content, ways never intended by content providers or manufacturers? What will people be willing to pay extra for? Will end users pay extra to view web videos on their television?

Adobe Flash Platform for the Digital Home

Right now, Adobe is developing its official “Adobe Flash Platform for the Digital Home”, an on-screen content delivery and Flash viewing application for set-top boxes, built on their Flash Lite Player⁵ package (Doherty, 2009). The goal of providing Flash for television using this player is to create a consumer experience that stretches across mediums.

David Wadhvani, General Manager and Vice President of the Platform Business Unit at Adobe, explained in Adobe's 20 April 2009 press release the concept of creating a format that will be easily accessed across screens.

“Consumers are looking to access their favorite Flash technology-based videos, applications, services and other rich Web content across screens. We are looking forward to working with partners to create these new experiences and deliver content consistently across devices whether consumers view it on their desktop, mobile phone or television” (Wadhvani, 2009, as quoted in Chanslor & Offerman, 2009).

Promising to deliver content across mediums helps Adobe sell their platform to telecoms that offer multiple services (cable, cellular, etc.). It also marks a major step forward for the Open Screen Project⁶, a project to create a consistent runtime environment for video across platforms (Chanslor & Offerman, 2009). Moreover, the Digital Home platform would give Adobe a great deal of control over how content is managed and delivered.

Nonetheless, it is also likely that MSOs and other branded service providers will want to have their own systems and interfaces developed, based either on iterations of the Adobe Digital Home platform or applications of their own making, with Adobe's involvement. As of Summer 2009, the Adobe Flash Platform for the Digital Home looks like this:

5 See Flash Lite. 2009. On *Adobe.com – Home – Products*. Retrieved 24 August 2009, from <http://www.adobe.com/products/flashlite/>

6 For more, see *Open Screen Project*. (2008). Retrieved 25 August 2009, from <http://www.openscreenproject.org/>



Image 1, the Adobe Flash Platform for the Digital Home (Lewin, 2009).

In general, users might expect to see full-screen Flash content with some kind of over-lay built out of Flash-based widgets or some other kind of Flash-based graphical interface. Beyond the Adobe platform, how this might ultimately translate to becoming a part of any given partner MSO's standard interface appears yet to be seen. Perhaps no changes or adaptations will take place at all. The particular system pictured above⁷ could also be delivered via a set-top box connected directly to the Internet, bypassing cable or satellite providers entirely, perhaps through an IPTV⁸ service. Whatever the final product, an optimal home viewing experience would

⁷ See *Image 1*, this page.

⁸ Internet protocol television, or television delivered via packet-switching technology. For more, see the Wikipedia entry on IPTV. (2009, August 24). In *Wikipedia, The Free Encyclopedia*. Retrieved 24 August 2009, from <http://en.wikipedia.org/wiki/IPTV>

inhabit as few devices in the living room as possible, and a wider assortment of available content services from MSOs or other communications providers would be accessible. It is clear that the tip of the iceberg is all that is foreseeable at this point.

An Ideal Scenario

What would an ideal Flash for television living room scenario involve? Assuming a digital rights management system is implemented which is both business-practical and consumer-friendly, a picture can easily be painted in one's imagination. To begin with, major content providers of traditional home entertainment would make extensive deals with both Flash and device manufacturers. Almost every movie and television show imaginable would be available in Flash form. Video sharing websites would also sign deals, allowing their vast collections of short-form content to become available in the living room. Then, television and set-top boxes will start to be distributed with Flash technology built-in. Otherwise, the latest generation of set-top boxes already found in countless homes, specifically cable and satellite receivers which already boast dual tuners, large hard disk drives, and time-shifting and other interactive services, would be upgraded over their networks to include the Flash Lite player or some other Flash file decoder. MSOs would create channels in their line-ups that offer this streaming Flash content, supplemental to or completely replacing video on-demand channels. Flash games and other Flash-built applications would also be available from on-screen menus. Regular channels could be given Flash overlays or other on-screen widgets that enhance the viewing experience – ad agencies might reach people that normally ignore advertisements (Frommer, 2009). This one-screen interactive TV⁹ would also be ideal for providing such

9 For more, see the Wikipedia entry on Interactive Television – User Interaction. (2009, August 23). In *Wikipedia, The Free Encyclopedia*. Retrieved 25 August 2009, from http://en.wikipedia.org/wiki/Interactive_television#User_Interaction

interactive advertising when a robust return path is available. Lastly, a browser for finding and displaying any other Flash content from across the Internet would be available. Users would also be able to save some content, depending on the license, and shift it to other media through available outputs on their devices. These services would all be offered at prices similar to what MSOs and other telecoms already charge for analogous services. Essentially, Flash would mark both an enhancement and a replacement of countless services which already exist, replacing several current delivery formats as well (e.g., on-demand movies currently delivered as MPEG-2 compressed files).

Under this idealized configuration, user-generated and amateur content already available freely at popular video-sharing websites like Vimeo or YouTube and in other locations on-line would still be free to view on television. The same advertising arrangements that exist for these types of content could be continued in the TV form, such as sidebar ads which would then display as over-lays appearing on the edge of the screen, or the preservation of in-video ads and video annotations. On-line entities offering web video content could further extend their reach to homes across the world via their new television presence (Frommer, 2009). Imagine the irony of a newspaper such as the New York Times, which has seen declines in print readership, establishing major TV presences and a new business model through web video made available in the comfort of the living room.

Perhaps eventually entities like the Nielsen Company could track and assign TV ratings to the most popular web videos viewed solely through television sets. Flash video on television could spell the salvation of both the print journalism and network television industries, as they shift to the web and begin sharing their stories through web video – and as the world, now able to view this content on-demand in their living rooms, takes notice. At the same time, user-

generated videos could continue to enjoy the reach and popularity many of them have seen thus far, assuming the playing field between major content providers and the rest of the populace is maintained. If popular sharing sites and other social media services develop TV-based Flash applications that utilize social sharing tools, home users could still respond to and share content the way that they already do on-line.

Conclusion

Ultimately, Flash for television could succeed where others have failed in bridging the divide between the TV and the Internet in the home (Frommer, 2009), a major victory in the pursuit of convergence technology and culture. Flash for TV represents a confluence of successful and emergent current technologies, such as video on-demand and social media, innovations which are quickly becoming commonplace in the wired home. Assuming that incumbent businesses, particularly MSOs and major entertainment and news content providers, escape the inevitable struggles which will come with properly managing and delivering proprietary content while concurrently establishing social sharing mechanisms through the TV set and remote control, Flash for TV could be widely adopted and embraced. Seamless integration with available devices will also play an important factor. Certainly a pressing need is seen in the lack of advancement and innovation for set-top box technology and STB user-interface designs, which are relatively prehistoric compared to the advancements in design implemented in other widely used devices in other spaces (e.g., cell phones, PCs, and so forth) (Frommer, 2009).

Flash is widely adopted and immensely popular on-line. While it is easy to assume that the popularity of Flash will replicate itself on television, part of what makes Flash so popular is the accessibility and social influence that it provides the masses. Anyone can craft Flash

animations, videos, games, rich applications, and other Flash-based offerings and share them with the world on-line, their user-generated content easily embedded in web browsers. This will not be as simple when dealing with television. A Flash design and creation application does not appear to be a part of the current Adobe Flash Platform for the Digital Home, and it is not easy to think of a way it could be implemented. Nevertheless, if MSOs and content providers provide a means of supplying user-generated content directly through some return-path, Flash on television could enjoy the same success it does on-line. For example, a home user could shoot a video with his or her smart phone, connect it to their set-top box, and upload it directly to a TV channel set-aside for sharing user-generated video. It would be converted to Flash and made available to the masses. An on-screen widget would allow users to share the video with popular social networks and web services on the Internet – their video could become popular in both spaces. At the same time, a different video posted via the traditional means already provided by sharing sites through the web could find its way to any given MSOs TV-iteration of said website. In this scenario, it is not difficult to foresee the day that Hollywood trade papers list the “ratings” of the most popular web videos alongside the most popular television programs. Whatever the outcome, Flash will likely change the television landscape for years to come, assuming it is implemented wisely and adopted widely. Whether or not that will happen is open to interpretation, but exciting to ponder.

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