

WHITE PAPER

# Where is the Elusive Silver Bullet for e-Business Infrastructure?

A look forward to how today's technology advancements will impact the world of business-to-business electronic commerce in the metals industry and beyond.

by Bob Raida (Reprinted from 2013 Metals Construction News IT Supplement)



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Since the dawn of the computer age, solving the puzzle of how to enable computers to communicate with each other has been a priority, and a challenge. Over the past several decades, improvements in technology and computing power have generated new options, but none have been successful at simplifying business to business electronic commerce to the point that it becomes ubiquitous. There have been advancements, but has always been room for improvement.

This article explores some of the history and looks forward to how today's technology advancements will impact the world of business to business electronic commerce in the metals industry and beyond.

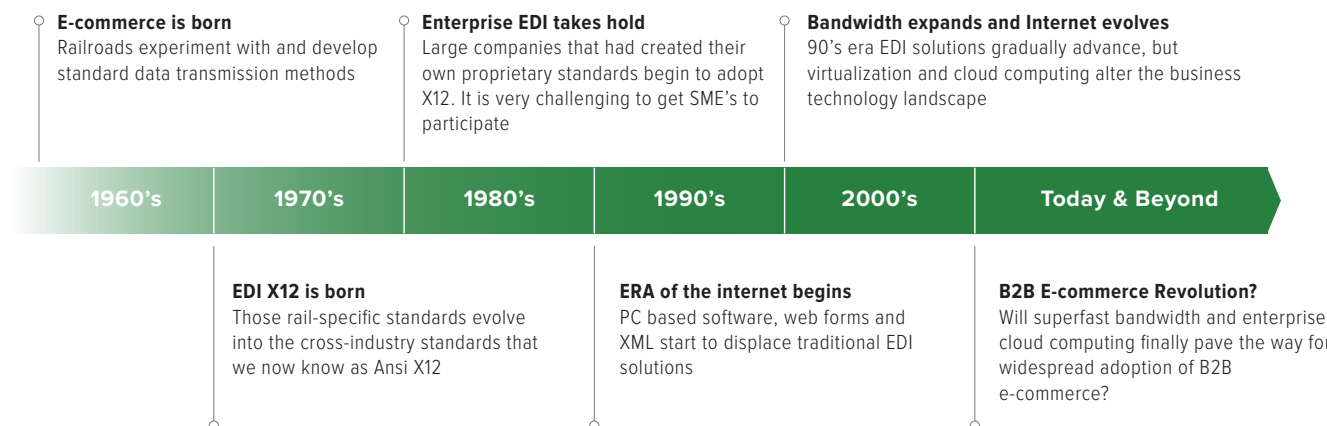
### The Timeline

EDI was born out of a desire by companies in the transportation industry to enable cross-business electronic communications. In 1978 this effort evolved into a standard that could be used in any industry, ANSI X12. These are the standards that power much of what we call EDI today. Early on, some companies created their own proprietary e-commerce standards such as COMPORD, but thankfully those efforts gave way to X12. It is far easier to participate if everyone is playing by (roughly) the same rules. However, while X12 provided a framework, most small- and medium-sized businesses found that conducting EDI was cumbersome and costly. Even though this technology promoted efficiency, the costs often times outweighed the benefits. This was especially true in the steel industry. There were (and are) great gains to be enjoyed by sending and receiving ship notices, material test reports, invoices, and purchase orders electronically. However, showing a high enough return on investment was challenging for most

companies in the well-established and largely pragmatic steel processing industry.

This challenge was not unique to steel processors. The investment in EDI software, expertise, and maintenance was simply too high for most companies regardless of the industry. Several complementary technologies tried to answer this challenge. As the Internet became a viable tool for business we started to see low cost PC-based software that relied on the Internet as its backbone as opposed to the proprietary Value Added Networks (i.e., VANs) that were common with traditional EDI. These tools were helpful in bringing low cost software to the masses – but still required an investment in tools and to some degree expertise.

Web-based forms don't require nearly as much investment. This is a system where Company A provides a portal for Company B to log in to gather transactions and update or enter transactions. In this scenario, little or no monetary investment is required of Company B, but B gains little efficiency as a result. In fact, often times Company B becomes less efficient as they need to log into one or more systems to gather and submit information. Company B has successfully met the requirements of key trading partners, but



essentially has done so by acting as their data entry department! Understandably, this method helped some companies participate in business to business e-commerce but did not alter the landscape of business communications.

At the same time, some people were declaring EDI dead and XML the new savior for business to business commerce. XML, or extensible markup language, is simply a different way of formatting the business transactions. In some ways it is easier to read, and it is intended to be more flexible, but over time it was shown to be just another way to format data, and not the business to business game changer that some predicted. We still had to invest in tools and expertise to get things running smoothly.

The “early Internet” era of EDI certainly created some interesting new options, but did not provide the value that would be necessary to make business to business electronic commerce ubiquitous.

**The Next Phase: EDI is Here to Stay (and Getting Smarter)**

In the past few years enterprise IT has been introduced to a handful of new concepts that are becoming the foundation for new ways to facilitate business-to-business e-commerce. As the Internet matured, bandwidth became much broader and less costly. This development, and the advent of powerful virtual computing environments, combined to create a scenario where the actual computing power of an organization no longer needs to reside

within the four walls that house the staff and equipment. Unless you’ve been hiding for the past few years you’ve seen plenty of information about virtualization, and cloud based computing. Sometimes these words can be overused, but the technology is impactful and can create options that would not have been possible a few short years ago. For example, the bandwidth and computing power required for a system to operate seamlessly and fluidly, while actually residing offsite, was simply not feasible until recently.

What does this mean to the world of business to business e-commerce, and particularly to those in the metals processing industry? EDI is catching on and starting to use these new technologies. That means the value associated with streamlined business to business electronic commerce (e.g., shipping notices that facilitate just in time inventory, automated receiving, and powerful cross-company production reporting) can be achieved without the cost of installing and maintaining software. Functions like EDI can be seamlessly integrated with your existing environment while the heavy lifting occurs by your outsourced (i.e., cloud based) processing system and team.

The world of business-to-business electronic commerce has had its share of unkept technology promises and false starts. The true impact of the latest tools remains to be seen, but no doubt creates options and another opportunity to finally reach the tipping point that could finally make electronic commerce ubiquitous.

Table 1. The difference between EDI and XML

| EDI  | XML  |
|--|--|
| Requires pre-defined rules   | Rules intended to be defined within file. In practice XML has proven to also require pre-defined rules   |
| Extensive usage history results in few questions during implementations              | Implementation rules for XML still being developed and agreed upon                                       |
| Intended to be machine readable  | Structured to be machine readable and human readable   |
| Can be converted to www readable   | www enabled  |
| Modern database tools are not able to easily work with EDI data directly             | Many modern databases allow XML formatted data to be imported and exported directly in and out of tables |
| Wide variety of existing tools designed to create and parse EDI                      | Smaller set of enterprise level tools that create/parse XML  |
| Mature set of integration tools and integration points designed for many ERP systems | XML must either utilize existing EDI entry/exit points for ERP integration or new ones must be built     |
| Modern database tools are not able to easily work with EDI data directly             | Many modern databases allow XML formatted data to be imported and exported directly in and out of tables |



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