

SMPTE Meeting Presentation

The Pipe Dream Becomes Real: Advertising Workflows Come of Age

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Abstract. *The past year has been, quite possibly, the most eventful ever in the development of efficient advertising workflows. We can now embed a digital version of the infamous advertising slate in delivered commercials, using the Advanced Media Workflow Association's AS-12. BXF can be used to exchange not only the schedule of commercials, but instructions to move them from point A to B, as well as move the full complement of their metadata. BXF is also developing the ability to move copy rotation instructions from agency to broadcaster, filling the biggest gap existing today in the workflow. Ad-ID bridges all of this, making unique commercial identification simple.*

With an ever-expanding array of delivery platforms, as well as targeted advertising, maximum efficiency for advertising workflows has gone from a nice idea to a must-have. The good news is that we now have the tools to make it all work.

We'll show how the whole thing fits together today, using industry standard approaches, making the pipe dream of automated advertising workflows a reality.

Keywords. Ad-ID, Workflow, Advertising, BXF, MXF, Agency, Traffic.

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Introduction

In the world of video advertising, smooth and automated workflows have been one of the most neglected areas in our business for years. Practices that have been in place for decades have stubbornly remained. Manual re-entry of data has been accepted as “the way it’s always been”, and something that simply couldn’t be avoided. Efforts have sprouted up over the years, and then died quiet deaths, with the tipping point for workable solutions never quite being reached.

In 2009, a paper was presented at the NAB Broadcast Engineering Conference called “Are Fully Digital Workflows a Pipe Dream?”, which began with the statement that players in the media business (such as broadcasters, program producers/distributors, ad agencies, and commercial producers) don’t believe that technologists can integrate all their systems. We have arrived at a place where the dots are connecting to give renewed hope to the industry.

There has been consensus throughout our business that this is an area desperately in need of solutions. One of the main problems has been that a few key elements of the solution have always been missing.

We have finally reached the point where things are falling into place, allowing complete solutions to be implemented. Could it be that the pipe dream is about to come true?

Motivation for a Solution

In order to enable change, particularly something as dramatic as the replacement of manual advertising-related workflows with automated ones, the proper motivation is needed. This doesn’t come from vendors, or a few people with a good idea. Motivation must come from those who feel the pain the most: the users.

When more must be done with fewer resources, it’s necessary to examine automating processes. The economic situation of the past several years has led to resources being reduced, with those that remain stretched to their limits.

In addition, there has been pressure for broadcasters to employ their assets more profitably than ever before. Advances in alternative methods of delivery to consumers, such as Mobile DTV and Over the Top Television, have opened up new avenues for broadcasters to do this. However, advertising is a key element in monetizing these new channels.

So the flow of advertising from creation to consumption, and then to billing, is actually increasing in volume, but has fewer resources to manage it. To some, this may sound like a looming disaster, but to others, it has meant an opportunity.

Bob Liodice, President of the Association of National Advertisers (ANA), encapsulates the situation perfectly: “Workflows are critically important. The simpler we make the workflow, the more efficient we’re going to be, the more capable we’re going to be, the more productive we’re going to be, and that’s what frees up dollars to be reinvesting in the plethora of new and emerging media.”

Operations Administration and Measurement

Advertising workflows can be categorized into three areas: Operations, Administration, and Measurement.

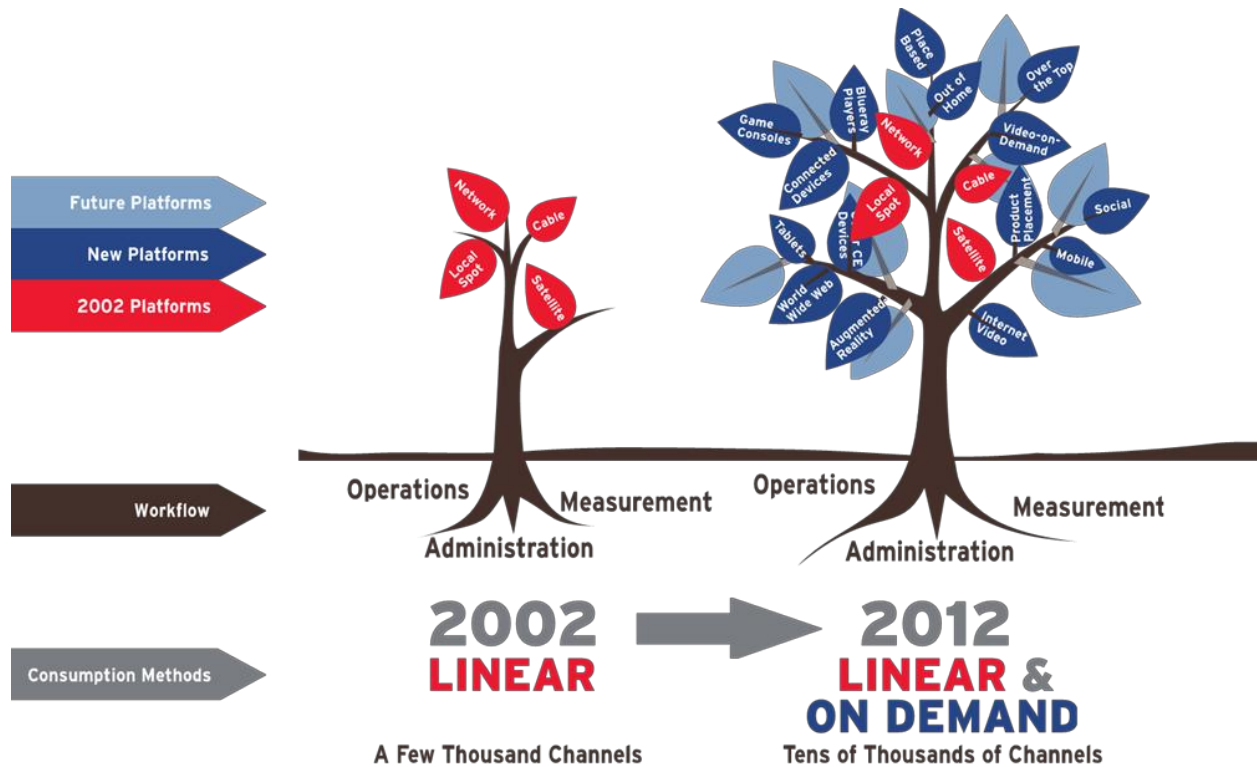


Figure 1. The three categories of advertising workflow

When just a few media platforms were available, there were a few hundred channel choices and nearly all media was consumed on a linear basis. Now, media is also consumed on an on-demand basis, through a multitude of media platforms and tens of thousands of channel choices. This explosive growth in the number of channels will create a vastly more complex ecosystem unless we listen to Mr. Liodice, and simplify our workflows.

We are at a historic juncture in our supply chain's history. The entire advertising supply chain sees the need to increase speed and efficiency in the production process, enable multi-platform campaigns, and reduce cost. We must also enable interactivity and addressability, and improve cross-platform measurement.

This is a consistent and common message across our supply chain. The recently released 2012 Big Broadcast Survey reinforces that there are common areas of focus in or supply chain. The Global Trend Index which shows that people are talking about "multi-platform content delivery" and "file-based/tapeless workflows", as the numbers 1 & 2 topics, and the Global Project Index shows "Install of enhance workflow / asset management systems" is number 2 in in terms of what they are actually currently spending money on.

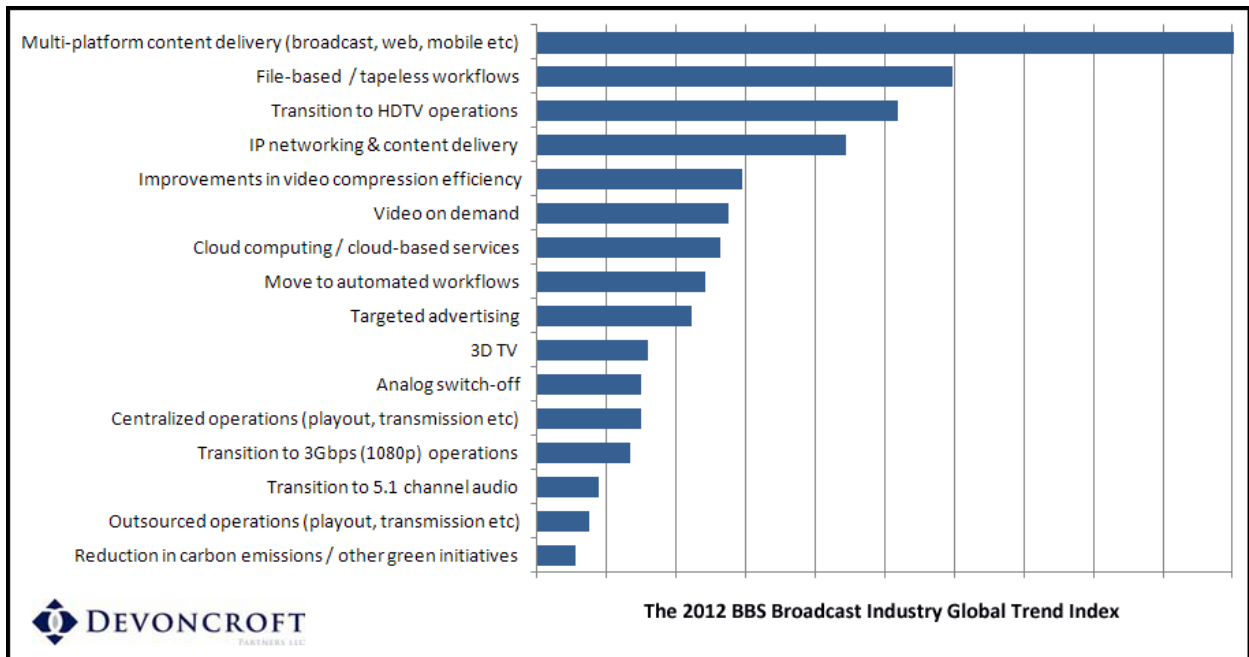


Figure 2 – Big Broadcast Survey 2012 Global Trend Index

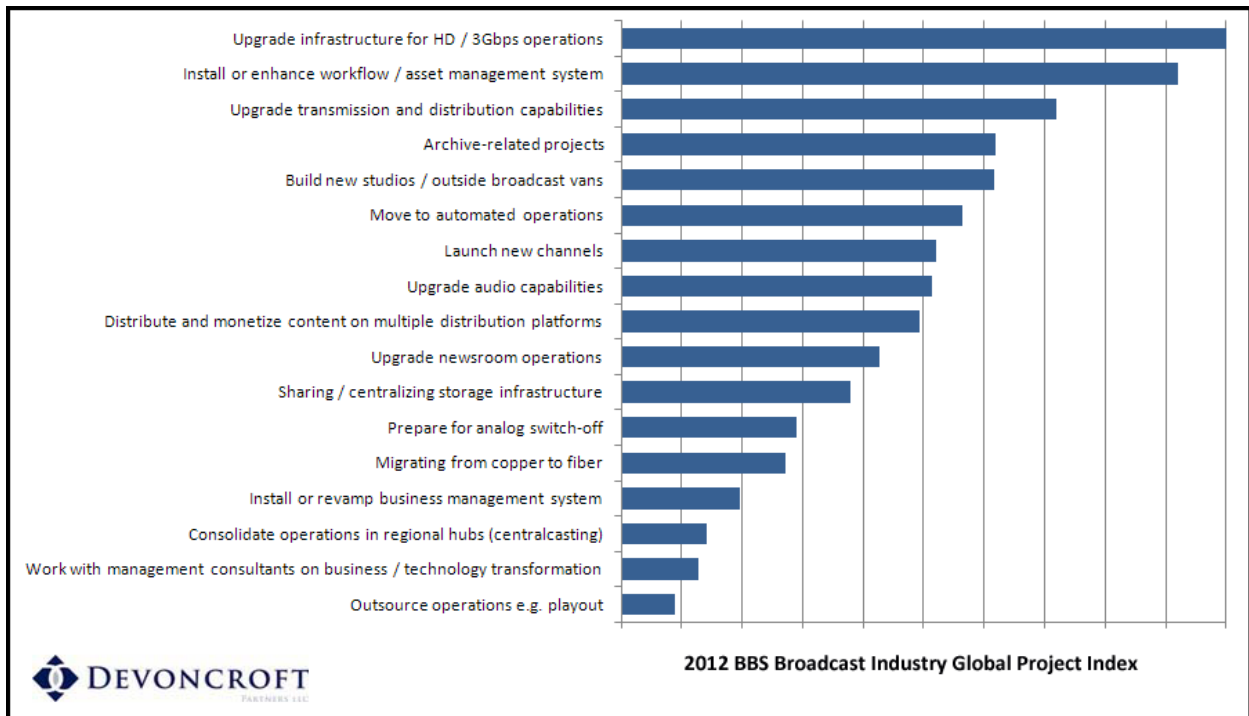


Figure 3- Big Broadcast Survey Global Project Index

We must work together to develop the commercial models for multi-platform content delivery so broadcasters and content owners can make real money from it, as opposed to subscription OTT services like Netflix / iTunes. There are several excellent examples of Ad Supported or Hybrid (Ad Supported and subscription) OTT, and online services like Hulu, Hulu Plus, Crackle, Break.com, not to mention the

broadcasters own online sites, which are gaining popularity. Our supply chain efforts feed directly into and enable these trends.

AMWA has released AS-12, “The Commercial Delivery Format,” to address operational efficiency.

SMPTE is working on an extension to BXF to include commercial instructions, to address administrative efficiency.

The Coalition for Innovative Media Measurement (CIMM), as part of their Trackable Asset Cross-platform Identification (TAXI) initiative, has identified several key attributes of asset identification that must be included if fully digital file-based advertising workflows are to be adopted as a standard within our industry.

CIMM has these key attributes of asset identification:

- Simple: The less complex the better.
- Interoperable: Domain-specific metadata platforms must be fully interoperable at a layer transparent to the people, processes, and technologies involved in managing assets.
- Inextricably bound: Technology standards must be created so that IDs can be permanently linked to their associated assets without degrading quality.
- Extensible: There must be a capability to identify multiple content types, versions, and formats in a flexible enough manner to accommodate emerging and future media asset types.
- Open and global: Domain-specific asset identification must be governed by registries accessible to all ecosystem participants and suppliers world-wide. The registries must adhere to standards that M&E industry companies and their technology suppliers can utilize across a global footprint.
- Cost-effective: Domain-specific asset identification must be inexpensive to adopt and operate.

Each of these initiatives (AMWA AS-12, BXF Commercial Instructions, and CIMM/TAXI) have Ad-ID at the center.

Ad-ID

Just as the UPC code and its associated descriptive metadata is essential for the efficient delivery of physical goods, Advertising Digital Identification (Ad-ID) and its metadata are the foundation for improving the digital delivery of ads across platforms, and managing and measuring cross-platform advertising.

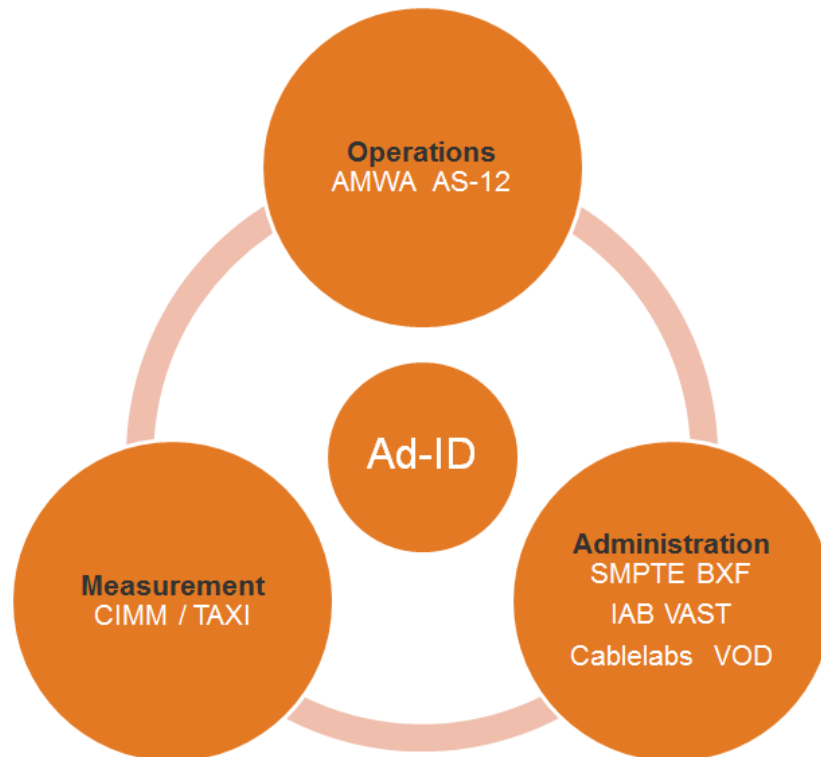


Figure 4. Ad-ID and the three categories of advertising workflow

Ad-ID is a joint venture of the American Association of Advertising Agencies (4A's) and the Association of National Advertisers (ANA). Used by more than 800 advertisers, Ad-ID is a web-based system that generates a unique identifying code for each advertising asset, and stores over 70 fields of metadata. Along with its centralized information system, and web services designed for access to metadata, Ad-ID is critical to managing advertising workflow, improving systems and processes, measuring performance, and generating cost savings.

Clyde Smith of Fox puts it best: "If you can't identify it, you can't operationalize or measure it; if you can't measure it, you can't monetize it. Identity is a key enabler for operational orchestration and measurement as well as management."

Our industry has traditionally lived with workarounds, short-term fixes, and stop-gap solutions.

Labor is thrown at our problems, and with that comes excessive checking and balancing, and fixing errors.

In today's ad ecosystem, an ad is created, and throughout its economic useful life, it will be identified over 100 or so ways, between house coding systems, identification used in audience measurement, rekeying errors, and the fact that some of our emerging video platforms do not require unique identification.

In the world of packaged goods, a good analogy would be if each manufacturer decided to invent their own way to identify themselves. One might use an eight digit code. Another might use a variety of emoticons plus numbers, and yet another might choose to use letters and numbers and dashes and multiplication signs.

This is what our ecosystem has done by “accepting whatever is given to them” in terms of advertising asset identification. ISCI and other random codes are not guaranteed to be unique, and have no associated metadata. Agencies and advertisers want the media industry to tell them that Ad-ID is better than using random codes. It’s time to start acting like a supply chain, and advocate the foundational practices that make us all more efficient.

The Material eXchange Format and AS-12

MXF is one of the more important file-based workflow technologies to emerge in recent years. Its standardized wrapping of audio/video essence and related metadata enables interoperability among a large variety of systems that touch content from production to distribution.

Application Specifications (AS) from the Advanced Media Workflow Association (AMWA) have enabled MXF to be deployed with a great deal of success. Several different Application Specifications have been developed over the past few years which constrain MXF to particular applications in our business. AS-12 is one of the most recent specifications to be released by AMWA. Based on the program exchange specification AS-03, it is specifically targeted at standardizing the exchange of advertising content.

At the center of AS-12 is the digital commercial slate, which standardizes the information that had been included in the old analog commercial slate. The analog slate caused an inordinate amount of error-prone human intervention. In addition, much of the digital or IP-delivered media has no commercial slate, and therefore no standardized metadata.

Restricted Feature	MXF Parameters
Video Bit Rate	SD/HD 5-50 Mb/s
Codec Format	MPEG2, H.264 LGOP
MXF Pattern	Op-1a
Audio channels	Up to 16
Metadata “Slate” Scheme	Ad-ID based slate Metadata
Closed Caption	CEA 608/708

Figure 5. Features of AS-12

The first release of AS-12 supports Ad-ID for the United States market. AS-12 can also allow definition of other recognized advertising identification schema through use of a “shim”

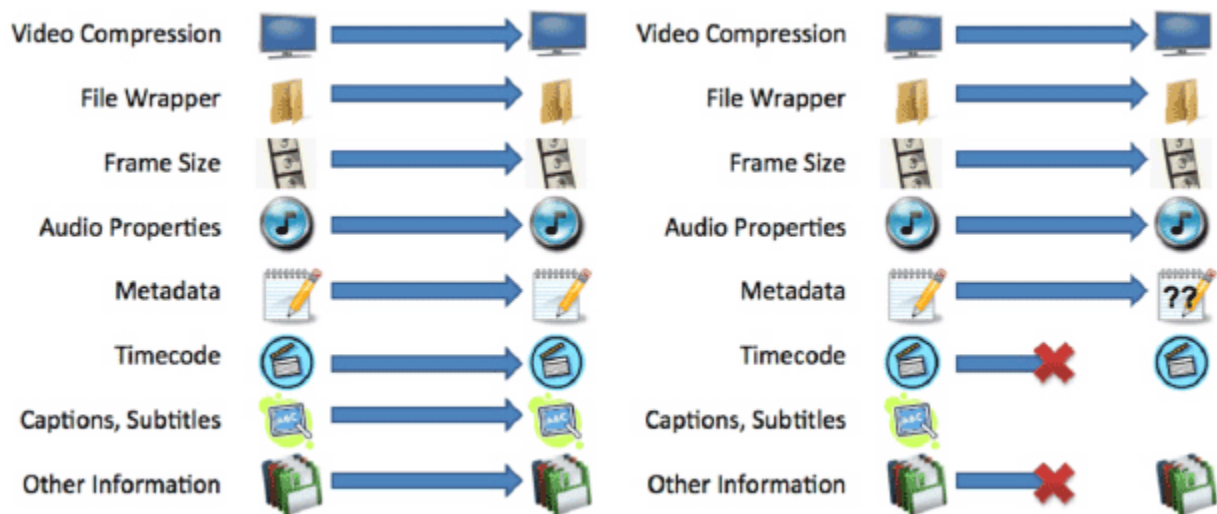


Figure 6. Components of AS-12

By establishing AS-12 and MXF as the mezzanine format for commercials, we begin to reap the benefits of fully digital file-based commercial workflows.

The supply chain can make transcoding decisions across platforms to deliver the highest technical quality possible.

Over 95% of video advertising that appears across platforms begins as television ads. This represents an opportunity to make smart transcoding decisions as media outlets strive to develop cross-platform digital asset management systems.

It's an opportunity to create content once and deliver it everywhere. Broadcast automation and online ad server platforms can now work together.

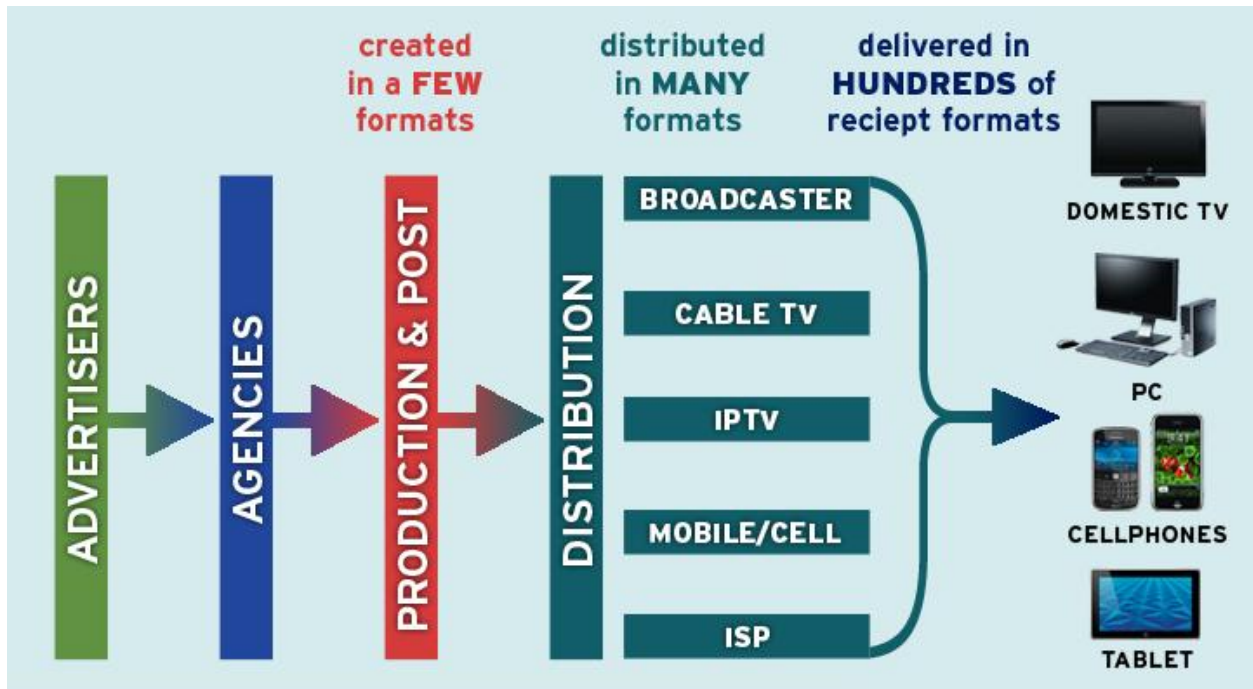


Figure 7. Creation, Distribution, and Delivery Formats

The Broadcast eXchange Format

BXF, as it's commonly known, was first published by the Society of Motion Picture and Television Engineers (SMPTE) in 2008. Since then, it has become one of SMPTE's success stories. Developed with the help of hundreds of participants, representing dozens of organizations, BXF has been adopted by virtually all the major suppliers of sales, traffic, billing, asset management, and automation systems.

BXF standardizes exchanges of schedule, as-run, and content-related metadata among systems, touching advertising workflows at many points in the chain. Following this success in automating advertising workflows, the SMPTE Working Group responsible for BXF has decided to take the next logical step and tackle the communication of advertising copy instructions from advertising agencies to media outlets.

This part of the advertising workflow is currently accomplished using faxes and emails. Instructions are sent to media outlets, typically printed out, then re-typed into the systems that manage the business side of the placement of advertising on schedules. This not only takes time and money which broadcasters really don't have, but also inevitably introduces errors into the process. This can be a really big deal, both in the volume of advertising we're dealing with and the very high value of many of these ads.

As part of the current BXF 3.0 effort within SMPTE, the Working Group is developing schema extensions to help in taking this workflow from the fax/email approach to an automated flow of XML data.

Interactive Advertising Bureau (IAB) Digital Video Ad Serving Template (VAST)

The IAB's Video Ad Serving Template (VAST) specification is a universal XML schema for serving ads to digital video players, and describes expected video player behavior when executing VAST-formatted ad responses. VAST provides a common protocol that enables ad servers to use a single ad response format across multiple publishers/video players.

VAST version 3.0 specifies an identifier for the creative, which accepts Ad-ID as a valid value. Work needs to be done to reinforce this area and provide the underpinnings for cross-platform video ad identification, and the reference to Ad-ID and the associated descriptive metadata.

Cablelabs VOD Metadata

The VOD Metadata project is a cable television industry and cross-industry-wide effort to specify the metadata and interfaces for distribution of video-on-demand (VOD) material from multiple content providers to cable operators. The advertising metadata schema references, and makes use of, Ad-ID metadata fields.

Conclusion

It would seem that we finally have the "perfect storm" to realize the dream of fully automated advertising workflows. An increasing volume of ads but limited resources provides motivation, while new key technical components have emerged.

The life of a commercial asset has nine stages: Pre-production, Production, Post-production, Deliver, Ingest, Transcode, Automation, Play out and Measurement. The ID, and associated metadata for a commercial should be available unchanged through the Advertising workflow. That way, the commercial will be correctly identified for all necessary purposes, and the entire ecosystem derives the benefit.

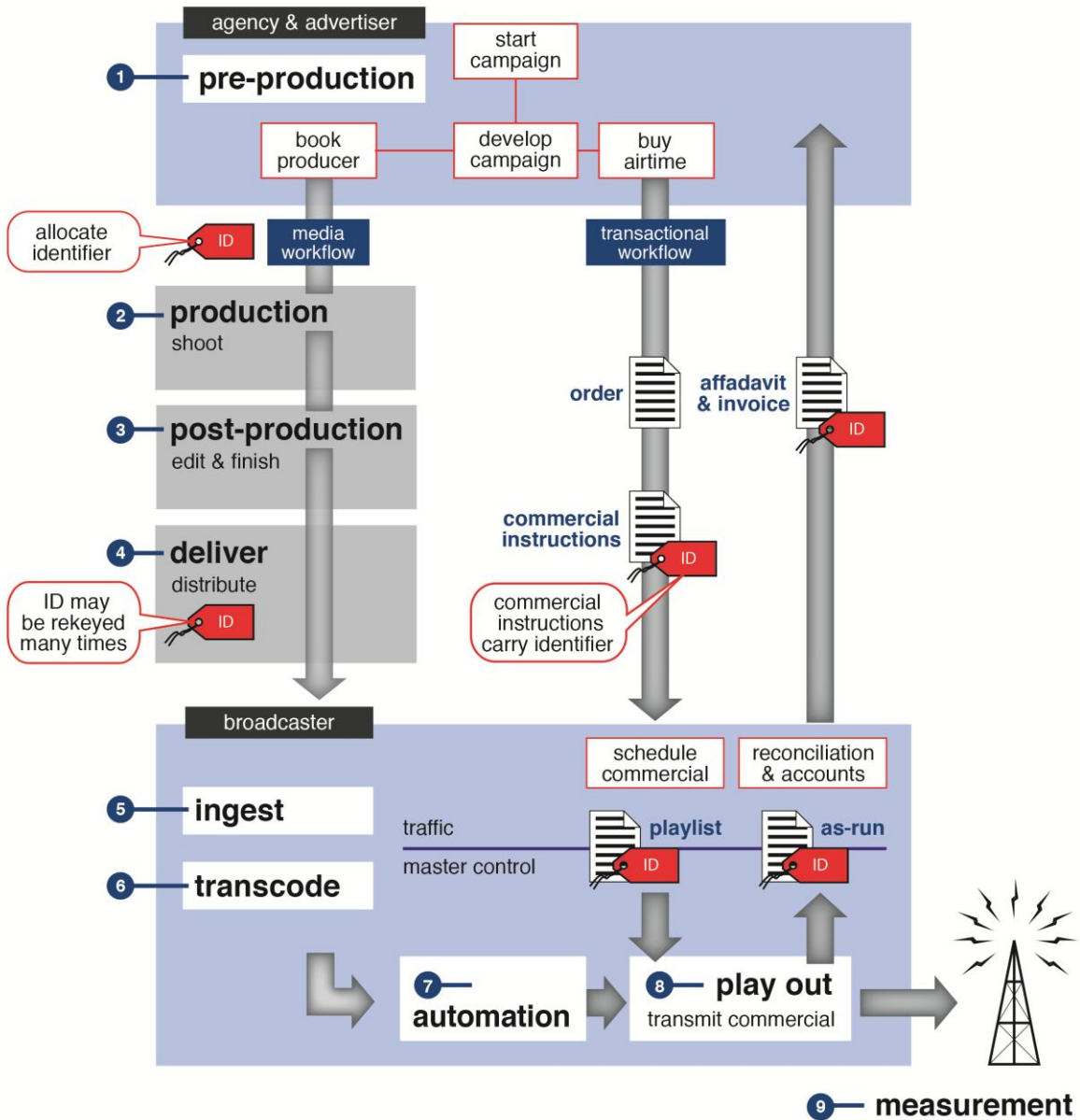


Figure 8. Lifecycle of an ad

We now have a toolkit in BFX 3.0 that meets the needs of the file-based media workflow of a commercial in AMWA AS-12, and of the transactional workflow for the movement of associated documentation (logging and tracking of orders/changes, commercial instructions, log time confirmation, invoices). CIMM/TAXI provides a framework for measurement.

We now have a way to fully automate these workflows, eliminating the costly and time-consuming manual re-entry of advertising-related data. We can manage the plethora of new distribution media, and are well-positioned to utilize their ability to enhance advertising revenue, while reducing costs.

Articles Published in Proceedings

C. Lennon and H. Geller, "Are Fully Digital Workflows a Pipedream?", *NAB Broadcast Engineering Conference Proceedings, 2009*.

C. Lennon and H. Geller, "Content ID — The Elephant in the Room" *SMPTE Technical Conference Proceedings, 2009*.

C. Lennon and H. Geller, "Smooth Asset Workflows, Bigfoot, and UFOs," *SMPTE Technical Conference Proceedings, 2011*.

D. Austerberry, "The Life of a Commercial," AMWA white paper, 2012

CIMM Final Report: TAXI Success Criteria and Suggested Deployment Phases, March 2011

The Essentials of Video Transcoding, 2012 Telestream, Inc.

Standards

SMPTE 2021, Parts 1-9, "Broadcast eXchange Format," 2011.