

Mobile Content Delivery Technologies

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Abstract (web_0047)

The session provides an overview of mobile content delivery technologies, highlighting strengths, weaknesses and best practices.

1 Introduction

The rapidly increasing penetration of mobile phones with access to data services and a rising demand by users for mobile content has spawned a variety of mobile content delivery technologies. Mobile content is compelling in that it reaches a large and rapidly growing audience and provides users with a constant link to the web services to which they have grown reliant. The mobile content market is booming. According to Seamus McAteer in a June 7, 2004 article on wired.com, in 2004 wireless content generated half a billion dollars in revenue in the United States alone. As with any emerging medium, multiple technologies vie for prominence in this new medium. However, unlike other historical technological content delivery format battles such as VHS vs. Betamax, in the mobile content sphere, the content, not the delivery method should drive the technology used. Each mobile content delivery technology has its strengths and weaknesses, requiring mobile developers to make informed decisions on the appropriate technology for the content.

In this session, we will discuss, compare, and contrast several mobile technologies for delivering mobile content currently in use by North American carriers including WAP2, Macromedia's FlashCast and Flash Lite, and downloadable applications written in languages such as BREW and J2ME.

2 Macromedia Flash Mobile Technologies

In 2003 Macromedia, the company behind the almost ubiquitous Flash Player, introduced Flash Lite, their equivalent of the Flash Player for mobile devices. According to Gary Kovacs of Macromedia, Flash Lite is expected to be installed on 40 million devices by the end of 2005. Developers author SWF files using the familiar Macromedia Flash development environment which allows the developer to optimize files for efficient mobile distribution of dynamic and compelling content including animation, audio, graphical user interfaces and SMS. The author can also target specific handsets and account for communication challenges such as network latency, low bandwidth, and cellular signal problems.

Macromedia FlashCast is an extension of Flash Lite, offering content providers the ability to push dynamic content to user's phones based on the individual user's preferences. Weather forecasts, stock information and movie times, for example, can be pushed to the user's phone in the background, eliminating the latency normally associated with mobile applications. Using preferences, users can select what content they'd like to receive which the phone then downloads in the background as long as the

phone has access to a cellular signal, ensuring that the content the user wants is immediately available. The bulk of the bandwidth required is for the user to download the shell application. A FlashCast SWF contains all of the common interface elements and ActionScript code to run the application. This method greatly reduces the need for bandwidth as the data heavy elements are downloaded once, stored, and the periodic data updates are usually quite small.

3 WAP2

WAP2, the next generation of the mobile equivalent of HTML, extends the ability of WAP to support XHTML and style sheets. What WAP2 lacks in the interactivity that Flash Lite or FlashCast offers, it makes up for in its ease of development. Coding a WAP2 site does not require knowledge of Flash, ActionScript, J2ME or any other programming language than XHTML and CSS. In addition, in theory, mobile developers do not have to target specific handsets as they do with other technologies. Any WAP2 compatible phone should display WAP2 content the same way as any Web browser on a user's personal computer displays the content of a Web site regardless of the operating system and browser employed by the user.

3 Customized Downloadable Applications

The technologies described above deliver the user content using a predetermined delivery specification. Developers creating content for Flash Lite, FlashCast, or WAP2 must conform to limitations of the medium determined by their respective authors, Macromedia and the WAP Forum. However, another delivery option is open to developers; writing a custom application in a language such as J2ME or BREW. Although development costs are generally higher, a customized downloadable application affords the author almost limitless control over the medium. The only constraints lie in the handset's operating system, memory, processor speed, and bandwidth.

About the Presenters

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