



GERBSMAN PARTNERS

Mobile Flash Market Opportunities - 2006

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Introduction – by Steven R. Gerbsman – Principal, Gerbsman Partners

As mobile media and mobile multimedia are rapidly gaining acceptance among consumers, “Mobile Flash” is filling a void that WAP and Java failed to fulfill to date, that is small and compelling packages of mobile multimedia entertainment. Where WAP and Java spearheaded the mobile entertainment industry with mobile Internet and games applications, Adobe’s mobile Flash technologies bring a promise of “always-on” applications that will continuously serve the latest news or content in a compelling multimedia format. Whereas Java and WAP provided a basic infrastructure to break ground and launch pioneering services, Mobile Flash enables an ever-growing developer community of Flash to bring their graphical expertise and experience to mobile devices and its large consumer base.

With all these promises on the line, there are some concerns in regards to the availability and distribution of the technology platform. With the incremental need of being pre-installed in handsets, and sanctioned by the mobile operators, Flash is facing an uphill battle to reach critical mass among consumers and devices. With the recent support from Nokia, SonyEricsson, Samsung, LG, Verizon Wireless, Deutsche Telekom and Vodafone, the promise is definitely changing to becoming a clear and present investment opportunity.

Key findings include:

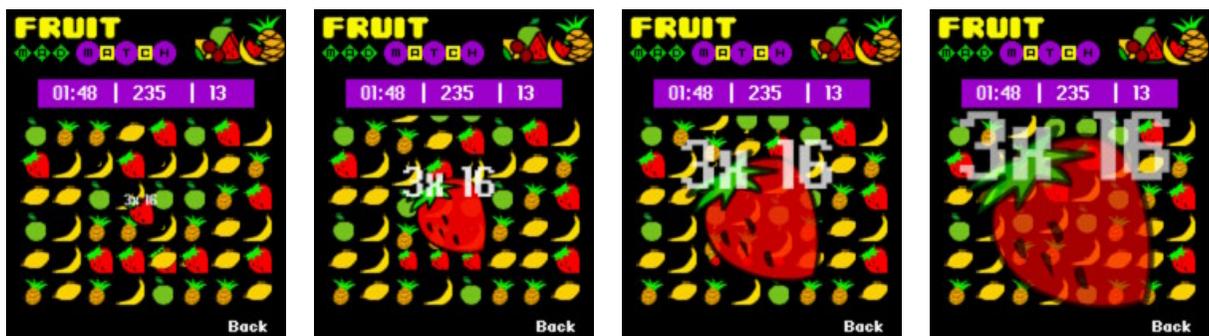
- What Is Flash - This paper will cover the basics of how mobile Flash will impact current mobile entertainment services and products.
- Current Technology and Market Opportunities – Is mobile Flash a disruptive technology that will change the game, or is it a limited enhancement that is nice to have?
- Key Benefits of Mobile Flash – How does it work and what can be done with the technology. When will it reach mass market appeal and how long lead time does this technology represent when building Flash based mobile entertainment companies or services.

This white paper is written to provide a technology update and capacity insight into mobile Flash and its early applications. Over the past 3 years, Gerbsman Partners, with its Board of Intellectual Capital, has established itself on the forefront of wireless technologies and content and has strategically positioned itself to assist its clients in maximizing enterprise value through Gerbsman Partners access to the US capital markets and strategic partnering/distribution opportunities.

What is Flash?

Flash is a technology made up of two parts – a content development application and a player - that has been in development by Macromedia since 1996 and is now owned by Adobe. The Flash development application is used to wrap content such as vector artwork, images, text, audio, video and data feeds into a package that can be displayed by the Flash player. The Flash player is a small application that was originally developed to display Flash content in a browser and on the desktop. Currently, Flash player browser penetration has reached an unprecedented 98 percent – the most ubiquitous player in the market.

Having honed its expertise at delivering broadband experiences across narrowband connections in the desktop arena, the Flash player is now steadily gaining adoption across an ever-increasing number of mobile devices. This allows these devices to access the Flash player's ability to display sharp vector content that can scale to any screen resolution. This is part of the reason Flash provides an excellent way to create content, applications, and experiences that can then be repurposed for multiple display sizes.



Flash vector graphics scale without becoming out of focus. Visuals from Omega Mobile's Mad Match Fruit game. © 2004-2006 Omega Mobile. All rights reserved.

Mobile Flash players also have capabilities that take advantage of the device they reside on by allowing interaction with the resident hardware and software. They can access battery levels, network strength and other device level data and perform other critical tasks such as initiating an SMS or a phone call. This also means that the Flash player allows the delivery of data and new graphics across the network behind the scenes without the user being inconvenienced.

The Flash player also allows the use of full or partial screen real-time transitions that create a seamless experience for the user as they view changing content and data. The ability to have non-destructive screen refreshes is a powerful way to provide the user with new data without having to resort to the traditional approach of jumping to a completely new screen. Ambient animations and sound also enhance the content. All of this provides an experience that is far more fluid, giving the creators of mobile content far greater possibilities in developing easy-to-use, fully customized user experiences in far less time.

Current Technology & Market Opportunities

If we were to take a look at the state of the technology in the mobile world today we would find that along with Flash, device developers are using technologies such as J2ME and BREW to create content, applications, and experiences for mobile devices. These technologies tend to take a "stacking" approach to their user interfaces that take the user through branching paths to their destination.

The largest issue with development in these technologies is the enormous cost and time involved in developing the initial application and also in porting it to other devices and display sizes. In Java-based development environments, it's not uncommon for small changes in an application to require weeks of programming and testing across multiple devices. J2ME is often implemented with slight differences on each device. This fragmentation of development resources is a major hindrance to the growth and continuing expansion of services and experiences that can be provided in the mobile environment.

Flash-based development for mobile devices, although requiring a good amount of forethought, strong design and skilled implementation, is far simpler and more cost-effective than the other options currently available. Flash has been around since 1996 and has a huge development community base with a wide range of interests and experience. This means that as a standard in the community, Flash is a tool found on most designers' computers. Because Flash development is accomplished in an application, rather than through complex code-based methods, it provides the additional benefit of allowing both programmers and designers to contribute to the process of building and deploying cutting-edge mobile applications.

Flash provides a consistent development and deployment strategy. It allows the developer of content to use the same basic assets, code, and processes to create content for a wide variety of devices. It also means that a consistent look, feel and behavior can be accomplished for a device manufacturer's or operator's entire portfolio of devices. Consistent visuals and experience equates to customers feeling empowered to use current features of their device more frequently and to learn additional features available to them beyond the usual well-worn use paths. This also translates into developers being able to respond much more quickly to market demands and newly revealed revenue-generating opportunities with fully customized and strongly branded rich media experiences that have been tested, refined and efficiently deployed.

Key Benefits of Mobile Flash

The development of content and user interaction that is engaging and responsive creates a much deeper user experience. Compact Flash files allow the inclusion of animation, different types of fonts, sound, images, video, and data to create content that encourages customer loyalty and frequent interaction. This also allows differentiation of devices or services with very personalized and customized content, applications, and experiences.



Omega Mobile experiences with deep personalization that include visual feedback designed into the system so if chooses a favorite team their choice is reflected in the coloring of the entire interface. Copyright 2004-2006 Omega Mobile. All rights reserved.

Currently, one of the main issues in the mobile device market is the need to personalize and deeply customize experiences. Deep customization involves the full spectrum of experience for the user and can include, but is not limited to, the physical device skinning, visuals, content and interaction with the device. This customization, initiated by the user or developed by the provider, can be changed on the fly – anytime, anywhere. This promotes the brand, helps retain subscribers and increases revenues by allowing providers to offer changes to the experience, or to tailor the current experience of the user more frequently and without inconvenience. This creates a truly interactive relationship with the subscriber that is one of the most sought after benefits of mobile user loyalty.

Since the development of Flash content is scalable across devices in terms of CPU usage, display size and interaction with the device hardware, the development process is far less complex and allows for the leveraging of existing content. Using content already developed for the desktop or Internet deployment creates a large savings of time and money all along the deployment chain.

Possibilities – creating a new kind experience and opportunity

Creating new services with Flash for mobile devices allows for a rapidly increasing number of real-world possibilities for revenue generation. Some of these are currently being realized, although their full potential has yet to reach fruition. Newer opportunities are also noted as the mobile medium extends its reach in terms of viable subscriber models and hardware capabilities. The following is an overview of these possibilities and explanations of how they might be utilized or encouraged to emerge in the current market.

- **Data Services**

One of the strongest markets for Flash-based mobile development is in providing rich media data services. These data services offer personalized content or “channels” around specialized interests. Content combines graphics, text, animations and data that are

consistently refreshed in order to provide a more appealing experience.



Omega Mobile channel concepts for targeted data service content. Copyright 2004-2006 Omega Mobile. All rights reserved.

Initial data services will likely include familiar content such as sports, movies, horoscopes, and news. These data services open the door to subscription-based revenue as well as tremendous branding and sponsorship-based opportunities by featuring interactive elements such as quizzes, polls, discounts, coupons and time-based content. Any content that would be served by regular updates of text or images would be a candidate for being developed with data services elements in the overall application.

Data service revenue models can range from premium subscriptions to a sponsorship basis. These types of services are some of the largest driving forces for increasing data usage, promoting traffic (SMS/MMS) and boosting ARPU across the mobile device market. Customer satisfaction and viral marketing opportunities are crucial from these kinds of services as well as promoting the system itself to customers and non-customers alike.

- **Advergaming and Infotainment**

Because Flash-based content can be customized and created quickly, it is particularly well suited to creating advergaming and infotainment content for mobile devices. A strongly branded message can be packaged in a game or entertainment offering.

- **Community Applications**

A much sought after "final frontier" in the mobile device community is the development of influential and usable community applications. These applications always allow connection between the subscriber and their social network. They promote user-generated content that is then shared through the mobile network. Being able to take a picture with your mobile device is great, but being able to share it with family or send a group of photos to people as postcards has a very high value to users in the mobile device market. Make these applications intuitive and easy to use and you will create a viable and self-renewing revenue stream as subscribers discover features they don't want to do without.

These types of applications are key aspects for ongoing customer loyalty to a brand in the mobile device market. They also generate revenue by community building within the subscriber base and increasing traffic on the network.

- **Entertainment Portals & Premium Experiences**

Currently, one of the most wide-open arenas for mobile device development is the creation and delivery of premium content destinations that subscribers can add-on to their current

service package or choose as a part of enhanced packages. The main challenge for this type of offering is to be able to package and personalize services in real-time and deliver the services to the mobile device with a minimum of inconvenience to the subscriber.

Examples include lifestyle portals (content grouped by interest – sports, politics, music, TV shows), long animations or cartoons, enhanced mobile TV offerings, streaming video and audio services, and mobile music and movie portals.

- ***Viral Promotions***

The blogging, GPS treasure hunt and viral video revolutions are examples from non-mobile spaces of the type of power that viral communication provides. These movements are of particular interest to the mobile market because they promote the usage of the network to deliver the content and the connections.

Using the rich media possibilities of mobile Flash allows unlimited possibilities in this direction by using data services, gaming, streaming video and text chatting applications to develop creative new revenue streams. Viral marketing requires the content to be easily updateable, brandable, visually appealing and creatively delivered – all elements of the mobile process that Flash excels in. This is a very underused aspect of mobile device development with great potential. What's the next "big thing" going to be in the digital world – and what if the mobile device was the only way to access it?

- ***Tutorials, Guides and Device Specific Showcases***

A powerful way to encourage current and new users of devices to increase their usage is by providing simple and appealing tutorials, guides and showcases for the features of their mobile device. Creating help content that is easily accessible and maximizes the rich media capabilities is more likely to encourage customer loyalty and encourage them to try out features they might not normally. A comfortable user is one that is more likely to press a few extra buttons to see what they do, perhaps to discover a feature they find indispensable.

Another option is to create a device specific showcase, along the lines of a "cool feature" guide that highlights new uses for the device itself. Creating this helpmate technology with additional media support such as audio, instructive animations and friendly visual interfaces is the key to accessing these new audiences. Examples might include feature tour on activation of the device, tip of the day, always present help indicators and 1-button help access features.

Time to Market

Flash's most significant contribution to the mobile and device market is the reduction of the time and cost required to develop, test, modify and deploy content and experiences. Being able to respond to market changes and new opportunities as they appear is the key to survival and growth in the fast moving and ever changing mobile device world.

Flash significantly lowers the overall cost of development by reducing the number of steps required to execute a project. When creating content, applications, or experiences the Flash development application provides built-in features that would normally require a lot of steps and custom work. This reduces the amount of time needed for costly programming expertise in the overall cycle of the project.

Flash also dramatically reduces porting costs. When coding a project for Flash and mobile devices, you also remove the need to manage multiple versions of the code that makes the

application work. With Flash, development is done for screen sizes and processor speeds, not hundreds of unique devices.

Add to this the fact that your development teams can use this standardized process to leverage experience and knowledge from the Flash community at large. Flash has been around for a long time and its developer community rivals any other community in existence today for its passion for pushing the envelope and coming up with new ways to leverage the technology that Flash provides.

Being able to use Flash-based prototyping to support and speed R&D efforts to anticipate the market is also invaluable. You are able to build functional prototypes of features you wish to leverage before that feature is even available on the device. By bringing a proof-of-concept stage for usability into your process you are able to try, tweak and discard ideas at a far greater rate than with other technologies. Being ahead of the game in new content, applications, and experiences as well as being future proof in terms of your current offerings continuing to function on new hardware and software platforms is one of the keys to staying viable and ahead of the curve.

Conclusion

This paper has covered the current landscape and future trends of Flash for mobile devices. The mobile Flash player technology is beginning to be implemented on many devices in the mobile space. As implementation increases, the advantages of using Flash will become the key to determining the success and speed of mobile multimedia development and deployment of compact and interactive mobile experiences. Using Flash assures a smaller investment time and money because of Flash's ability to port and adapt to a variety of screen sizes, bandwidths and device hardware with much less difficulty than the other current mobile technologies.

About Omega Mobile

Established in 2001, Omega Mobile is a leading provider of rich mobile multimedia applications with extensive strategic and tactical experience. Omega Mobile has a passion for compelling content and an acute understanding of strategies, markets, technologies, creative techniques and more.

Omega Mobile offers strategic advice and creative execution of mobile multimedia experiences. Omega Mobile creates mobile multimedia utilizing extensive consumer research that provides for consumer needs and desires.

Recognizing trends ahead of the curve in time to capitalize on them is fundamental to Omega Mobile's innovative and user-oriented applications. Omega Mobile makes it quick and easy for consumers to use, try, and purchase data services, applications, and content.

<http://www.omegamobile.com/>

About the authors:

- ***Nader Nejat, CEO & Founder***

Nader Nejat is a renowned pioneer, lecturer, teacher and mobile multimedia expert. His work in the fields of entertainment, advertising, technology, and marketing includes mobile projects for Sony, Verizon Wireless, Macromedia, Qualcomm, & Leapfrog. A commitment to advancing the discipline of multimedia led Nader to San Francisco State University where he teaches Flash Design for Mobile Devices as well as other multimedia classes. He moderates the Flash for Mobile Devices forum at FlashKit.com which serves 500,000+ Flash

developers. A frequent speaker and lecturer on mobile multimedia, Nader is also the author of many mobile articles on mobile multimedia including a series for Macromedia's Mobile Designer/Developer center.

- ***MD Dundon, Chief Information Architect***

MD Dundon has explored many aspects of the computer world in the past 17 years. Her work life has let her interact with companies large and small doing pure production, abstract research, consulting, coaching and programming along with informational, experience and visual design. She's been lucky to add to her experiences the authoring of a Flash book and several Flash curriculums, teaching for 12 years at universities such as CCAC, Academy of Art and SF State University's Multimedia Studies Program and being an inspirational speaker about Flash and interface design on TV, video and at conferences all around the world.

About Gerbsman Partners

Gerbsman Partners has, for the last 3 years, analyzed and observed the US market and has continuously perceived the US market as trailing the European market by 16-18 months. As market conditions are rapidly changing with the incremental resolution of network compatibility issues, the European advantage still remains. What had been 16-18 months ahead just one year ago has now seen development times cut in half to perhaps nine months today. If you, as a European mobile service company, maintain a strategy to enter the US market, the window of opportunity still remains and might do so for another 6-9 months.

Patric Carlsson is a member of the Gerbsman Partners Board of Intellectual Capital
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Gerbsman Partners is a financial restructuring and private investment banking firm specializing in assisting emerging growth, middle market, under-capitalized, under-valued, and under-performing companies and their Intellectual Property maximize enterprise value.

Gerbsman Partners has developed significant domain expertise in the wireless and mobile content area and has assisted numerous companies develop and execute their strategic, operational, financial and financing strategy action plans.

Gerbsman Partners, founded in 1980, has been involved in over \$ 1.9 billion of financings, M&A transactions and balance sheet and financial restructurings. Gerbsman Partners has offices and strategic alliances in North America, Europe and Israel.