

The truth about XML

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Systems powered by the Extensible Markup Language might someday prove to be the standard for information sharing between businesses, but not in the near future.



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Tight IT budgets make it tough for managers to stay at the cutting edge of technology, but in one area they may not have to bother. For now at least, electronic data interchange (EDI), the old system for exchanging business documents electronically, is at least as useful as its likely successor and cheaper as well. Over the next five years, businesses would do well to optimize their old systems while also preparing themselves for the new ones.

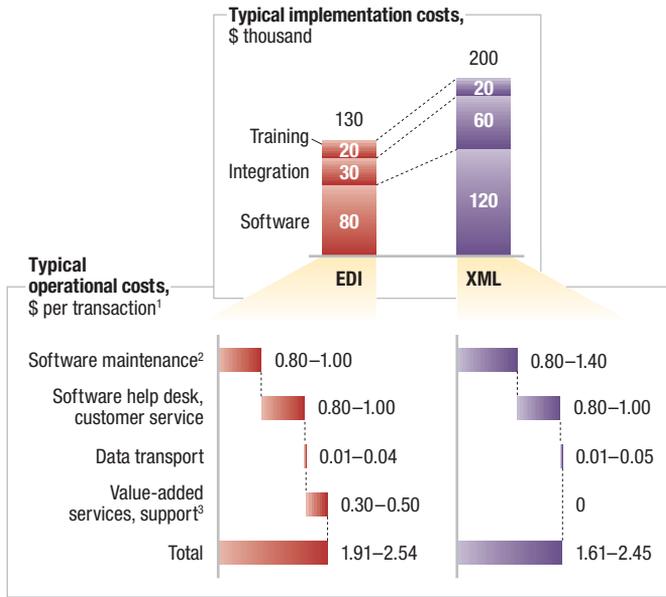
EDI, the workhorse of electronic commerce for more than 20 years, lets businesses exchange purchase orders, invoices, shipping information, and other commercial documents over private electronic networks or, increasingly, the Internet. In 2001 more than \$2 trillion in business transactions passed through EDI networks, and as many as 55 percent of all large and midsize companies in North America used them.

For several years, the Extensible Markup Language (XML) has been pitched as a more flexible and less expensive successor to EDI. XML was originally designed to make it possible for HTML World Wide Web pages to include additional information. Its development gave rise to the idea that the technology could enable trading partners to transfer and manipulate more complex data than they can with EDI; the new data-sharing features would help companies to develop joint supply-and-demand forecasts, for example, or to manage global inventories. But our research, supported by interviews with chief information officers (CIOs) and operations executives, suggests that businesses have little to gain from replacing EDI quickly.

We see four arguments against investing in XML today. First, XML solutions cost as much as—if not more than—their EDI counterparts. People suppose that XML must be cheaper to operate, since it uses open Internet technology rather than proprietary EDI networks. In fact, though

EXHIBIT 1

The data-exchange ‘bake-off’



¹Assumes annual transaction volume of 100,000 documents.

²Includes integration and translation software and support.

³Includes transaction management and multinational, multilingual support available 24 hours per day, 7 days per week; for XML, assumes current minimum expectations of service levels, which could in time be higher.

Source: Giga Information Group; interviews; McKinsey analysis

transport should become cheaper as XML and transmission technologies improve, the cost can now be higher, since each transaction carries more information: one electronics manufacturer, for example, currently pays \$2,000 to \$3,000 to set up a new standard document in EDI but more than \$30,000 to do so in XML. Furthermore, XML isn't widely used, and vendors are inexperienced, which means that implementation outlays are higher than those for EDI (Exhibit 1). Once both kinds of systems become operational, however, their software-translation, support, and help-desk costs are roughly comparable.

In the next five years, XML might reach sufficient scale for its costs to tumble, though more time could be needed. EDI took two decades to become the standard, even with the help of standards-setting bodies and channel masters—large companies that have enough power to dictate trading practices to their external partners. In many industries, channel masters have yet to support XML.

The second reason to delay implementing XML is that its technical standards remain in flux, so companies looking to use it to gain an edge must wait until its data and process formats, integration interfaces, and busi-

ness semantics have been determined (Exhibit 2). Third, the installation of XML calls for process reengineering, which businesses would rather avoid after a decade of upheaval implementing enterprise software. IT managers who advocate any new technology requiring process changes must make a rigorous case to their companies, and CIOs say it is hard to do so, since EDI is well established and as effective as (and sometimes better than) XML.

Last, XML's promise, as we have seen, lies in its ability to help trading partners exchange and manipulate more kinds of critical information, but many executives doubt whether their companies really want to share such strategic data with partners and competitors. Consequently, XML won't be adopted as the preferred technology in the near future unless its costs fall, businesses implement big XML systems internally, standards are defined, and trading partners discover incentives to share additional data. Even as more companies move toward XML, we expect it to complement, not replace, EDI.

Meanwhile, companies can do more with their EDI installations than simply exchange purchase orders and invoices; these systems can be expanded to handle inventory management, the sharing of logistics and shipping information, electronic payments, and private exchanges. To help different functions and units communicate, companies should build XML-based infrastructures that complement their EDI networks; they should think of the two technologies not as oil and water but as butter and jam.

EXHIBIT 2

Waiting for XML

| Challenge | Potential solution | Current status |
|---|---|--|
| Data, process formats: too many different formats for defining data and process flows | <ul style="list-style-type: none"> Potential contenders for standardizing for matting languages: BizTalk, ebXML, RosettaNet | <ul style="list-style-type: none"> Not widely accepted yet Process-flow formats too simplistic or nonexistent |
| Integration interfaces: too many proprietary interfaces between systems | <ul style="list-style-type: none"> Standard framework for technical mapping of interfacing disparate systems: Java Connector Architecture (JCA) | <ul style="list-style-type: none"> Standard not yet mature Issue of linking with legacy systems in cost-effective fashion not solved |
| Business semantics: lack of standards | <ul style="list-style-type: none"> Numbering system such as Global Trade Item Number (GTIN) for identifying items Involvement of industry trade associations in setting standards | <ul style="list-style-type: none"> Few standards thus far High level of customization |

Companies can work within their industries to promote the adoption of XML standards that would extend their existing EDI infrastructures, and these hybrid systems can then be used to exchange more data with external partners. One large industrial manufacturer, for example, is now working with a trade group to agree on standards and is already using them to share XML documents over the EDI network with a few key suppliers. This hybrid approach gives the company the benefit of both XML's flexible metadata format (which is vital for effective collaboration with suppliers) and the well-established transaction-management features of the EDI network.

Businesses that integrate their EDI and XML systems must calculate the costs and benefits of that approach and keep an eye on the evolving standards of their industries. Investing in a standard that later loses out to a competitor could lead companies to spend too much on systems that might become obsolete too soon. **Q**

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