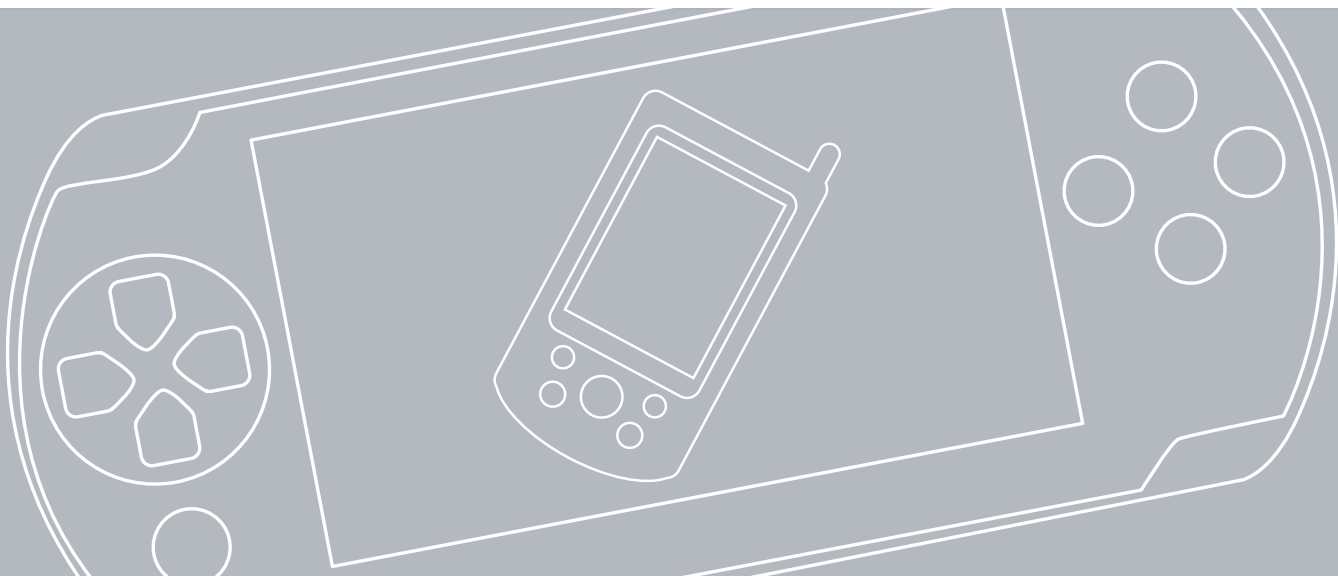


Wireless poses a new set of challenges in managing mobile content, delivery and applications. What's needed is a comprehensive solution that will manage the creation, distribution, delivery and packaging of wireless content.

## Seamless Video Experience Across Any Device

Putting Mobile On-Demand Technology to Work



## Overview

*Delivering Video on Demand anywhere, and on any device is one of the hottest topics in the industry today. But wireless brings a new set of challenges for operators – how to handle video delivery, how to prepare and manage content and applications, and how to generate revenue from mobile content.*

*SeaChange® is using the latest technology to address these challenges, and help make mobile video distribution work effectively. Using standard video servers and our existing back office software systems, SeaChange's mobile technology will deliver On Demand content to a wide variety of devices – from large high-definition screens to cell phones.*

*SeaChange's Axiom™ Open Suite will provide a comprehensive solution that will manage the creation, distribution, delivery and packaging of wireless content. In keeping with SeaChange's tradition to propose and adopt industry standards, Axiom Open Suite will embrace IMS, and other standards, as it evolves to deliver video over wireless networks. Subscribers will soon be able to select the content they want by connecting to the SeaChange® VOD servers from a broad range of mobile devices including laptop computers, PDAs, smart phones and portable game consoles – each with its own customized UI.*

### **Video Delivery to Mobile Devices**

By leveraging IP transport of video streams, SeaChange can extend On Demand coverage to the widest range of mobile devices. Streams are delivered over the cell networks of major mobile service providers, as well as over local WiFi networks. Axiom Open Suite enables the familiar VOD UI displayed on set-top boxes to be rendered as web pages and formatted specifically for each requesting device. Using open standards, subscribers connect to a SeaChange head-end and select content just as they would from a set-top and remote control. Content is then streamed or downloaded to the device using a variety of video formats and standards-based signaling protocols. SeaChange's Axiom Open Suite software manages mobile devices seamlessly and will enable video servers to both stream and download content to mobile devices.

Streaming transfers content in real-time via a protocol such as MPEG Transport or RTP with minimal buffering. Network quality of service and bandwidth management are required to guarantee that the content "bits" arrive at the correct rate and in the correct order. The advantage to streaming is twofold, a streaming client can be a low-cost device with little local storage since the content is played out as it is received, and streaming is regarded as being more secure as content is never stored locally. Trick mode requests, like FF, REW & Pause are transmitted with open protocols back to the head-end via an upstream link, and are handled directly by the video servers.

Download transfers are accomplished using 'best effort' delivery at whatever rate the network can support at the time. Content is typically transferred either faster or slower than real-time, via a protocol such as HTTP or FTP. Download clients require storage in which to buffer the content received, and trick mode requests are handled locally on each client.

Streaming delivery of video is necessary for live or time-shifted television applications, while download may be more efficient for delivery of fixed-length content such as movies, provided that sufficient local storage space exists on the client.

SeaChange supports both delivery mechanisms, including added benefits such as scheduling a download during off-peak hours. SeaChange also supports various Digital Rights Management (DRM) schemes to enable content protection. Most third-party DRM solutions are supported as well as basic business rules which can be implemented for both streaming and download applications.

### **Mobile Content Management**

The abundance of mobile video formats, CODECs and bit rates present new challenges for managing On Demand content. Using SeaChange Axiom Open Suite will give operators the ability to manage multiple "renditions" of each video asset. A rendition is a version of an asset with specific CODEC, bit rate, and other attributes appropriate for a specific set of devices. A rendition may also include purpose-built content for the type of device targeted, e.g., a condensed 'mobisode' for a PDA vs. a full length rendition for a TV.

SeaChange Axiom will seamlessly manage any number of renditions of each asset, allowing operators complete freedom to manage the lifecycle of both the asset as a whole and each rendition individually. The software is fully backwards compatible with VOD software in the field today.

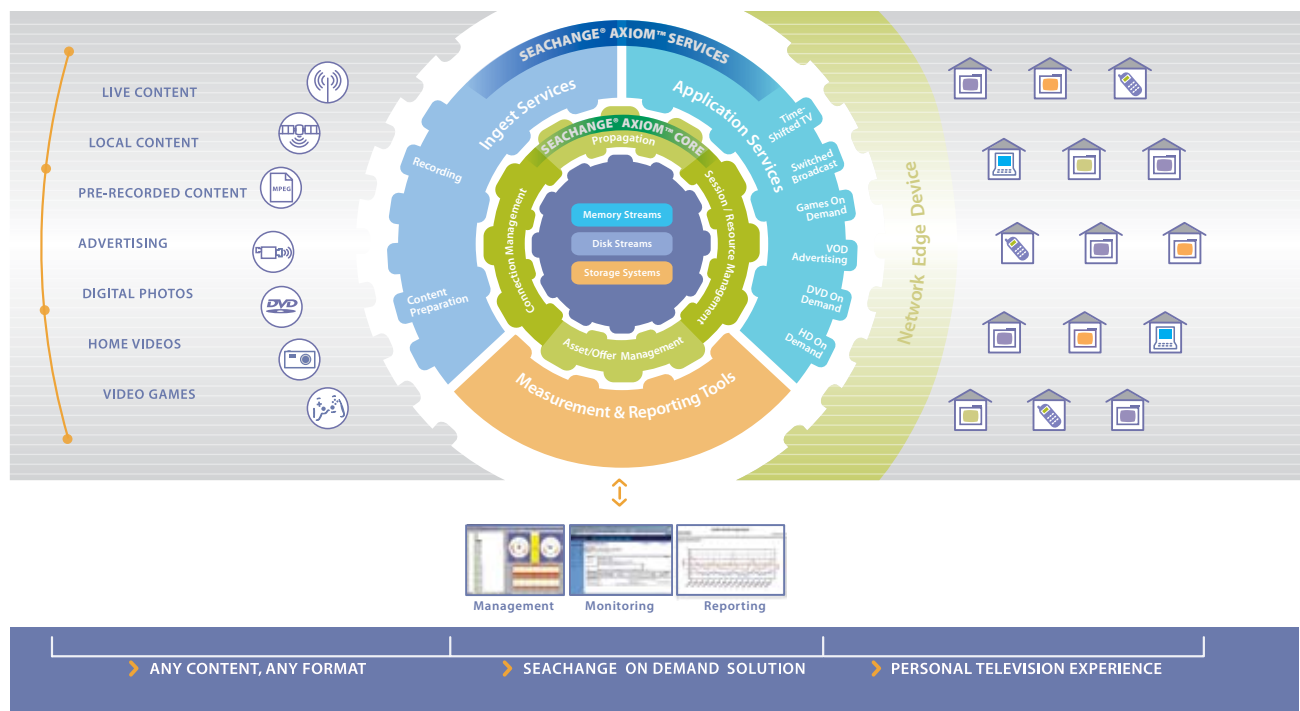
## Mobile Content Preparation

A key requirement for mobile distribution is content preparation. SeaChange, in partnership with AnyStream has developed the QuickSilver Content Composer– a next generation On Demand content preparation solution based on the highly successful AnyStream® Agility® VOD platform. SeaChange® QuickSilver™ Content Composer is the solution used to generate mobile renditions of On Demand content. Virtually every mobile format in use today will be supported, many with real-time transcoding capability. You will be able to use the QuickSilver/Axiom combination to provide time-shifted television to mobile devices; automatically transcoding received broadcast TV streams and placing content onto servers for immediate playout in dozens of formats.

## Mobile Advertising

The popularity explosion of mobile video opens up exciting new revenue generating possibilities through live, dynamic advertising. SeaChange has drawn on years of expertise in ad insertion to develop the SeaChange® AdPulse™ On Demand Advertising System. AdPulse enables seamless splicing of highly targeted advertising spots into On Demand content, regardless of the client device or video format. Ads are selected dynamically during playout according to business rules supplied by the operator, and can be targeted down to the individual subscriber. Ads can be “bookended” between content, or inserted automatically into ad available spots marked with the QuickSilver Content Composer.

## End to End Mobile Delivery from SeaChange



The convergence of television, PCs and mobile devices offers exciting new ways to capture subscribers and open new revenue streams. SeaChange Axiom Open Suite is the key to providing a seamless video experience across any and all devices. Subscribers will be able to view any content anywhere – pausing a stream on one device and resuming it on another!

With Axiom Open Suite, QuickSilver and the advanced SeaChange® MediaServer MDS 200™ memory server, SeaChange is positioned to offer the industry's most comprehensive and cost effective solutions for the next generation of mobile On Demand applications.

For more information, contact Phil Simpson, Director Product Marketing, On Demand Solutions at [phil.simpson@schange.com](mailto:phil.simpson@schange.com) or visit our website at [www.schange.com](http://www.schange.com).

