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What's Next for Mobile Content Adaptation?

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8/10/2009

Video is responsible for the recent explosion in broadband Internet traffic. Whether it is an online news report, sports highlights, last night's TV episodes, user-generated content or simply posting from friends and families, video has become the dominant content format in online media. Moreover, the expanding footprint and usage of 3G mobile technology has accelerated the growth of video content and is rapidly changing the mobile content landscape. Mobile content is migrating from traditional text and graphic-based views to include dynamic video content for viewing, sharing and comments. Several categories of mobile video content sites have emerged including viral video (YouTube, DailyMotion), broadcast TV (MobiTV, Joost); video upload (Shouzu), and peer-to-peer video (Vidrunner)

Broadband Delivery versus Mobile Delivery

As mobile video content becomes increasingly widespread, video rendering, or adaptation from broadband to mobile, becomes an essential ingredient of every service. While millions of videos are transmitted daily over broadband networks, in most mobile services deployed today, there are a limited number of available video clips. There are fundamental differences in the delivery of video over broadband networks to PCs versus over mobile networks to phones and other portable devices. Broadband networks currently possess bandwidth of up to 30 Mbps while prevailing mobile networks have speeds typically reaching only up to 1 Mbps (Edge). While many countries have already commercially deployed 3G networks with transmission speeds up to 14 Mbps (HSDPA), such networks are not yet ubiquitous.

Rendering Video Content into Suitable Formats

The underlying technology behind broadband to mobile content rendering is transcoding and transrating. Transcoding is the ability to take existing video content and change the format and resolution to suit the capabilities of the client (which in the case of mobile devices are severely restricted compared to that of PCs). Transrating is the process through which to convert media content prepared for one bandwidth (bitrate/framerate) into another. While transcoding and transrating technologies are widely available today, several challenges still remain in rendering video content from broadband to mobile.

There are many mobile devices available in the marketplace and mobile services must offer access to dozens of mobile handsets. Each of these devices has a different screen size, resolution, and media player that supports a multitude of video standards; in order to provide the best experience to a customer these

parameters should be tailored to the capabilities of the phone. However, rendering of all items of video content into each of these formats is a time consuming and costly process, and as a result most services limit the formats available to a small subset of the 'lowest common denominator.' By enabling on-demand transcoding it is possible to only transcode the content into the formats requested by customers resulting in large savings for both server and storage requirements as well as offering faster publishing times since there is no need to wait for batch-mode processing to complete before posting content to customers. Furthermore, the use of intelligent on-demand streaming and transcoding means that value-added services can be provided including the ability to serve targeted playlists of content or introduce personalized ads into video content making a richer service.

The Necessity for Transcoding

Multi-format transcoding is the most important challenge for content providers and broadcasters to overcome before realizing the tremendous potential growth in mobile video. Consumers have an insatiable appetite for immersion in entertainment, consequently, transcoding and transrating multiple formats in real time will be a necessary function for all future mobile video products to be successful.

New video rendering and conversion solutions now exist for mobile service providers and content aggregators. Using these solutions, providers are able to adapt content in real-time between networks and devices, without the need for traditional content pre-rendering and substantial server infrastructure.

Mobile video content holds one of the immediate opportunities for mobile operators and content providers. The ability to instantaneously convert diverse video content effectively along with the highest video quality provides another measure of stickiness and customer loyalty that all major mobile operators are trying to capture.

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