

XML Yes - An Open Model for B2B Electronic Commerce

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Introduction

The perceived benefits of business to business transactions utilising electronic technology as opposed to more traditional paper based systems, including fax, are becoming more evident as organisations take stock of the current ecommerce environment. Effective use of the appropriate technology promises substantially reduced costs, better customer service, streamlined operational procedures and of course that perennial chestnut, improved productivity. The resultant impact on improved “bottom line” and the improved competitive advantage are powerful inducements to take this rapidly expanding new technology seriously.

However many organisations are realising the limitations of a web based e-commerce strategy and are wisely considering the implications of indiscriminate implementations. A closer look at the current technology offerings reveals some cracks in the golden image of such attractive benefits.

Some of the limitations will be discussed and an alternative approach will be outlined that addresses the significant issues.

The Cracks in the B2B Golden Egg

Detailed discussions with many organisations occupying all industry sectors and various market positions within those sectors reveal some of the concerns that are related to the current practice of business to business (B2B) e-commerce.

If the simple practice of issuing a purchase order is considered as an example, the implications of Web based trading become evident. Typically in the case of the “old economy”, an organisation’s ERP or FMIS system creates batches of business data such as purchase orders, invoices, statements, picking slips, order acknowledgements etc., the data is then printed as a form and distributed by post or perhaps faxed to suppliers or customers.

This is the proactive “push” model of doing business that has been in existence for more than a hundred years.

How many places do you want to go to today?

The model for Web based trading is different and in some cases is a more passive “pull” approach.

One approach being adopted is for the purchase order data to be made available on the customer’s Web site for suppliers to access and download which shifts the initiative for trading to the supplier. If the supplier is not diligent, then what? The implication of this approach for a supplier with many customers (the likely situation) is that this approach is too labour intensive and is untenable.

Another Web approach would be for the customer to log into the supplier’s Web site and register a purchasing order. In this scenario orders must be processed more manually ie. each purchase order is manually keyed into a different supplier web portal and re-entered into their own financial system, effectively double entering purchase order information. We call this “swivel chair integration”, and it leads to not only excessive workloads as the same data is keyed twice, but also to errors which are the real source of rising costs. Therefore the relative efficiency of the “old” batch printing technology and Postal delivery system remains attractive in comparison. How many different suppliers’ are encouraging partners to use their Web sites today? Consider some of the added complications of this web portal approach:

- Many different web sites must be logged into per batch of orders.
- Each site has a different password

- Some of the Web sites are occasionally “down”
- Each purchase order must be keyed twice, once on the supplier’s Web site and again into the customer’s legacy financial system. This duplicated data entry leads to order fulfillment errors.
- Loss of personal contact between supplier and customer.

Yet another Web model is that of the hub or e-commerce portal whereby a major “player” in an industry implements a Web Portal and encourages partner organisations to use, for a fee, a common Web Portal. This is not only a profit center for the organisation that establishes the portal, but is more efficient for them. However it raises other issues for the partners. For example:

- Another large “player” in a particular industry will almost definitely not trade on a competitor’s Portal. Therefore the logical move is for the No2 “player” in an industry to establish their own Portal or perhaps implement a different Web strategy entirely. Then what? Now partners have to contend with two or more competing portals.

As these Web portals may be administered or owned by any number of competing vendors or even industry segments, this raises the issues of openness and reliability. Some questions you might like to ask yourself are:

- Are common trading portals realistic and workable in the long run?
- Do you totally depend on a third party Web server for your organisation’s mission critical trading? For example, 100 trading partners who rely on a single point of trading are put at considerable risk when that single trading link “goes down”. What is the cost to an organisation for not trading for a few days?
- If an industry Goliath (or group of Goliaths) forces the smaller trading partners to adopt a Web trading approach which is contrary to the smaller partners business practices or abilities (remember EDI, Electronic Data Interchange?), then how will the dynamics of the trading community change? Will the real promise and potential of this exciting new technology remain unfulfilled, at least for the small to medium enterprise (SME) partners who MUST adopt this approach for it to be successful?

Closed vs. Open electronic trading

Just as the IT industry went through the period of Open vs. Proprietary IT systems in the 1980’s, the field of B2B e-commerce is beginning to grapple with similar issues. Each e-procurement system, as an example, has different ways of catalogue posting/updates. The clients of these systems will face the situation of a significant trading partner who has an electronic system which is incompatible with their own. The integration issues to get these disparate systems to exchange data are complex, time consuming and require high levels of scarce expertise to complete an implementation. And then there is the firewall issue in order to protect valuable corporate information from misuse and abuse.

Additionally, it is evident that efforts to standardise portal interfaces is not going to deliver a “universal portal interoperability” in the foreseeable future.

Technology such as XML (Extensible Markup Language) will solve many of these interface issues but there are issues to consider here as well. More on XML later.

Ironically the Internet, with its intrinsically open and low cost nature, becomes populated with proprietary and expensive mutually exclusive trading solutions which restrict the ability of an organisation to freely do business with anyone it chooses!

Is it any wonder many organisations are exercising caution before leaping on the e-commerce bandwagon?

Similarly, the failure of EDI technology to offer the benefits and efficiencies to all organisations that wished to participate resulted in the smaller, less IT sophisticated organisations being excluded and often disadvantaged in trading with larger companies.

When thinking of Web Portals think EDI. They are large, centralised, driven by centralised network administrators, and very proprietary. Larger organisations with more sophisticated IT infrastructure and significant IT budgets, could deal with the expensive EDI networks, changing standards and system interface issues.

How is a Web Portal any different? Is it simply a different name and a different set of protocols?

Since small partners didn’t adopt EDI this left larger organisations with a need to support two trading infrastructures, paper based and EDI, in order to maintain flexible trading links with all their partners. So instead of EDI delivering a uniform and all inclusive model it was somewhat divisive.

Are Web Portals any different?

So can this tarnished e-commerce “golden egg” be polished up and made workable?

Specifying the perfect e-commerce Golden Egg

To overcome the limitations of this relatively new mode of doing business what is needed is an approach which ideally has the following characteristics:

1. The solution allows organisations to proactively transact business in much the same way as they have always done, that is , directly with one another, except that they harness the benefits of electronic commerce. It will deliver a more efficient process, not a more costly, time consuming business process.
2. Simplicity of implementation and operation allows all trading partners to participate regardless of their operational budgets or level of IT expertise. For example if a partner only has the ability to trade with paper for the foreseeable future then the solution incorporates paper trading, albeit more efficiently if possible.
3. Ease and speed of integration between all the disparate FMIS, ERP, HR and CRM systems involved will facilitate extensive use of e-commerce among all parties using the full potential of XML technology.
4. System integration to host applications and databases will rely less on expensive, hard-coded proprietary interfaces and more on open methodologies such as XML employing stylesheet conversions.
5. Security will be robust using PGP encryption (or similar), non repudiation, transaction confirmation etc.
6. The system should use standardised technology wherever possible to minimise risk to the user and reduce reliance on proprietary software.
7. The architecture of the solution allows for the inevitable changes in this rapidly evolving field of IT and business technology. It should not lead organisations down a technological dead end.
8. The benefits of e-commerce are actually delivered to the end user organisation ie. increased efficiency with significant cost reductions. Trading between parties is made easier, faster and more secure.

The XML Yes Model

From the start it should be made clear that this model does not exclude any proposed or past trading technology. The model assumes paper based transaction will continue for some time, together with portal, web site, EDI, email, fax and other trading methods, all interacting. In fact this model seeks to complement all of the approaches currently available, not to replace or compete with these models.

Overall, the current state of B2B e-commerce is somewhat fragmented into competing vendor offerings and technologies. This situation may be restricting the extensive use of this technology, either due to cost factors, cross system incompatibility and/or implementation complexity.

The **XML Yes** (Patent Pending) approach is to simplify this process as much as possible without restricting the options that participants may choose to adopt in the future as the technology evolves.

The **XML Yes** system takes application output data that is common to any application, converts it to well structured XML (eXtensible Markup Language, a new non proprietary data model standard related to HTML) and sends a graphical image of the business form together with the XML data file to the required recipient using existing email or IP backbones. The recipient can either print the form and/or have the XML file imported into their business application for further processing. The XML data file of the transaction can be delivered to a trading partner's Web Portal instead of manually processing the business form via a web page. Or the data can be sent in many different data formats to a partners existing financial system for direct import into their FMIS, bypassing the web approach altogether.

The requirements for each recipient (which may be different for each partner) are stored within the **XML Yes** solution so that a complete recipient specific solution is achieved. One recipient may receive an emailed graphical form with an XML file attachment while the next customer receives any combination of an email graphical image of a business form, or a fax transmission or a uniquely formatted XML or delimited text file for direct import into the customers system. XML Yes can send any combination of data format to any destination for each record in a batch of business transactions according to simple workflow rules and destination attributes. **XML Yes** can send any or all of the following formats to any or all of the following destinations **for each specific recipient**:

Formats

XML
Facsimile
PCL

Destinations

Web server, IP address, email address, network directory
Facsimile number
laser printer address

Printed paper	target printer
Delimited textfile	email, IP address, directory
TIFF	email address
HTML	Web server, printer address

PDF and other formats will be available Q4 2000

In essence, **XML Yes** replaces the more manual batch printing, posting and data entry business processes with a simple, automated and secure electronic process. The system uses industry standard MS Exchange, XML and TIFF to deliver a commercially robust solution to all industries using their existing application processing without any changes required to back office systems. As such it is a powerful tool to enable Web based e-commerce portals to integrate a solution across multiple applications and IT environments with no changes required to the source data applications!

Due to the simplicity and low cost nature of the system, all trading partners can participate regardless of their size, budgets, existing systems or IT sophistication.

The **XML Yes** conversion toolkit eliminates the issues of system incompatibility and excessive cost of implementation by generating well structured XML data from any source of relatively unstructured spool file data/reports using a simple but sophisticated GUI tool. This also provides universal file translation capabilities to integrate the XML data into applications without XML interfaces.

An example is converting a report printed to a print file to highly structured XML file and then automatically delivering that structured data to a partner's Web site or a recipient email address with no data rekeying.

XML Yes provides form design capabilities that include logos, signatures and barcodes as well as output management with conditional logic, business rules, authority and workflow processing.

Summary

The Internet offers organisations the possibility of achieving electronic trading with more openness and cost effectiveness than has been achieved previously with technologies such as EDI. A greater utilisation of electronic commerce in business to business and government to business is likely if a technology offers a solution that is:

- congruent with existing established business practices
- inclusive to all trading partners and can be universally adopted
- easily integrated with any legacy back office system so that no incompatibilities occur
- rapidly implemented by less sophisticated IT staff with minimum IT infrastructure
- more efficient than Web hub/portal sites that are not "batch friendly"
- capable of generating both sophisticated business forms and XML structured data
- an open, rapid and less costly solution to interfacing existing host applications and databases with an XML datastream
- well placed to take advantage of new developments in B2B and G2B e-commerce

The limitations of alternate B2B models of e-commerce have been examined briefly and another model, **XML Yes**, has been briefly outlined. **XML Yes** can be integrated with Web based e-commerce portals or stand alone as a direct connect, comprehensive business transaction method based on XML and recipient specific distribution.

Adoption of the **XML Yes** model will greatly assist large companies in trading securely with smaller companies at low cost. And it will enable smaller companies to "level the playing field" when trading with larger corporate companies. The many benefits of adopting well structured XML as a standard data exchange format will be fully realised within the **XML Yes** model and with existing IT and business practice operations.

