

# MOVING THE MEDIA INDUSTRY FORWARD: DEVELOPING A DATA TRANSMISSION STANDARD



**Introduction** The desire for efficiency drives the creation of standards. On a daily basis, whether personally or professionally, we interact with industries and companies that have successfully created and implemented data standards. As consumers, we simply enjoy the end benefit. For example:

#### **A visit to an Automatic Teller Machine (ATM)**

Using a standard keypad, a consumer inputs a 4-digit Personal Identification Number, triggering a series of communications between banks and financial institutions across the state, nation, or even across the globe. In seconds, native currency is dispensed from the ATM.

#### **A daily commute using a variety of roads and bridges.**

With a small device mounted on the car's windshield, a driver accelerates past the line of morning commuters waiting to pay the bridge toll with cash. On the drive home that evening, the driver stops to fill up with gas where payment is again automatically logged and debited from a prepaid E-Z Pass account, all without ever leaving the car.

Like banking and transportation, the media landscape has changed dramatically. The last twenty years have seen significant consolidation of buyers and sellers as well as considerable fragmentation of consumer media usage. The result is that today's "typical" media buy bears little resemblance to its relatives of two decades ago.

Today, an average media buy may take into account a multi-quarter, multi-media campaign that will change ten times before it even begins running. Executing across this wealth of media may involve dozens of media sellers, several rep firms, a host of both general and specialized agencies, and countless keystrokes. At the same time, all participants within the media business – from the smallest client to the largest seller – increasingly expect immediate, accurate access to their relevant data.

This situation begs for a way to make what is now a series of time-consuming, error-prone processes more efficient.

A data transmission standard provides the foundation for all parties to a transaction to speak the same language when communicating with each other. Adopting such a standard

does not change an organization's internal processes or procedures nor does it affect what those organizations do with the data once they have it; internal processes and the ultimate use of the data are independent of the data transmission standard.

The benefits of creating and adopting an open, comprehensive data transmission standard are significant:

- Increased data accuracy, across all involved business processes
- Decreased personnel time spent on low-value activities, e.g. reformatting, re-keying
- Lowered cost of communications between existing trading partners
- Faster implementation and lowered cost when adding new trading partners
- Flexibility for standards to evolve in response to industry needs

The purpose of this paper is to discuss and define a data transmission standard as it applies to the media industry and outline how such a standard might be implemented and maintained.

#### **What Exactly Is A Data Transmission Standard?**

A data transmission standard is an agreement among trading partners, typically across an entire industry or within a vertical industry segment, on the structure and format of data included in the various communications surrounding the transaction of their business. XML is currently the most promising language for creating a data standard but standards can be executed in any language.

For most industries, the formation of a data standard is an attempt to reduce the inaccuracy and inefficiency endemic to any series of business processes where personnel are forced to manipulate and re-key information from system to system, among a variety of trading partners. A data standard is usually developed and maintained by some form of non-partisan trade association or industry consortium and is made freely available to anyone who wants to use it.

For auto parts sellers, for example, this could mean that participating business partners would agree on the data elements included whenever a new order or invoice for tires was transmitted. Those data elements might include:

DATA ELEMENT	DESCRIPTION	SAMPLE VALUE
sidewallStyle	style of tire sidewall	white wall
tireWeight	total weight of the tire, without rims, in pounds	28.0
tireDiameter	total diameter of the tire, in inches	24.8
tireWidth	total width of the tire, in inches	10.4
treadWidth	width of tire tread, in inches	9.6
treadDepth	depth, in 1/32", of the tread	12
dealerPrice	dealer price per single tire, in U.S. dollars	78.00

A sample data transmission standard would not only apply to the type of data element being communicated but also dictate the format of that data element as well as the format of the value associated with it.

For instance, if the auto industry agreed that when communicated between entities, "tireWidth" was always spelled as one word with lowercase characters except for an uppercase "W," then sellers and vendors electronically sending that element over as "t\_width," "Tyre\_Width," or "tirewidth" would be required to resend in the proper format before the system would validate the order or invoice. This consistency helps reduce confusion and data inaccuracy when one sender assumes that "Width" will always apply to overall tire width while the receiving party assumes that "Width" refers to the tread width.

Even the format of the value associated with a specific element can be strictly defined. In the case of "tireWidth," it may be decided that it will never be fewer than three total characters – at least one numeric, a period, and a second numeric, such as "8.7" or "6.0". The maximum character set can also be defined so that values such as "12.8" and "13.0" are valid while "110.7" is not. Again, this strict definition of the data format and values within allows for greater data accuracy because automated systems can more easily and quickly validate the data that should be present in a tire order. In turn, this automated validation frees up personnel to focus on value-added tasks – increasing sales, servicing accounts, and preparing for upcoming initiatives.

**Does Everything Change When A Company Adopts A Data Standard?** While a data standard tries to form a foundation for common communication, it does not attempt to unify the processes across the full business transaction chain. Even though an understanding and appreciation of the underlying processes is important, all sellers, rep firms, agencies, and vendors do not need to agree on the exact workflow surrounding how, for example, an invoice is generated. Instead, they only need to agree on the structure and content of the data elements contained in an invoice (and other targeted documents and transactions) when it is transmitted between business partners.

Similarly, a data standard is not concerned with what happens to the information once it has been transmitted and received; the data format applies only to when the data is being transmitted. Imagine three scenarios for what happens to the information within an "invoice" once it has been successfully validated and received:

- A television station stores invoice information in an Oracle9i database under a table titled "CLIENT\_INVOICE"
- An agency displays invoice-related information to senior media managers in a Web browser under the title "Seller Invoices"
- A magazine prints invoices with "Final Invoice" as the header

All of these perfectly valid internal uses of invoice information are independent of how it is transmitted (as "invoice") among the various partners who have adopted the data transmission standard.

Because a data transmission standard is neither a single, unified process nor a standard for data use and storage, it does not mandate how data is stored locally; it is not a data model. Whether one agency uses a flat-file, mainframe database whose data model was created twenty years ago while another uses the latest flavor of Oracle in a more modern, fully normalized, relational database is entirely irrelevant to the creation of a data transmission standard.

**Creating A Standard** In the creation of a standard, it is critical that it does not come from a single body, and/or represent the sole interests of either side of the transaction process or a single third-party vendor. Participation from parties across the full transaction spectrum is needed so that agreed-upon data elements represent all media and all appropriate transactions.

There are several possible approaches to creating a comprehensive data standard, all of which include consulting with industry trade groups to align with existing and upcoming data initiatives. As mentioned, a valid approach does not necessitate agreement on a single, unified process. However, appreciation and in-depth knowledge of the various targeted processes and associated data elements allows for a more robust first draft.

One comprehensive approach for building a standard is as follows:

1. Identify valid/targeted transaction sets and the surrounding processes
2. Collect and analyze any and all existing data standards efforts across the industry or within vertical industry segments
3. Align cross-industry efforts and unify naming formats and structure
4. Perform gap analysis to prioritize transactions and data elements
5. Validate and gather feedback through focus groups and interviews with industry trade organizations
6. Create a standard that is consistent with the latest published and recognized data structure
7. Create a data standards organization, with appropriate industry representation, to elicit ongoing feedback and maintain standards
8. Release proposed standards for feedback
9. Release standards to industry at large

**Creating A Cross-Media Standard** In the formation of a standard for the media industry, it is critical to comprehend the needs of all vertical media types; from print to Internet, from broadcast to out-of-home.

In turn, the vertical customization allows common data to be identified and translated into a true cross-media standard. Without this cross-media focus, much of the benefit of a standard will be lost.

While it might reduce some discrepancies and inaccuracy if all print sellers agreed to call an invoice exactly that – “invoice” – it would be of limited value if the various broadcast and out-of-home sellers continued to communicate it to their business partners as “Client Invoice,” “Final Invoice,” and more. The true benefits of a data standard will only be fully realized

when representative players on both sides of the media equation – agencies, sellers, and rep firms – use the standard across all media.

**A Standard Evolves Over Time** Modern data formats are powerful enough to enforce data structure and format and flexible enough to respond rapidly to evolving business needs. For the media industry – a particularly dynamic industry – this has two immediate benefits: rapid deployment and rapid response.

With a dedicated team and focused industry involvement, a comprehensive data standard can take months – not years – to go from inception to first release. Subsequent evolution of the standards in response to both industry need and scheduled feedback can occur rapidly and allows the data standard to continually accommodate all participants, from the most conservative to the most forward thinking.

**How The Media Industry Can Benefit** Currently, communication over the course of a media buy requires as many custom processes as there are trading partners involved. Added to the dozens of custom processes are the personnel needed to interpret and input information from the thousands of faxes, phone calls, and emails that take place over the course of a media buy.

Now imagine that the elements surrounding a proposal request, proposal, order, revised order, pre-emption, make-good, traffic instructions, and invoice were communicated in a standard fashion so that the various agency, rep firm, and seller systems always referred to them in precisely the same way. The immediate and long-term benefits would include:

- Increased data accuracy throughout the life of a media buy resulting in, for example, reduced billing discrepancies
- Less time spent by media personnel on low-value activities such as reformatting and re-keying
- Lowered cost of communications among existing agency, seller, and rep firm trading partners
- Faster implementation and lowered cost when adding new trading partners
- Flexibility for standards to evolve with the industry to respond to, for example, the Internet and interactive TV (iTV)

Today something as basic as a calendar date – on an invoice or any other communication – is transmitted differently. One agency's system allows input of and recognizes a date in the "dd/mm/yyyy" format while a seller's system uses "mm/dd/yy". For those two systems to automatically share a date today requires human intervention; 17/09/2001 needs to be handled and retyped as 09/17/01 – and back again – from one system to another. With a standard format, information transmitted between the two systems is not validated and passed on unless it meets the industry's agreed-upon format, for example "mm/dd/yyyy," or "09/17/2001".

With a comprehensive data standard in place, the personnel who had previously been involved with receiving, reviewing, reformatting and re-keying the dates from the faxed or paper invoice would be able to devote time to tasks that impact more directly on generating and maintaining revenue. Multiplied across dozens or hundreds of similar tasks of varying degrees of complexity (with re-keying dates being low on the scale of complexity), the potential time savings is staggering.

Moreover, once the standard has been agreed upon and those parties have made the necessary changes to output and to receive in the industry format, any other parties who then conform to the standard can immediately communicate to those who are already using it. This eliminates the need for costly, labor-intensive custom configuration when doing business with a new trading partner. As long as one or both have been using the standard, their communications are almost immediately established and highly accurate.

**What About EDI And XML?** The most common formats in discussion today are Electronic Data Interchange (EDI) and Extensible Markup Language (XML).

EDI is a data transmission format with some traction in the marketplace. It provides structured data transmission and has allowed organizations to make some progress towards minimizing data inaccuracy.

Some EDI shortcomings, however, are making XML a more attractive format for standards moving forward. For instance, EDI documents are sent via a Value Added Network (VAN), which charges for bandwidth. As a result, EDI documents are usually compressed, making their already difficult-to-decipher machine format even more difficult to read. By contrast, a properly formatted XML document sent via the Internet is equally readable by machine and human. Supporting hardware and software is also an issue, as EDI related hardware costs significantly more than parallel XML related hardware.

EDI was a standard originally created to structure data across several transaction sets, in any industry. This resulted in a standard that provides structure for myriad generic data elements, many or most of which are not specific to any industry, including the media industry. On the other hand, an XML standard provides an equal degree of structure and can be created by any industry or cross-industry concern. This means that an XML standard can be both highly structured and highly customized to the particular industry, all at a fraction of the cost of previous standards formats, including EDI.

Moving forward, the two formats are not incompatible. While the purpose of this paper is not to evaluate one format against another, several companies have created products whose sole purpose is to translate EDI to XML and vice versa. As a standard for the media industry emerges, any concerns over compatibility will be addressed.

**Conclusion** The media industry is poised to take advantage of a standard data transmission format. With focused industry involvement, the first release of a comprehensive standard can be created in months, with ongoing feedback and maintenance to allow the standard to evolve as the industry evolves.

In creating this standard, various data formats should be evaluated and representatives across media and related organizations should be consulted and involved in the various iterations. With a concerted, cooperative effort, all parties can quickly realize significant benefits, including dramatic time savings, increased data accuracy, and decreased billing discrepancies.

**Contact** For more information regarding existing and upcoming initiatives surrounding the creation of a cross-media data transmission standard, please contact:

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