E-Commerce and Simple Negotiation Patterns

Document to Address Common Pattern Implementation Issues

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1 Status of this Document

This document specifies an ebXML WORK IN PROGRESS – NOT FOR IMPLEMENTATION for the electronic business community.

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4 Introduction

4.1 Summary

This document is meant to be included as a supporting document to the ebXML Business Process (BP) Specification Schema, to address common pattern implementation issues. The pattern used by the BP process may also apply to the automated negotiation of Collaboration of Protocol Agreements (CPA) terms from Collaboration Protocol Profiles (CPPs), and so may be relied upon by the CPP/CPA Specification.

4.2 Scope and Audience

This document is intended to be read by designers and users of ebXML business processes.

4.3 Related Documents


4.4 Document Conventions

The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, NOT RECOMMENDED, MAY, and OPTIONAL, when they appear in this document, are to be interpreted as described in RFC 2119 [Bra97].
5 Design Objectives

5.1 Problem Description

The Specification Schema contemplates exchanges of Documents by means of atomistic Transactions each between two parties. In order to achieve the desired legal and economic effects of these exchanges, the structure of the documents must
- permit the parties to exchange legally binding statements and terms,
- permit the parties to exchange nonbinding statements and terms, in order to negotiate, and
- permit a logical composition of those exchanges into Collaboration patterns that allow an agreement to be formed.

As used in this document, the words Document, Transaction and Collaboration are defined below.

As a special instance, in order to initiate an ebXML transaction, two parties may wish to use the negotiation pattern described in this document to negotiate a CPA in an automated fashion from a pair of CPPs supplied by each party.

5.2 Special Terminology

5.2.1 Terms to be added to the ebXML Glossary of Terms.

Legally Binding – An optional character of a document, set by the sender, that is intended to confer upon it the status of being the sender’s legally enforceable statement or commitment.

Contract – A bounded set of statements or commitments between parties that are intended to be legally enforceable as between those parties.

5.2.2 Terms defined for the purpose of this document.

Acceptance -- A responding party's document indicating agreement with a received offer.


Counteroffer advice -- A message bound to a rejection, indicating that the sender intends to send a new offer regarding the same subject matter.


Offer -- A document proposing business terms by a requesting party addressed to a recipient. A binding offer entitles the recipient to form a contract with the requesting party by responding with a binding acceptance.
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Rejection -- A responding party's document indicating that it rejects a received offer.


Other terms defined in the ebXML BP Specification and CPP/CPA Specification are used in this document as defined in those specifications.

5.3 Assumptions and Constraints

5.3.1 Constraints from ebXML structure

a) An ebXML collaboration is conducted by two parties, each using a human or an automated business logic system that interprets the documents transmitted and decides how to (or whether to) respond.

b) All collaborations are composed of combinations of atomistic transactions, each between two parties. Multi-party or multi-path economic arrangements are possible, and may be arranged in a single collaboration, but must be decomposed into bilateral transactions in order to do so consistent with this document. See the Drop Ship Scenario supplied in Exhibit E of the Business Process Analysis Worksheets & Guidelines Document.

c) The ebXML specifications, permit a party to impose messaging or security options such as "isNonRepudiationofReceiptRequired", that require that electronic signatures be attached to some documents for purposes other than to indicate their binding or nonbinding nature. Therefore, the presence or absence of an electronic signature bound to a document (e.g. by hashing) cannot be used by itself to indicate its binding character.

d) The ebXML Business Process Specification Schema permits a trading partner to designate specific transactions as binding or nonbinding by setting the Boolean parameter "isLegallyBinding".

5.3.2 Constraints from legal and auditing requirements

a) The emerging laws of electronic signatures generally require that, in order for an electronic message to be given the same legally enforceable effect as a signed physical writing, the author must indicate his intent to be bound. This may be accomplished by the author intentionally conforming to a data standard that specifies a mark, attribute or protocol indicating legal assent. That assumption is necessary in order to form a contract dynamically by business logic through exchanges of ebXML messages.

b) Each offer in a collaboration must be definitively resolved in order to end the collaboration. (This is true whether or not the offers are binding.) Offers that are
followed by an explicit acceptance must be resolved as accepted. All other
responses – including time-outs, rejections and counteroffers – must be resolved
as a type of rejection. Either resolution should result in completion of the
transaction, together with an end state that informs further processing of the
results of the collaboration.

c) Each acceptance of an offer (whether or not binding) must unambiguously refer to
the offer accepted, in a manner that produces artifacts suitable for establishing the
accepted terms to a legal authority.

6 Pattern Requirements

These requirements will permit exchanges of ebXML documents to form contracts
consistent with the assumptions and constraints listed above. This document is captioned
as a "simple" negotiation pattern, in contrast to the more complex modeling and assembly
of commitments and fulfillments that is possible under the N90 Metamodel. The
following constraints are designed to permit trading partners to exchange
request/response sets that will result in a demonstrably successful or failed negotiation of
a proposed business process.

6.1 Requirements for All Transaction Documents

Contracts MAY be formed by ebXML collaborations by the inclusion of offers and
acceptances that conform to this document. Under this pattern, any document that
constitutes a binding offer or acceptance, or nonbinding proposals of offers or
acceptances, SHALL conform to the UMM N90 bilateral transaction pattern
"Commercial Transaction". Under this pattern, other message patterns (such as
notifications) may be included in the same collaboration in which a contract is formed,
but SHALL NOT affect the contract terms reached, if any, or the binding or nonbinding
character of those terms.

6.2 Requirements for Offers

An ebXML document type constituting an offer MAY explicitly incorporate another
document in the same collaboration, by reference to the incorporated document's [unique
ID]. The payload of an incorporated document SHALL be treated as part of the
incorporating offer (as if the incorporated document was authored by the sender of the
offer, regardless of its actual authorship).

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1. As a result, responses will always be directed to the request sender, and any handling of responses by a
third-party on the requester's behalf will require a separate transaction.
2. This is not to say that notifications have no legal effect. They may be highly relevant to the
performance, terms or duration of a contract once formed. However, this constraint assures the
business logic of an ebXML user that its discovery, negotiation and assembly of contract terms need
only process offers and acceptances.
3. This needs the right finalized Glossary phrase for the TRP unique message identifier.
If an incorporating offer has a binding character, the payload of an incorporated document doing so SHALL also be binding on the sender of the offer.

Documents that incorporate other documents MUST refer only to the entire incorporated document.

### 6.3 Requirements for Acceptances

A document constituting an acceptance MUST contain an explicit reference, by [a message ID]\(^4\) to the requesting offer document to which it responds, and generates an end state indicating the acceptance and the termination.

Repeating the terms of an offer, in the document constituting an acceptance to that offer, is NOT RECOMMENDED.\(^5\)

### 6.4 Requirements for Rejections and Counteroffers

#### 6.4.1 Handling of explicit rejections

A document constituting a rejection MUST contain an explicit reference, by [a message ID], to the requesting document to which it responds.

A document constituting a rejection terminates the transaction initiated by the offer being rejected.

#### 6.4.2 Handling of counteroffers

Use of the Commercial Transaction request-response pattern requires that all counteroffers be made by two documents, a rejection (to properly close the request-response pair initiated by the offer) and a counteroffer. In the latter case, the counteroffer is a new offer and the rejecting party is the new initiator.

In order to propose new or modified terms, the rejecting party MUST send a new offer containing the proposed terms, thereby starting a new transaction response-request pair.

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\(^4\) A party who wishes to incorporate part of a prior document in a new message will therefore be required to restate the terms within the payload of the new message.

\(^5\) We need to resolve what unique identifier can be used for cross-references to transaction documents.

\(^6\) Repetition of terms previously transmitted creates ambiguity. If the terms sent "as accepted" are identical to those sent "as offered", a comparison by the offering party is redundant. (The parties have already made provision for the desired level of message integrity and security by setting data parameters in the CPA or the selection of a business process design. Therefore it is possible that the parties are already reflecting back acknowledgement messages. This pattern must be acknowledgement-agnostic.) If the comparison reveals a difference, the comparing party is faced with legal ambiguity and no clear rule for whether the document type or the document contents govern.
A document constituting a rejection MAY be bound to a signal indicating that a counteroffer is coming, which is called a “counteroffer advice” in this document. A counteroffer advice MUST NOT be treated as an offer, nor as a binding document.

A counteroffer advice MAY be communicated by a message document bound to the rejection document in a manner compliant with ebXML standards (such as in a common document flow envelope/container), or by a unique rejection document subtype used only to signify a counteroffer advice as well as a rejection. However, the method of indicating a counteroffer advice MUST be specified in the applicable CPA.

Receipt of a counteroffer advice MUST NOT toll or re-set a transaction time-out clock started by the rejected offer. The business logic interface of an ebXML user MAY use the counteroffer advice for its own purposes (which may, as noted below, include a collaboration time-out clock).

A separate document type for offers not capable of a counteroffer -- or "unalterable" offers -- is NOT RECOMMENDED because, in this pattern, every offer must be simply accepted or rejected on a "take it or leave it" basis. Processing of counteroffers generally is best handled by the recipient’s business logic interface, not document type.

**7 Practical Consequences for Negotiation of Terms**

The foregoing rules will result in two general cases of contract formation.

- Parties may exchange nonbinding proposed terms, and form a contract by sending a binding offer incorporating a set of the proposed terms, followed by a binding acceptance of that offer.

- Parties may send binding terms at the outset, and the recipient may form contracts exclusively from those terms by sending a binding acceptance.
The generalized flow of transactions resulting from the foregoing rules is illustrated below.

Figure 7-1 Flow Of Transactions Resulting From The Foregoing Rules
8 **Recommendation Regarding Collaborations**

We recommend that a *collaboration* handling system include a separate collaboration time-out clock, distinct from the time-out rules applicable to an individual *transaction*. The rules for that clock may include an explicit manner for handling *counteroffer advice* messages.

9 **CPA Negotiation**

Some ebXML users may initiate communications by selecting from a sheaf of pre-set CPAs. Others may wish to negotiate a CPA dynamically by negotiating a choice from among a pre-set group of CPAs, or assembling a CPA from two CPPs. The pattern in this document may be used to perform either of the latter negotiations, generally consistent with the document “ebXML Automatic CPA Negotiation” version 0.1 dated 14 Feb 2001.

If a CPA is to be assembled from two CPPs, the parties may additionally elect to invoke a set of default business rules that should assure successful resolution of each CPA term from most pairs of CPAs. However, parties are free to accept or reject the adoption of those rules.

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7. *E.g.*, the “Conflict resolution of equally weighted options” issue set out in the above document.
8. If I want to specify in a registry that I only transact in cuneiform on clay tablets, albeit wrapped in an ebXML data structure --- or that I am only willing to enter into transactions where the valid responses are either “I worshipfully accept” or “I beg your monopolyship’s leave to decline” -- the *standards* often leave me free to do so. Of course, the *market* may also have something to say about it.
10 Disclaimer

The views and specification expressed in this document are those of the authors and are not necessarily those of their employers. The authors and their employers specifically disclaim responsibility for any problems arising from correct or incorrect implementation or use of this design.

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