CTAM Advanced Cable Solutions Consortium
Advanced Advertising Committee

Q4 2012
Executive Summary

The Cable & Telecommunications Association for Marketing’s (CTAM) Advanced Cable Solutions Consortium is comprised of industry executives from cable, network, content provider, hardware and software companies who are CTAM Corporate Initiatives Partners. The consortium works together to influence the design, development & delivery of cable products and services such as video on demand, interactive television, advanced video and multi-platform video, to name a few.

In 2009, the CTAM Advanced Advertising committee published a comprehensive white paper that detailed the Video On Demand (VOD) advertising workflow process and identified areas that introduced errors and required expanses of time that were not competitive with linear television advertising. Recommendations were made to resolve these issues in order to present VOD advertising as an attractive platform for advertisers. In late 2012, the committee commissioned Martin Stein, video technology consultant, formerly with Motorola to author an updated report to outline the progress that has been made against the recommendations made in the white paper. In addition, this report provides insights into new technologies and advancements that are now or soon to be available that will enhance the VOD advertising experience, performance and measurement.

Many thanks to the members of the Advanced Advertising Committee for their time and support of this project. Corporate Partner member companies who supported the project include:

- A+E Networks
- AMC Networks
- Arris
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- BlackArrow
- Cablevision
- Canoe
- Cisco
- Comcast
- Comcast Media Center
- Cox Communications
- Disney & ESPN Networks
- Fox Networks
- Nagra/OpenTV
- NBC Universal
- New Frontier Media
- Ovation
- Rentrak Corp
- Rovi
- Scripps
- Showtime
- Starz
- TARGUSInfo
- TMNG
- Time Warner
- Turner Broadcasting
- Viacom Media Networks

If you have questions about this document, please contact Halima Umaru-Mann at 310-485-8912 or Halima@ctam.com.
VOD Advertising Workflow Progress Update Q42012

Overview

In 2009, the CTAM Advanced Advertising working group – (formerly the On Demand Consortium Advanced Advertising Workflow subcommittee) published a comprehensive white paper that detailed the Video On Demand (VOD) advertising workflow process and identified areas that introduced errors and required expensives of time that were not competitive with linear television advertising. Recommendations were made to resolve these issues in order to present VOD advertising as an attractive platform for advertisers. In the years since the white paper’s publication, broadband has also become an attractive outlet for content providers and has provided an advertising opportunity with sophisticated targeting and rapid and accurate metrics reporting – making action to strengthen the VOD platform even more of an imperative.

The white paper focused on VOD content that contained static ads (ads baked in to the content) and made many sound recommendations to improve the end-to-end process. Several recommendations suggested that only a migration to Dynamic Ad Insertion (DAI) techniques could solve the specific issue. When interviewing current day participants in the process (Content providers, MSOs, video service providers, reporting firms, and national ad platforms) we found that many have already begun to move to or launch in DAI environments (prediction: ~60% of VOD-capable households will be served by DAI within 12 months) and all believe that the move is inevitable if VOD is to survive as an advertising destination. With the rapid rise of broadband – and with content providers’ and MSOs’ involvement – most have taken the approach of investing in upgrades to their physical system and their ad related processes that focused on broadband and DAI rather than specifically address the static ad issues. Since many of the issues overlapped, improvements made for the sake of a move toward DAI have actually answered many of the recommendations put forth in the original CTAM white paper.

Approach to 2009 White Paper

The original CTAM white paper divided the VOD ad workflow into four steps and is depicted in the diagram in figure 1:

A. Advertising campaign and asset planning
B. VOD asset scheduling
C. VOD asset preparation and processing
D. VOD views, data reporting, posting and billing

This updated report examines the findings and recommendations presented in the 2009 white paper and attempts to identify where improvements have been accomplished and where issues remain to be addressed.
2012 Key Findings

Progress has been made in upgrading the VOD delivery infrastructure to handle fast turnaround and larger amounts of content. While a detailed review is presented in the following sections, there were some key findings that point to major improvements in the viability of advertising on the VOD tier, as well as a key area that still needs attention:

- Integration of campaign management, traffic and billing, planning and scheduling systems that can accommodate VOD elements is being addressed by vendors in partnership with MSOs. Content Providers are looking to DAI solutions before taking this step.
- Major improvements to network infrastructure and consolidation of transport with aggregators has cut the VOD asset preparation and processing cycle almost in half.
- Consolidation of the reporting function to aggregate VOD usage data from all sources – and the development of repetitive processes - has yielded a reliable and predictable cycle for that key part of the overall process.
- Standards to address the entire process have been developed and published by the industry (SCTE 130, CableLabs ® 3.0, Ad-ID)
- Consistency of metadata, asset tagging and use of available standards is still lagging. This needs a concerted effort to ensure the success of DAI.
Step 1: Advertising Campaign and Asset Planning

Inefficiencies in the 2009 timeframe stemmed from the manual handling of the advertising campaign management and asset planning tasks for the sake of initiating advertising in a static fashion (baked-in ads) for VOD. Not surprisingly, the recommendations from the original white paper centered on the integration and adaptation of existing linear advertising, planning, traffic, billing systems to the VOD delivery platform. Based upon skepticism that static VOD advertising would yield acceptably large revenue streams, content providers and system vendors were reluctant to commit a great deal of resources in automating these processes. Instead, content providers actually improved upon the existing approach by developing manually stitched processes using spreadsheets and e-mails – while setting their sights on the eventual move to dynamic ad insertion for expenditures on automated and integrated systems.

In the intervening years, a number of content providers have developed “digital sales groups” to capitalize on the exploding broadband and mobile advertising markets – and plan to use these newly formed sales groups rather than the linear TV sales groups to address the DAI opportunity. In some cases, content providers intend to keep the VOD sales function with the TV sales group, but to operationally align with new digital (broadband) techniques – in order to maintain the huge value association with linear content. In these cases, the content providers (and system vendors) plan to integrate VOD campaign and asset management with rapidly developing digital management systems – actually fulfilling the recommendation of the 2009 CTAM white paper of alleviating VOD advertising as an “island” of ad hoc processes.

Instantiations of this recommendation are being worked, integrated, tested and announced in the current timeframe. Many companies have recently announced capabilities to support the DAI ecosystem. CANOE Ventures, for instance, is integrating with the popular VOD platforms and broadband campaign managers; BlackArrow and ARRIS have recently announced a tight integration between respective ad management and VOD server systems (Figure 2), and SeaChange offers their AdPulse integrated ad management/VOD server as well as supporting standard industry interfaces. Ericsson and OpenTV are working with MSOs in this area as well, while Harris has also been upgrading the extensive set of tools that it has already deployed in the campaign management arena. All of these systems are, or are working on, compliance with SCTE 130, which is the agreed-to communication vehicle to link various advanced advertising systems, fulfilling one of the 2009 CTAM’s highest priority recommendations of adapting and adhering to industry standards in order to ensure the success and viability of VOD advertising.

Figure 2
Campaign Management – VOD Integration

When attempting to analyze the advertising campaign and asset planning portion of the CTAM model to determine progress against the high side 55+ days and the target of seven days (for static VOD), the reality of the decision by most content providers to move to DAI versus spending heavily to improve the current process needs to be considered. On the DAI side, the physical ability to dynamically insert ads coupled with integrated campaign management/VOD systems may actually allow an “emergency” ad to be scheduled and executed in a few hours (given the ad asset is available at the server systems). Under normal circumstances, estimates of one-to-six days for this part of the process have been put forth, bettering the original goal of seven days. For the static VOD scenario, the tasks of entering orders, obtaining inventory approval, etc. has been regularly accomplished in under 14 days and has become acceptable given the industry’s expectations for static VOD revenue.

In addition, the impact of separate VOD ad planning and management has been somewhat ameliorated by the use of the C3\(^1\) window by some content providers. In this case, the ad impressions are calculated by Nielsen and added to the normal statistically derived data that includes live, DVR, and VOD viewing – without specific additional VOD planning for the campaign. Efforts by content providers to participate in this window include adding the Nielsen watermark and timely propagation of the VOD content. Some do not participate in this activity due to the encoding and distribution costs – and move directly to D4+\(^2\), while some choose to participate only in C3 and avoid the re-pitch efforts involved with D4+

Step 2: VOD Asset Scheduling

Similar to the unique VOD issues encountered in the previous section, a major problem existed with sales scheduling and tracking systems’ lack of accommodation of VOD elements – thus making it difficult for the sales scheduling and tracking functions to reconcile with the planning function. Workarounds were put in place that provided a common entry in planning and scheduling for each asset, enabling eventual correlation. In addition, the static nature of the ad/content relationship significantly limits the ad sales force from responding with any immediacy to VOD advertising opportunities. This type of approach does not scale and provides a potential source of errors if the data used to describe assets in the planning, scheduling, and tracking functions are not carefully coordinated.

The move to DAI is potentially solving both the flexibility problems and the lack of VOD-friendly scheduling and planning systems. With the rapid gain in popularity of the prospect of DAI for VOD, vendors have added VOD planning and scheduling modules to their systems. One such example is IBMS from Pilat Media – and there are more. One possible divergence from the recommendation in the 2009 white paper is the integration with linear systems, since a number of solutions are weighted more to the broadband opportunities and are including VOD as one of many potential outlets. It depends upon where VOD falls in the business model for each provider – as part of digital ad sales or TV ad sales. To be forward looking – multi-platform and targeting opportunities for VOD are more closely aligned with the broadband model than with the linear TV model for technical and operational consideration, but the

\(^1\) C3 is the three-day period immediately following the airing of linear TV content. During this three-day window, a copy of the linear content with its original ad load (all encoded with the Nielsen watermark) may be placed on the VOD tier - with views counting toward the Nielsen rating for the original program.

\(^2\) D4+ is the period following the C3 period. During this time, the original ad load may be replaced with different ads and tracked separately to garner additional ad revenue. The introduction of a new capability by Nielsen (called ODC3 and discussed later in this document) may serve to extend the Nielsen ratings beyond the C3 period as well.
business model may want to be closely aligned with linear TV to take advantage of the association with high value content.

The issue of using a consistent method of identifying ad assets was also presented as a necessary step to accurately tracking and reporting ad placements. A great deal of progress has been made on this front with CableLabs issuing the Metadata 3.0 specification (which allows ads and content to be tracked separately) and a planned adaption of Ad-ID as the replacement for ISCI (extended field size). A number of content providers are also looking into EIDR (Entertainment Identification Registry) for content identification. Feedback indicates that assigning and maintaining consistent and correct IDs (Provider ID, Asset ID) is still an area that needs focus and improvement – and is the single most contributor to delays and errors in reporting. Getting control of how assets (content and ads) are tagged will improve every phase of the VOD ad handling process.

The timeframe for this part of the overall VOD advertising cycle has been targeted at 5 – 7 days out of a process that can encompass 45 – 120 days. While it is difficult to pinpoint the exact time required to enter schedules using various systems (interfaces), the ability to enter data once and have that correlate via a consistent ID protocol, and the ability to port schedules directly to ad management systems via standardized interfaces goes a long way toward optimizing and streamlining this part of the process.

Step 3: VOD Asset Prep and Processing

This is the “heavy lifting” portion of the end-end process, where large quantities of actual content are encoded, ads are inserted (static approach), metadata is added, complete content/ad packages are quality checked for compliance and then “pitched” to distributors/operators for propagation on their networks.

Although this was the least problematic of the four major workflow steps, there have been advancements that have improved the quality and contributed to the survivability of the static process. For a number of reasons, many of the content providers have turned over the metadata management and asset distribution task to aggregators such as Avail-TVN, iNDEMAND and Comcast Media Center. In response, aggregators have developed and fine-tuned internal processes to facilitate the turnaround time and ensure the quality of the final package. In addition, aggregators have the focus and resources to assist with the adherence to developing standards for their content provider clients. Aggregators ensure that all necessary metadata is present and check that content formats are correct and adhere to content encoding standards. As the industry moves forward to the DAI model and the targeted advertising applications enabled by DAI, the role of content preparation and aggregators will become even more important. For example, ad placement insertion marks will need to be coded into standards-compliant metadata files and/or in-band marks. Business rules that govern ad placement will also need to be prepared for action by downstream Placement Opportunity and Ad Decision Services. In addition, the requirement for additional signaling within content streams and more verbose metadata to enable advanced features, the metadata and stream quality control function will become much more critical in ensuring the success of revenue-producing downstream operations.

For content providers that participate in the C3 window, aggregators are capturing the live (linear) broadcasts, add and check metadata, package the final asset and pitch to operators within a six hour window – ensuring timely availability of the asset for maximum exposure to subscribers. Aggregators are gearing up to meet DAI content requirements by offering services to add metadata that describes ad
insertion opportunities and the necessary inline marks to enable downstream dynamic ad insertion. Typical D4+ content with a new load of static ads can be processed by aggregators for DAI (or directly by content providers who continue to maintain control of the content prep process) so that the content can be distributed once to all operators (as different MSOs implement DAI on their own timetables). In addition, the move to DAI will require only a single content pitch compared to the two or more pitches required to participate in C3 and D4+ today.

The streamlined processes and enhanced content encoding capabilities that have been developed during the past three years are likely to become an even more important factor in the success of VOD advertising for those who elect to participate in Nielsen’s ODC3 platform in 2013. With ODC3, C3 ads are inserted into prior episodes of a C3 program and can count toward the aired program’s commercial ratings – and, with the proper workflow, can be separated from DVR views. This creates a large opportunity to use library content to increase ad revenue even more.

Another significant area of improvement has been in the content ingest and propagation capabilities of the system operators. A number of large system operators have invested heavily in upgrading and expanding their intranet backbone and their VOD server systems which have helped speed up the propagation of new content from ingest point to availability on subscriber-facing systems. For instance, Comcast’s CDN (Content Delivery Network) which started to deploy in 2010, allows content to enter the network at a single point with immediate availability to all connected Comcast server systems – virtually taking propagation time out of the content distribution equation. Time Warner has upgraded by implementing their VOD network using “virtualized server” systems – so that an array of connected servers appear and perform as a single entity, speeding availability while improving the overall reliability of the network. This increased reliability also assists in reporting accuracy by reducing the number of outages that prohibit the VOD server system’s ability to deliver usage data to reporting services.

Compared to the systems and technology deployed in the timeframe of the 2009 white paper, today’s implementations have reduced ingest and propagation time from a few days to a few hours. In addition, MSOs have, on average, cut their IPG (Interactive Program Guide) refresh to about four hours from an average of 24 hours – thus making the content available to the subscriber in a more timely fashion.
VOD Views, Data Reporting, Posting and Billing

The final phase of the VOD workflow is the gathering and reporting of VOD viewer activity back to the advertisers and the subsequent billing. Several recommendations were presented and issues highlighted in connection with this last phase of the workflow:

1. **Missing Content on the VOD Server** – The inability to determine the state of an asset, especially an ad, within the Service Provider network has been an issue that has come to light with DAI. It is obvious that a campaign will not execute properly with all of its components; the entertainment and ad content. Having visibility into the state of an asset after it is delivered to the Service Provider will allow for the proactive repair of situations that would cause the entertainment asset and/or ad asset to no be ready when the campaign is scheduled to start.

2. **VOD server reporting problems** – When a significant number of VOD servers do not transmit subscriber viewing data to the collection entity (in house or third party) and days, weeks or even months pass without resolution, the final reports cannot be accurately submitted which negatively affects both the content provider and advertiser. In the past three years, server vendors have improved the reliability of their systems, introduced better service programs and have introduced new technology (virtualized systems, as mentioned earlier) that have reduced the incidence of server outages. One MSO claims that outages now average one per quarter, with repair averaging 24 hours. Reporting vendors also claim that outages have been significantly reduced, but are still a problem since many MSOs factor into a campaign’s cumulative data collection sources. This is an area that still needs continual improvement (limited by the laws of physics) and, unfortunately, will not be aided by the move to DAI.

3. **TOD and FOD conflicts** – In the 2009 timeframe, TOD (Transactional On Demand) and FOD (Free On Demand) reporting were processed in the same fashion – with TOD’s longer reporting cycle holding back data needed by FOD to be eventually reported to advertisers. The recommendation by the CTAM to separate TOD from FOD reporting has been followed by the MSOs that were part of our interview process for this report. Also, it appears that “views” has become the standard way of describing FOD events – although there is still an issue as to whether “views” should include rewind/pause time (which it currently does, as defined by CTAM).

4. **Overall time lag from initial asset availability to final report** – The 2009 white paper estimated that, for an asset that was available on VOD for 8 weeks with the cycle starting mid-month, the overall elapsed time could be as high as 130 days. The current cycle that MSOs, content providers, and reporting vendors have settled into has not improved significantly. Reporting vendors provide complete, scrubbed data 30 days after the end of the viewing month (data relating to content that was available from 15 March to 31 March is available at the end of April) yielding a total time of 105 days. After content providers receive the data (total VOD views) from reporting vendors, an additional 7 – 10 days is required to correlate the views with the ads that were delivered with the content, resulting in a total elapsed time of about 115 days. This is, of course, the time span to accumulate all of the data associated with the campaign. Complete reports are delivered from the reporting vendor at the end of each month (un-scrubbed usage data is available daily, and “title matched” data is available with four days) – so that complete updates and progress can be reported before the entire asset run has ended. For the current static advertising model, content providers have seemed to settle into this turnaround cycle and are not aggressively pressing for improvements.
This is an area that may be significantly improved by the move to DAI and the apparent infrastructure (i.e. CANOE) that is being put in place to handle centralization of data for DAI participants. With properly tagged (Ad-ID) ads, all impressions (with DAI, ads are viewed as an asset, eliminating the need to correlate content views with the ad load) that are managed by a central service can be automatically aggregated and presented on a 0 - 24 hour basis. Ads (static or dynamic) managed outside of a centralized system will still need to be tracked and reported and eventually aggregated by the content provider.

The move to managing ads separately from content brings the specter of increased flexibility and revenue opportunities. It also introduces the challenge of managing vast numbers of ad content instances in comparison to the amount of content being managed under the current, static process, while providing content providers and advertisers with increased visibility into actual campaign performance. Consistent ad tagging will become even more significant as will the ability to track the availability of the validated ad content and manage the life cycle of the ad asset (from pitching through actual play-out validation) – as enabled by the Asset Management Interface 3.0 CableLabs specification implemented in conjunction with the Content 3.0 metadata specification.

5. Inconsistent use of metadata - The 2009 white paper found that metadata used to define an asset was not consistent between MSOs or between VOD systems (even within the same MSO). This presented a monumental correlation task for the content provider who was responsible for summarizing total ad impressions to the advertiser client. In the intervening years, the problem has not been directly solved (still very little consistency) but has been mitigated through the use of reporting services. Currently, most content providers retain the services of Rentrak to aggregate the data from their systems' VOD sources and transmit scrubbed, summarized view data that can be quickly turned into acceptable reports to advertisers. In the process of dealing with dozens of system operators and thousands of sites, Rentrak has developed internal processes and shortcuts (e.g., “automated title matching”) that allow them to anticipate the hundreds of inconsistencies that emanate from various data sources and quickly resolve them in order to present a scrubbed, consistent report to their content provider customers. While this is not the systematic, quantitative solution that has been recommended, the emergence of Rentrak as a centralized resource for the VOD industry (as Nielsen has emerged as the “currency” for linear broadcast) has certainly added stability and transparency that should be welcomed by advertisers investigating VOD as a viable ad delivery platform.

6. Advanced advertising metadata issues – At the time of the 2009 white paper, VOD Metadata 1.1 did not offer fields for advertising assets – and multiple versions of CL1.1 were being used. Since then, VOD Metadata 3.0 has been introduced, with separate treatment of content assets and ad assets. In addition, the Ad-ID extension to ISCI has begun to proliferate in various systems. Working towards more universal usage of these two standards should be a top priority.

7. Demand for zip-code level data from MSOs – It is expected that ~83% of all VOD transactions will contain zip-code level data by 3Q, 2012. As of the end of 2011, only about 31% of all transactions provided that level of granularity.
Conclusion

Since 2009, VOD and FOD in particular have seen significant increases in popularity. SNL Kagan reports that pay TV customers consumed 7.8 billion VOD streams in 2011, of which ~76% were FOD.

In that same timeframe since the 2009 CTAM white paper was published, a great deal of progress has been made in upgrading the VOD delivery infrastructure to handle fast turnaround and larger amounts of content. In addition, standards that are necessary for the identification of content and ad assets and for communication between the myriad systems that make up the advanced advertising ecosystem have been developed and issued. Implementing and adhering to these standards is an imperative. While it is sometimes attractive (or even necessary) to “hardcode” solutions in order to move ahead quickly, losing sight of the standards-compliance imperative can inhibit future flexibility and rapid response to changing industry requirements and opportunities. It appears that the “mechanics” are in place for VOD advertising success with workflow adaptations and resolution of business issues the current challenge.

Another interesting and important development is a move from “fragmentation” to “consolidation” in the cable VOD businesses. For reporting, the formerly fragmented process of collecting and correlating data from hundreds of sources (different MSOs / multiple systems) has been de-facto centralized to a single VOD reporting entity which has been able to streamline and debug the process while acting as a centralized repository for all VOD view data to the benefit of content providers. Anticipating the move to and complexity of a DAI world, a national platform is being put in place to handle ad decisions, ad placement, and ad impressions reporting across multiple MSOs – enabling the rapid deployment of ad placements (like ad interconnects have done for the linear model) and rapid campaign feedback that is found with internet-based advertising (where viewer’s can access a few ISPs for content delivered over a variety of networks).
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<tr>
<td><strong>Advertising Campaign and asset planning</strong></td>
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<tr>
<td>Integrate planning, scheduling and billing systems into VOD servers</td>
<td>No significant progress</td>
<td>Significant progress. VOD vendors have added decision modules to servers and all are providing links via SCTE 130</td>
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<tr>
<td>Content providers and MSOs work with their planning vendors to scope and develop VOD modules to the planning system</td>
<td>No significant progress</td>
<td>Progress. Companies like FreeWheel have interfaced with VOD systems and can export data via CableLabs and SCTE 130 specs</td>
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<td>MSOs work with their VOD insertion vendors and traffic vendors to develop interfaces to their VOD system.</td>
<td>Some progress. TWC has implemented &quot;pseudo-DAI&quot; (manually edit together ad pods in response to demand) and has been working with vendors like OpenTV and Ericsson to integrate.</td>
<td>Progress. Trafficking can serve as an input to the national platform and eventually drives the VOD server systems via SCTE 130.</td>
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<tr>
<td>Content providers and MSOs work with their billing vendors to scope and develop VOD modules to traffic and billing</td>
<td>Some progress.</td>
<td>Progress. Interfaces from DAI national platform will offer file level interfaces to billing systems.</td>
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<td><strong>VOD Asset Scheduling</strong></td>
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<td>Adapt scheduling system to VOD needs and then link it into linear systems along the full workflow process</td>
<td>Some progress. See TWC example above.</td>
<td>Progress. Some plan to link into the digital (broadband/mobile) side of their business instead of the TV side. Some content providers will link to the TV (linear) side.</td>
</tr>
<tr>
<td>Content providers and MSOs work with vendor communities to get VOD on their road map.</td>
<td>No significant progress.</td>
<td>Progress. Many vendors (campaign mgmt, billing, traffic, etc) claim to have modules to support DAI and claim compliance with CableLabs and SCTE 130 specs.</td>
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<tr>
<td>Content providers, MSOs and scheduling vendors adapt to the AAAAs Ad ID standards.</td>
<td>Some progress. Some content providers provide Ad-ID descriptors in their reports to advertisers.</td>
<td>Some progress. The asset preparation phase still needs to include in metadata. Service firms are capable of supporting.</td>
</tr>
<tr>
<td>Make VOD schedule delivery and creative changes time frame more flexible in order to adapt to ad sales needs.</td>
<td>Some progress. Faster turnaround in content prep and propagation have made D4+ options more flexible.</td>
<td>Progress. This is a key driver to DAI.</td>
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<td><strong>CTAM 2009 White Paper Recommendations</strong></td>
<td><strong>2012 Static Process Progress</strong></td>
<td><strong>2012 DAI Progress</strong></td>
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<td><strong>VOD Asset Preparation and Processing</strong></td>
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<tr>
<td>All parties commit to dedicated resources and monies for the VOD platform to ensure faster delivery times as demand increases.</td>
<td>Progress. System and network upgrades have been implemented.</td>
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<tr>
<td>MSOs and appropriate parties commit to faster ingestion and propagation times, with resources dedicated to enhancing turnaround times</td>
<td>Progress. System and network upgrades have been implemented.</td>
<td>Progress. System and network upgrades have been implemented.</td>
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<td>Content providers work with vendors to develop closed captioning solutions for VOD</td>
<td>Progress. Pressure by the FCC and better systems for merging CC data with content in a shortened timeframe have virtually resolved this issue.</td>
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<td>Looking ahead to interactive and addressable dynamic advertising needs, industry groups (including AAAA) work with CableLabs to drive the development of CL 2.1 metadata specs for content and advertising assets, and fully incorporate the AAAAs Ad ID initiative</td>
<td>Progress. CableLabs VOD metadata 3.0 addressed these issues.</td>
<td>Progress. CableLabs VOD metadata 3.0 addressed these issues.</td>
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<td><strong>VOD Views, Data Reporting, Posting and Billing</strong></td>
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<td>MSOs establish a standard for reporting views and orders and set an effective date for meeting the required standards</td>
<td>Complete. Views have been agreed to but the definition of views is still being debated (include &quot;rewind/FF/pause?&quot;)</td>
<td>N/A - impressions will be directly summarized.</td>
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<td>MSOs establish a standard for metadata fields ingested and propagated and have standards for the data contained in the reporting data streams to third-party vendors, including, but not limited to, requirements for package asset ID and advertising ID</td>
<td>Progress. CableLabs VOD metadata 3.0 addressed these issues, but participants have been slow to adopt.</td>
<td>Progress. CableLabs VOD metadata 3.0 and EIDR addressed these issues, but participants have been slow to adopt.</td>
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<td>VOD server vendors incorporate zip code-level data tied to set top box (STB) usage data that can be reported in server data reporting streams and be time stamped.</td>
<td>Progress. About 83% of transactions will include zip code-level data by 3Q, 2012.</td>
<td>Progress. This should be fully implemented with full scale rollout of DAI.</td>
</tr>
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<td>MSOs divorce FOD view data reporting from TOD reporting, and, if reporting FOD views on a monthly basis, commit to reporting daily views on a weekly basis.</td>
<td>Complete. Daily views are available within four days.</td>
<td>N/A - impressions will be directly summarized.</td>
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Looking Forward

There is a growing consensus among the key stakeholders in the cable VOD business that, for the most part, the key technical underpinnings necessary for successful deployment of dynamic ad Insertion and targeted advertising are in place. The past three years have seen:

- the physical infrastructure grow in bandwidth, sophistication, and reliability.
- the software and systems that are utilized to manage campaigns, content, billing, and reporting become more flexible and adaptable – using web-based interfaces and remote, secure access.
- the development of standards that can accommodate a variety of implementation options, content types, and network architectures.
- the emergence of focused service firms who are dedicated to the business of VOD advertising and provide valuable expertise to facilitate successful deployments and service launches.

With the technical backdrop for a successful industry rapidly firming up, there still remain challenges ahead that need to be met to ensure that the industry maximizes the revenue potential from this attractive VOD business model. Looking forward, there needs to be focus on utilizing the standards that have been published and in fine-tuning the operational and business issues necessary for streamlined and profitable ventures.

Standards

Standards such as SCTE130, Cablelabs Content 3.0, and Asset Management Interface (AMI) 3.0 form the basis for seamlessly communicating the data and signaling necessary to both support the current distribution models and enable the migration of models as business climates change and new opportunities present themselves. In addition, standards encourage new business entrants and suppliers – which serve to strengthen the solutions provided to the industry’s clients.

CableLabs Content 3.0 provides a new framework for associating a wide range of descriptive and signaling data to program content, ad content and packages – but adoption is progressing slowly. One facility of this standard can be utilized right away for the benefit of DAI and to smooth potential operational snags is the definition of insertion marks as the content is prepared – to minimize downstream editing and to condition the content for future ad insertion opportunities. Also, CableLabs Content 3.0 provides the foundation for agreement upon standard methods for identifying program content and ad content. In the past, descriptive data fields had to be “hijacked” to fill a variety of distribution needs for operators – which made it more difficult to generate accurate reports for a given campaign. New, expanded fields for programs and ads – and a concerted effort to settle on EIDR and Ad ID naming conventions – means that the industry is very close to solving one of the more vexing problems associated with the control, management, reporting, and billing issues of complex content distribution and ad insertion – as well as easing the path toward multi-platform ad insertion.

SCTE 130 is one of the most important standards for the industry, providing the “glue” between the various entities that make up the ad insertion ecosystem – allowing the signaling between services such as ad management, ad decisions, content information, and subscriber information. Full use of this standard moves the industry closer to the attractiveness of internet-based digital ads, but with the cable industry’s advantage of premium content. One example of a highly leveraged facility enabled by SCTE130 is the flexible addition and modification of ad Placement Opportunities (POs). Today, to
facilitate rollouts and lacking fully deployed placement decision services, the placement opportunities may be “hard coded” to reflect early business arrangements between operators and content providers. In the future, the built-in provisions of SCTE 130 will support placement opportunity authoring so that, with the attendant rollout of Placement Opportunity Information Services, the changing value of content and the presentation of new advertising strategies can be taken into account and placement opportunities can be modified on the fly to maximize ad revenue for a given campaign. Fully supporting SCTE130 needs to be a long term commitment to ensure the robust development and full realization of VOD ad insertion as a highly profitable business.

Lastly, the industry faces an ever-expanding asset (content and ads) management challenge as VOD content instances increase and dynamic ad content begins to proliferate. The Asset Management Interface (AMI) 3.0 standard – working in conjunction with CableLabs Content 3.0 – provides several important mechanisms for a framework for tracking content. When fully implemented (and, perhaps, extended) AMI3.0 can support the querying and announcement of the state of content as it resides within the Service Provider’s network. With tens of thousands of content instances in play, it’s inevitable that log jams and misplacements will occur – and with that lost ad insertion opportunities and viewership. With AMI3.0 implemented throughout the network, the state of various contents (verified, deleted, etc) can be “announced” to the network and the “listening” systems can record and track the content whereabouts. It is certainly advisable to begin considering AMI3.0 implementation before the incidence of new DAI rollouts overwhelms current tracking techniques.

Oftentimes the business tradeoffs between taking advantage of immediate deployment opportunities and spending time and resources on standards compliance can be challenging. While the industry cannot wait until all the elements of every standard are practically enforceable, it is important to have standards’ compliance as a priority and make regular headway towards full adoption of the valuable industry standards.

**Future Business Issues**

While there is never any real limit to the number and range of business issues that arise in a market as complex and competitive as advertising, there are a few that face the industry now that deserve careful consideration and discussion among the stakeholders: how to sell DAI and targeted ad opportunities, how to value these opportunities, and how to measure these opportunities.

A number of content providers have traditional linear ad sales forces as well as digital ad sales teams to deal with broadband advertising and content. VOD DAI is a cross between these two paradigms – presenting the potential flexibility of broadband ad insertion crossed with the availability of very high value content. The traditional linear sales team may exhibit more experience with the unique offering of high value VOD, but may not be conversant with the workflow and idiosyncrasies of rapidly changing audiences. The digital broadband sales team, on the other hand, may be focused in these early days at establishing footprint and trying to rise above the market clutter. Of course, the question is more than simply deciding which individuals to deploy to handle the two different types of ad sales – the question is how to position and leverage the high value content in order to obtain significantly higher value for delivering a targeted and more affluent audience. The metrics for valuing an “impression” via broadband against an impression via broadcast/cable VOD needs to be determined at an early date so that real revenue opportunity is not left on the table as deployments pick up. Differentiating between DAI
VOD and broadband will be important as more multi-platform deployments take shape and content providers and operators offer a wide array of opportunities to advertisers.

Another goal will be to keep differentiated “upfront” and “scatter” markets and avoid DAI VOD from being categorized as a perpetual scatter market. Since the “upfront” market is more lucrative than the “scatter” market, keeping them differentiated and properly valued becomes another business issue to consider.

Lastly, the currency and measurement of DAI VOD is an important issue. Deciding the exact definition of an “impression” given some of the measurement challenges in dealing with pause and rewind may need to be considered when deciding to attempt to value impressions versus metrics such as gross rating and targeted rating points which are based on the more familiar, linear polling-type content valuing schemes. It may very well turn out that a mixture of measurement schemes will need to be developed presented to match the wide variety of content value presented with, for example, current-content VOD and archived VOD programming.

**Summary**

Where advertising on the VOD tier was an “iffy” proposition a few years ago, it’s now generally agreed that, with the advent of DAI and, in the future, targeting, it stands to be a new, significant revenue opportunity for content providers and operators. With the technical and structural “heavy lifting” in place, a focus on operational issues, business issues, and the long term value of universal standards will go a long way toward ensuring the financial success of this endeavor.