

XML Options for Transportation Management

*Responding to record numbers of delayed and cancelled flights, the top U.S. airlines have decided to try to fix the clunky links between their individual electronic-ticketing systems in an effort to make it easier for stranded passengers who don't have paper tickets to rebook flights with a different carrier. They are going to use XML documents to allow sharing electronic ticket information.--- Transportation Magazine**

This and other uses of extended mark-up language or "XML" electronic documents is a sign to transportation professionals that this web-friendly technology is approaching more wide-spread usability in the fast changing area of e-commerce. Transportation professionals who want to be proactive should try to develop some understanding of this technology and why it could be so useful.

XML is simple a format for a file. Many transportation managers are familiar with EDI documents used for shipment tendering, bills of lading, and statuses. A sample of an XML formatted document is presented here (with indentation to increase readability):

Example

```
<INVOICE>
  <SHIPFROM>
    <ACCOUNT_NUMBER>B4324-103</ACCOUNT_NUMBER>
    <NAME>TESRAC SHIPPERS</NAME>
    <ADDRESS>12 Stanford Road</ADDRESS>
    <CITY>CHAMPAIGN</CITY>
    <STATE>IL</STATE>
    <ZIP>63102</ZIP>
  </SHIPFROM>
  <FREIGHT_CHARGE currency="US">157.48</TOTAL_AMOUNT>
  <DETAILS>
    <ITEM>
      <DESCRIPTION>Tractor Parts</DESCRIPTION>
      <SKU>123582345</SKU>
      <QUANTITY>120</QUANTITY>
      <PRICE currency="US">60.00</PRICE>
      <DISCOUNT measurement="flat">10</DISCOUNT>
    </ITEM>
  </DETAILS>
</INVOICE>
```

A complete document may be one-eighth the size of a business letter in document format and, like a word processing document, can be attached to an email or transferred as a file.

Like EDI, XML uses a system of characters to "delimit" one data field from another though XML uses "tags" (inside the <> marks). The XML document is much more "free-form" not relying on the fixed structure and code limitations found in EDI. Also unlike EDI, XML can be human readable. This readability can be further enhanced if programmed with "style sheets" which can even make the XML print in a normal document format. Human readability is a factor that makes XML cheaper, faster and better than conventional EDI for uses that involve human interaction.

XML Is Preferred Over EDI

EDI, while a powerful tool for transportation, is not as extensively used as transportation and logistics professionals might think. In fact, only about 2 % of the world's businesses now use EDI. A poll in Europe revealed that 99% of small to medium enterprises there are reluctant to incur the costs involved in using EDI. Even large retailers only have 20% of their suppliers using EDI. XML, considered to be much less costly to produce may change this and may result in your small to medium sized business partners beginning to communicate with you with something more sophisticated than fax.

There are several important advantages that transportation managers will realize when using XML. First, using the internet to transmit the messages will allow reduction in the use of Value Added Networks (VAN), which can charge on a costly per-character basis. One source has suggested that traditional EDI systems are seven to ten times more expensive than Internet-based options. This will be a primary concern of the IT manager you work with.

The IT manager on your staff will also value XML because the programming effort for this kind of document is much lower. XML is a key technology for integrating various corporate systems. If individual shipment records are to be returned to a corporate ERP or an accounting system after the shipment has been dispatched, XML is a very suitable tool. Both Oracle and SAP have programmed interfaces to accept XML inputs.

Secondly, today many companies batch the delivery of outbound and pickup of their inbound EDI messages periodically during a day. As supply chain flexibility and integration grows, even these delays measured in hours will be unsatisfactory. More flexible timing, and especially, more immediate response will be available via the use of XML. E-commerce efforts like private transportation exchanges will be facilitated by the new technology.

Another advantage that will appeal to transportation managers is that the production and modification of these documents is much less complex. They can be managed not only by the scarce IT staff but directly by transportation staff. An example of the tremendous flexibility that this offers can be provided. Imagine XML documentation for an international shipment. If the Bill of Lading were not complete, this XML file could be pushed to an export manager's email inbox. He or she could add the proper carrier, cite the proper international documents, save the file, email a copy to the recipient, and then forward the document to the Warehouse Management System for addition to a picking list. Imagine the same email-like document flexibility with your carriers, 3d parties and customers. Imagine using it to communicate with your accounting department.

There are problems that have to be surmounted before XML can replace EDI. There are already several carriers who have published their own XML standard and some will accept XML as a shipping document. Transportation managers will remember the problem of multiple computer terminals coming from carriers when early proprietary systems were being fielded. This could be a similar problem with different formats from carriers and even different tags established for various industries. Suppose that two companies create XML formats for a bill of lading. One developer could call a tag "purchase_num", another could call it "ponumber". While humans may realize that those are most likely meant to be the same thing, machines will definitely not recognize this. For XML to be widely used, the e-business community must agree upon a standard set of tag names and associate a commonly understood meaning to it. This standardization is required for a smooth integration of the many different systems transportation professionals have to deal with and consists of both the syntax and the semantic of the XML-based message.

Also tools for easy transmission and document accountability need to be available. People who track progress of innovations like this state that the tools are now becoming available and that XML will begin to make an impact within two years.

What Should You Do Today?

What should the transportation professional do about XML? Here is a chance to put your IT manager on the spot. Ask if he or she has considered moving to XML for your major transmissions and carriers and has this been considered for any contemplated corporate systems. You will at least gain new respect in his or her eyes for using a new acronym. Canvas your carriers to determine if their plans include XML communications. Since both shippers and carriers realize savings from using this technology, perhaps there will be opportunities to share the savings via discounts. Lastly, think about how a flexible, document-based version of EDI could allow you to revise and streamline your business processes.

*Jim Young, managing director for cost measurement and distribution strategy at Continental Airlines Inc. in Houston, said here last week that an XML-based standard for sharing electronic-ticket information is being developed by the OpenTravel

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Industrial Data & Information Inc.(IDII) thanks George Murphy of Transoption for use of this white paper. See the white paper section at www.idii.com