

Meeting the demands of an on demand world.™



Dynamic VOD Ad Insertion Overview

Application Note

Video on Demand (VOD) ad insertion enables advertisements to be associated with on demand programming. Dynamic VOD ad insertion allows separate ads and programming to be assembled on the VOD system as streams play to subscribers. C-COR Solutions and Atlas On Demand (AOD) have teamed up to deliver an end-to-end solution from the ad agency desktop to the VOD system. AOD provides the ad agency planning and analysis tools, and ad decision logic; C-COR provides the ad management and VOD system upgrades to manage and dynamically insert VOD ads.

Benefits to MSOs' Ad Sales and Advertisers

Cable networks today hard-code pre-roll and post-roll ads into the VOD program providing advertisers scale and content relevancy. Advertisers receive viewing data about the VOD program but very little information about actual performance of the ad. They would also like more flexibility with respect to optimizing the ad independently of the programming, and viewing data about their ads; especially brand exposure duration metrics.

Dynamic VOD ad insertion solves these problems and provides enhanced value to advertisers. MSOs with dynamic VOD ad insertion capability can attract brand advertisers' ad dollars to VOD ad pre-roll and post-roll avails by offering flexibility and ad measurability. Scale may initially be a challenge but the added value should be higher on a CPM or subscriber basis, helping to justify scaling the business.

In addition to VOD, MSOs can add value to the campaign sold to advertisers by including linear TV ad schedules, ad production, and broadband portal ads including web video. And, MSOs can cross-promote the ad-supported VOD programming to drive up ad viewing, with linear TV ad schedules, broadband portal ads, and e-mail blasts.

In the long-term, MSOs may also allow cable networks to take advantage of the dynamic VOD ad insertion capability and share in the networks' ad sales revenue, thereby encouraging the networks to provide more programming to

VOD, which improves cable's competitive advantage and reduces digital subscriber churn.

The integrated AOD and C-COR solution for dynamic advertising is intended to support the following goals:

- Generate incremental ad sales revenue through new inventory and dynamic VOD ad insertion capability
- Demonstrate enabling technology that can meet the demand of advertisers and programmers
- Demonstrate ad models for free VOD content
- Generate enthusiasm to grow business and include more advertisers, content, and markets

Products Provided by C-COR

C-COR provides the following products in support of VOD ad insertion solutions:

- nABLE Logical Content Manager—creates playlists on the VOD system by dynamically combining MPEG clips to be streamed in response to subscriber VOD session requests.
- nABLE Ad Execution System—translates subscriber VOD session requests for advertising-supported programming into playlists by interpreting instructions provided by the Ad Decision System.
- nABLE Ad Execution System Adapter for AOD Play Instruction Interface—supplies to the VOD system associations between advertisements and programs, as defined by the Ad Decision System.
- nABLE Data Tap—provides a general XML interface for reporting MSO data out of VOD system.
- nABLE Data Tap Adapter for Atlas Play Data Interface—reports impression data back to the Atlas Ad Decision System from the C-COR VOD system by way of the nABLE Data Tap.
- nABLE Local On Demand Packager—an Asset Distribution/Management System for managing local advertising content.

The nABLE On Demand Management System will initially support TV Guide/Motorola environments followed by Scientific-Atlanta environments. Several of nABLE's product features run on the Sun Solaris server platform.

Products Provided by Atlas On Demand

Atlas provides its digital marketing suite of products, by way of hosted software services, to hundreds of top advertisers and ad agencies. They use Atlas's digital marketing suite of software to plan, buy, deliver, optimize and analyze ad campaigns on the web and, with the addition of Atlas On Demand, on VOD.

AOD's technology is built on industry-leading Atlas software which today handles more than four billion dynamic insertion decisions a day on the web. Atlas maintains five data centers (four in the U.S. and one in Europe) from which it provides its software services and massive data processing capabilities.

On demand advertising technology consists of integrated applications for media planning and buying, optimization, ad decisions, and analytics integrated with C-COR's on demand platform and VOD advertising solution. The Atlas and AOD digital marketing software solution addresses every step in the campaign process as shown in Figure 1.

Atlas's digital marketing suite for the web and AOD for VOD is solely paid for by its customers—the advertisers and ad agencies who buy ad inventory. Unlike companies whose

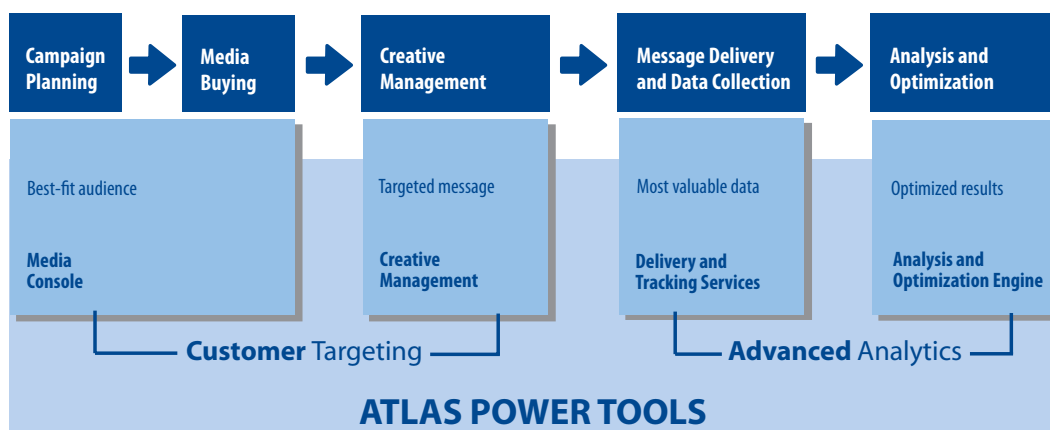
business is solely to provide data analytics and reporting, Atlas provides sophisticated analytics as a crucial component of the overall campaign process to increase media efficacy and to facilitate more media spent for on demand advertising campaigns.

Buyer-Seller Negotiation and Invoicing

An AOD advertiser or ad agency customer negotiates with an MSO's ad sales representative for the VOD ad inventory. The inventory will include ad avails before and/or after VOD content. The MSO is responsible for the content and its ad avails.

Once agreed, the advertiser or ad agency will enter the media plan (including a unique inventory ID provided to the media planner by the operator and obtained from the C-COR ad management system) into Atlas's software system and the MSO receives a confirmation to verify the media plan's correctness. The media plan will identify the ad ID, avail position, content, flight start and end dates, and price. The ad ID will be configured into the C-COR ad management system so that, when the ad content is loaded, it will not be displayed to subscribers in their VOD menu. At the end of the campaign, the MSO invoices the agreed amount to the advertiser/agency. VOD ads can be invoiced by manually entering the charge into the billing system much like is done for production. In the future, billing interfaces, likely developed through SCTE WG5, will automate this process.

Figure 1. Atlas and AOD Digital Marketing Suite for Advertisers and Agencies



Content Delivery

Content delivery of ad-supported and advertising content to the C-COR On Demand System will happen via standard CableLabs ADI distribution mechanisms. Ad-supported content is the VOD program with which the ad content is associated and inserted in pre-roll and/or post-roll avails.

Furthermore:

- The On Demand System separately manages, stores, and identifies advertising content and ad-supported content.
- Ad-supported content is prepared and loaded either locally or by pitcher-catcher systems and MSO relationships already in place, such as TVN, or using local encoder/VOD asset packaging tools that are CableLabs ADI compliant.
- There are no VOD break/avail marking standards at this time so ad-supported content arrives unmarked. The avails will be defined in metadata on the C-COR system locally and independently of where and how the ad-supported content metadata is prepared and loaded. C-COR will define these per the MSO's instructions. (Note: this is where/when the inventory ID is generated.)
- Ad content, typically on BetaSP tape is sent by the advertiser/ ad agency to the location specified by the MSO for encoding, metadata and asset creation, distribution, and loading. This may be a service such as TVN or any operation that has the proper tools to create CableLabs-compliant assets. Advertising content will not be made available for On Demand Usage in the VOD guide.

Communication of Schedule Instructions

Ad play instructions are communicated from AOD to C-COR's ad management system once or more daily. The schedule will typically include the ad asset ID for each avail sold in each program. It can also include ad replacement and ad cancellation instructions. If an ad does not physically exit, the C-COR system will respond with an error message.

Ad Play-Out and Communication of Play Data

When a subscriber requests an ad-supported title, the VOD system and the C-COR ad management system coordinate during the session set-up and play the ads and VOD program in the sequence defined by the AOD ad instructions.

C-COR stores the ad and content viewing activity, called ad play data, independently and it is transferred to AOD's system several times per day.

The MSO's IT department works with AOD and C-COR to configure the secure connection between AOD's software in its data center and C-COR's software deployed with the VOD system.

AOD's reporting system provides MSOs and its advertiser/ agency customers with a variety of data analytics for VOD ads. The types of VOD data analytics include campaign-level statistics, asset-level statistics, campaign chronology reports, and user-level reports.

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