

## TECHNICAL NOTE

# Integrated Video Delivery Solution to iPhone



### THE OPPORTUNITY

The introduction of iPhone has boosted the adoption of viewing video on mobile phones. Its large screen, ability to support high data throughputs and WiFi support, has generated an excellent user experience that is catching on everywhere. However, iPhone does not support the standard mobile video protocols, nor does it support the common Internet video formats. This creates confusion on how to deliver quality video on the iPhone, for various types of services.

iPhone OS2.0 had two significant problems in supporting video: No support for Internet video (flash video, WMV); and no support for mobile video streaming (unlike standard 3G phones). iPhone OS3.0 introduced HTTP live streaming to solve the live video problem, but this is still not compliant with mobile standards. In addition, there are several difficulties in supporting different video sources and services. The table below summarizes the challenges and Mobixell's Videon platform solutions for iPhone video delivery for all possible services.

### THE SOLUTION

#### iPhone 2.0

##### VoD

Supports HTTP progressive download, H.264 codec.

Mobixell's integrated solution uses Videon off-line preparation for encoding content in the correct format and resolution, and Videon Delivery Manager uses HTTP progressive download for video delivery

##### Live video

No support for any streaming video

Mobixell's integrated solution activates the iPhone client with a 3GPP streaming player and Videon streaming

##### Open Internet Browsing Video

No Internet video is supported by iPhone (neither Flash nor Windows Media).

Mobixell Videon Internet gateway fetches Internet content, including live video and VoD, flash video, WMV, and more. The content is transcoded in real time and delivered via HTTP progressive download to the iPhone with almost no added latency

#### iPhone 3.0 and higher

##### VoD

Supports HTTP progressive download, H.264 codec as well as Apple's HTTP Live streaming

- Mobixell's integrated solution uses Videon off-line preparation for encoding content in the correct format and resolution
- Mobixell's Videon Delivery Manager uses two options for delivery: HTTP progressive download, and HTTP Live streaming, that allows adaptive streaming functionality

##### Live video

Live video Apple's "HTTP live streaming" technology

- Mobixell Videon uses HTTP Live streaming for live video from any source, performing both encoding and streaming.
- A client can be used for enhanced usability

##### Open Internet Browsing Video

No Internet video is supported by iPhone (neither Flash nor Windows Media).

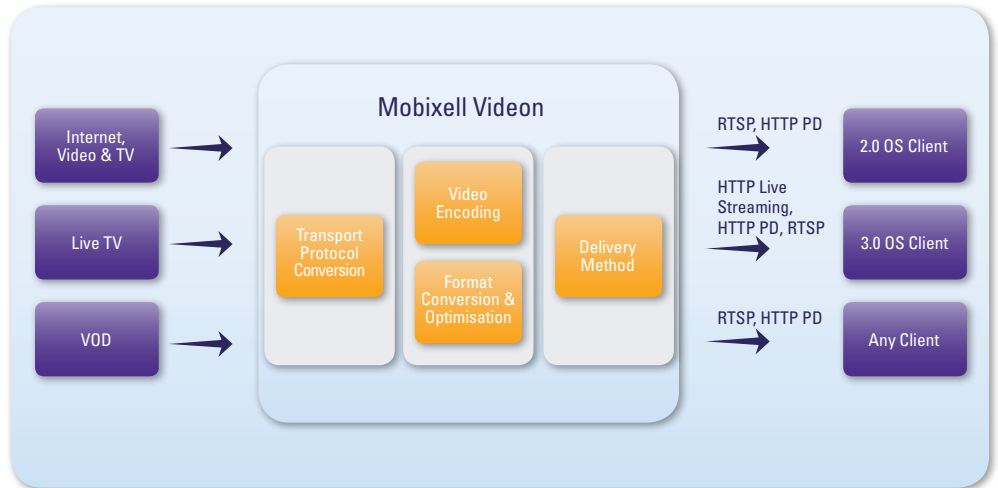
Mobixell Videon Internet gateway fetches Internet content, including live video and VoD, flash video, WMV, and more.. The content is transcoded in real time and delivered via:

- HTTP progressive download or HTTP Live streaming

**VIDEON IPHONE SOLUTION  
ADVANTAGES**

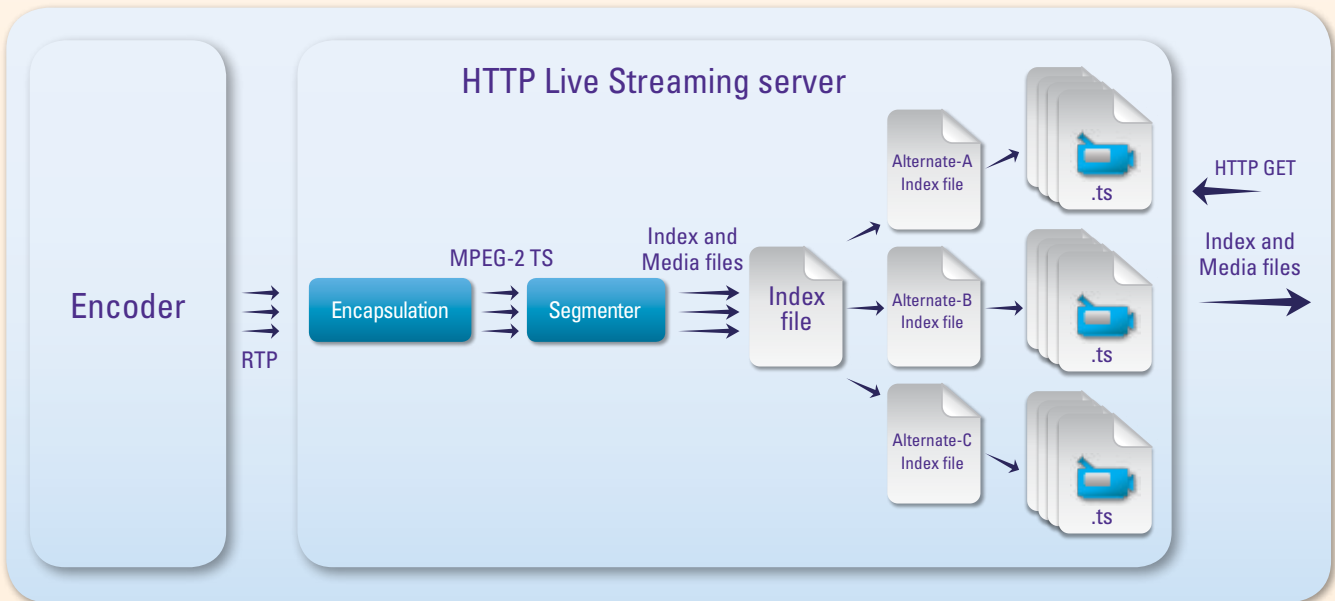
Videon's major advantages in providing an iPhone integrated solution are:

- Support for all types of services: live; VoD; open browsing video
- Transcoding in real time to video formats that iPhone supports
- Improved user experience with Live TV when using a client based solution with integrated EPG
- Integrated solution in the mobile Operator's environment for billing and authentication
- Unified system for iPhone and all other mobile handsets



**HTTP LIVE STREAMING TECHNOLOGY**

Apple's HTTP live streaming is a method for providing live streams to the iPhone. The streams are multiplexed as MPEG2-TS (Transport Stream) segmented into files (chunks) and delivered via simple HTTP. A complementary playlist defines the continuity between the chunks and allows the optional use of multiple "streams". In this case, the client can choose a "stream" according to the available bandwidth, in order to ensure optimal quality and minimal buffering.



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