

Wednesday July 11 2001

An Introduction to ebXML

Collaborative Electronic Business is here to stay

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Every day we hear of businesses announcing partnerships with each other in order to provide more dynamic applications. As the number of these applications increase, electronic businesses are faced with the fundamental problems of making sure that their applications are not only dynamic but maintain a high degree of inter-operability between their applications and the businesses with which they collaborate.

eBusiness Standards

The larger organizations have been engaged in defining and implementing their systems around EDI (Electronic Data Interchange). EDI has allowed for not only the capture of common data-interchange formats but it has also tackled the challenge of capturing those formats, i.e. messages, by defining the Business Processes in which they are used. EDI though, has proved to be expensive not only due to the high network infrastructure setup/running costs but also the high costs of System Integration. For the existing EDI Implementations out there, there is usually a dominant business entity that has tried to enforce proprietary integration approaches on all the other partners. As a result of this, several companies (especially smaller organizations) have gone about building their electronic businesses and collaboration with their trading partners in an ad-hoc manner. So, what do you think the solution would be to encourage all organizations to conduct electronic business over the Internet? A first step would be to define standards. But standards to define what? Listed below are some of the points:

- Define Common Business Transactions e.g. Sending a Purchase Order
- Define Common Data-Interchange Formats i.e. Messages in the context of the above Transactions
- Define a mechanism for listing your organization's capabilities and the business transactions that your organization can perform in a common Repository accessible to all other organizations. In short, an ability to describe your Company Profile.
- Define a mechanism to allow organizations to discover companies and lookup their profile.
- Define a mechanism that allows two organizations to negotiate on the business terms before they commence transactions.
- Define a common transport mechanism for exchanging messages between organizations
- Define the security and reliability framework

As we stand today, there is no particular standard for any of the points listed above. It is important to have a common standard in order to make the global electronic commerce a reality, and this is the vision of ebXML (electronic business XML).

What is ebXML?

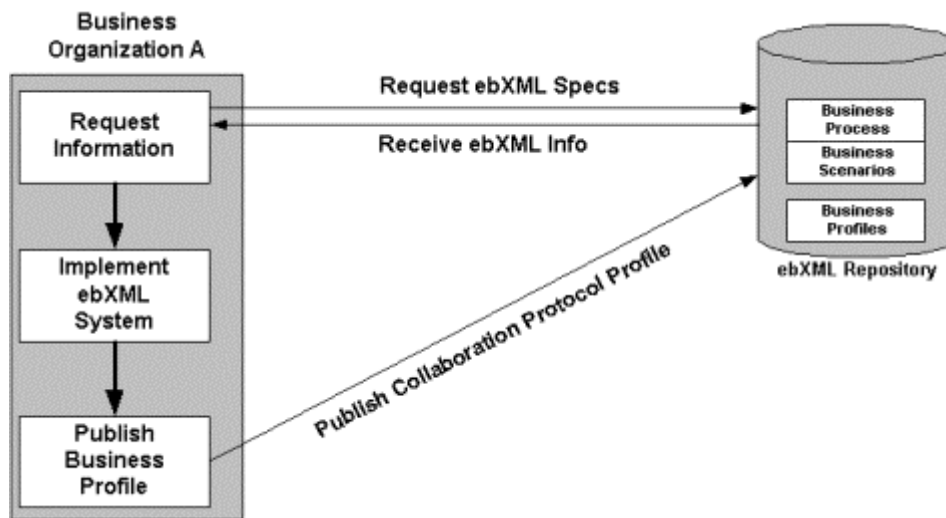
ebXML is a global electronic business standard that is sponsored by UN/CEFACT (United Nations Center For Trade Facilitation And Electronic Business) and OASIS (Organization for the Advancement of Structural Information Standards). ebXML thus defines a framework for global electronic business that will allow businesses to find each other and conduct business based on well-defined XML messages within the context of standard business processes which are governed by standard or mutually-negotiated partner agreement. The ebXML standard addresses each of the above points, as we shall see in the next section.

ebXML System Overview

In this section we shall now take a look at how a business would get itself ready to perform business transactions with other organizations, based on the ebXML Standard. Shown below are 3 key phases in the

order in which they are supposed to be executed towards meeting that goal:

Implementation Phase



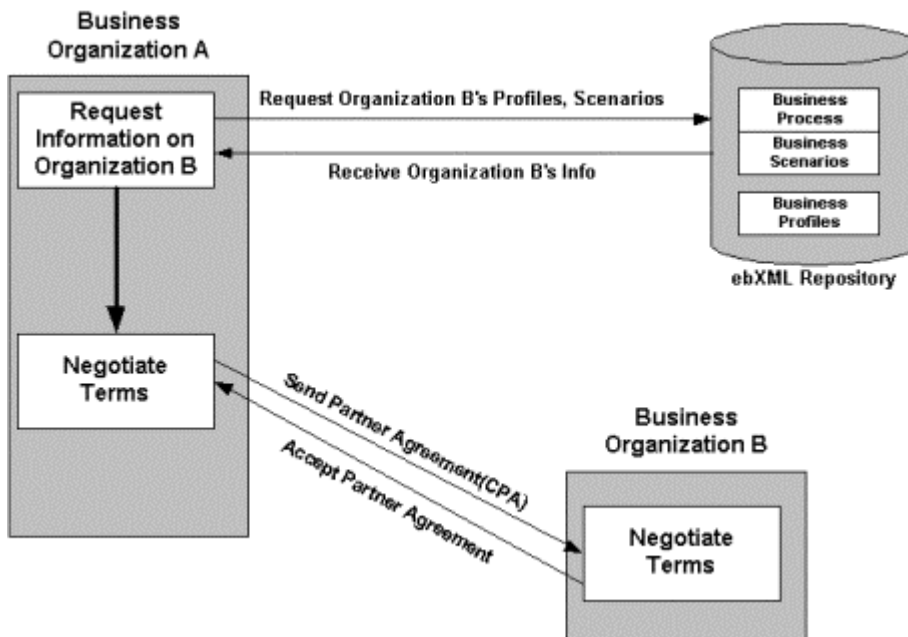
In this diagram, the first thing to note is the ebXML Repository. This repository contains industry defined Business Processes and Scenarios that are commonly applicable to most business transactions. Companies can choose to extend these processes and add scenarios of their own. The repository also contains profiles for businesses that have already registered themselves for performing ebXML transactions with other trading partners.

So, what is an Implementation Phase? For an example Organization A, which is interested in doing electronic business as per the ebXML standard, consists of 3 steps as shown in the diagram above:

- Request Information
- Implement ebXML System
- Publish Business Profile

The first step towards that is to request the ebXML Specs (Business Processes, Business Scenarios) and understand them. Once the organization has taken a look at the specs, it decides which business processes it would like to implement, following which it needs to implement a system in-house based on those standards. It could either build a new system or build on top of an existing legacy system. The whole idea is to expose a system that understands and talks ebXML. There are several choices available today in the form of third-party applications that can just take and assemble together an ebXML System. Once the system is built, the organization is ready to conduct business with other organizations. To facilitate that, it needs to publish its profile known as a Collaboration Protocol Profile (CPP) to the ebXML Repository for other organizations to discover. A CPP thus enables any organization to describe its profile i.e. which business processes it supports, its roles in that process, the messages exchanged, the transport mechanism for the messages. Once the CPP is published to the ebXML Repository, it will allow other organizations to access it and learn about the capabilities of Organization A. At any time, Organization A is free to access its own profile, review and make changes as necessary.

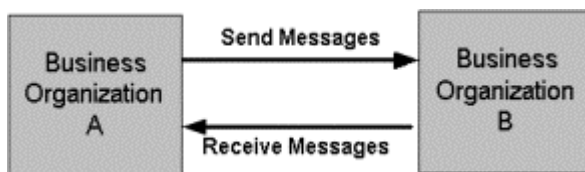
Discovery of Partner Information and Negotiation Phase



We saw in the previous phase, how Organization A readied itself for electronic business on the ebXML standard by first implementing the ebXML System in-house and then publishing its profile, which described its capabilities to the ebXML Repository.

In this phase, we shall look at how Organization A does electronic business with a partner Organization B. As our Organization A has published its profile, Organization B has done the same. So the first step that Organization A does is to retrieve Organization B's profile information from the ebXML Repository. Once it has the profile, it is in a better position to understand Organization B's capabilities i.e. whether it supports the business processes that it is interested in, the messages to be exchanged, transport mechanisms, security and reliability of the process, etc. In the real world, businesses always negotiate terms and implement business contracts before conducting any business. ebXML is no different in that regard. So, the next step for Organization A is to send over a business contract called a Collaborative Partner Agreement (CPA), in ebXML, to Organization B. The CPA will be a reflection of the profile (CPP) of both the organizations. Both the organizations can now collaborate on the CPA and refine it to meet the business needs of both the organizations. Finally, both parties accept the agreement. During this phase, it is very likely that key personnel from both organizations will meet in person and make assessments before committing to an eBusiness relationship.

Transaction Phase



We are now ready to conduct transactions. A CPA was accepted in the previous phase and the transactions can be conducted in a pre-defined fashion where each business organization plays a pre-determined role in the transaction. The transactions consist of ebXML messages, which are sent over the standard ebXML Messaging Service.

Conclusion

In this article we have seen what ebXML is all about. The article also highlights the different phases involved in getting an organization to conduct electronic business based on the ebXML Standard. For further information on the ebXML Standard and its related documentation, please refer to ebXML.org

We have all heard of and how businesses are trying to understand Web Services to achieve more dynamic and inter-operable applications between themselves and their trading partners. Several such organizations are now at an intriguing phase of their life where they are trying to understand how best to be a player within a global standard like ebXML. In the next article, we shall take a look at the ebXML Architecture and how it relates to Web Services concepts like WSDL, UDDI and SOAP.

This article is an extract from [Web Services Business Strategies and Architectures](#).

Buy the book from [Amazon.com](#)

Also by Romin on Web Services Architect: [ebXML and Web Services](#) and [Practical Considerations In Implementing Web Services](#).

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