IFX and ebXML

Comparison and Compatibility

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Purpose

This paper provides a brief overview of the differences between IFX Forum standards and ebXML technical specifications and standards based on them. It is intended as an aid in making decisions regarding XML Forum alignment with the two groups.

General Overview and Differences

The focus of the IFX Forum is a global, online financial services marketplace. Their specifications cover both the formats of business messages as well as message transport. The IFX standards (and related predecessor standards such as OFX) are currently used widely in consumer financial services such as download of account statements and bill presentation and payment. Business to business standards for financial information are in development but are not in wide use yet. (A related note: Intuit, the vendor of Quicken, QuickBooks, and TurboTax, implemented the OFX standards and had joined the IFX Forum with the intention of merging their OFX work with it and adopting IFX. However, very recently Quicken resigned from IFX and this alignment is now in doubt).

The ebXML Work Group is focused on developing infrastructure specifications that might be used or adopted by other organizations that develop electronic commerce standards. Technical specifications that might be adopted by other organizations or used directly by implementers include message transport, registry and repository, and electronic trading partner profiles and agreements. The business process and core component specifications might be used by other organizations as aids in developing standards for business processes and message exchanges.

The work of the two groups overlaps directly only in the area of message transport. IFX Forum specifications do not address registries and repositories, trading partner agreements, or business process modeling. Similarly, ebXML specifications do not address concrete business processes or messages. Overlap is more likely to occur when groups continue the work of ebXML or base their standards development work on ebXML core components.
A DISA staff member has stated that the IFX Forum intends to eventually follow the ebXML specifications, but that they are not currently heavily involved in ebXML or actively modifying their specifications for alignment (DISA provides administrative support for the IFX Forum).

Technical Differences

- Data dictionary items (aka core components):
  - Names and naming conventions: IFX and ebXML follow different approaches for assigning names to data items with the result that items which are semantically identical have different names.
  - Grouping: Both IFX and ebXML group data items into aggregates with several levels of nesting (as opposed to a relational structure with pointers). However, the groups and the items in them are different.
  - Data types and constraints: (minimum and maximum lengths, cardinality, code lists) may be different

- XML Syntax Differences
  - Document Definitions: IFX Forum uses DTDs while ebXML-based standards will probably use XML schemas
  - Naming conventions: IFX conventions are similar to proposed ebXML naming conventions (upper camel case)
  - Other: ebXML has not addressed details of XML syntax, so other differences are as yet undetermined. However, from the aggregate structure of ebXML core components it is possible that there may be a mixed use of elements and attributes. The IFX Forum uses only elements.

- Message Transport
  - Protocols: Both IFX and ebXML are protocol neutral
  - Enveloping and Packaging: Different
  - Security: Different
  - Acknowledgments, restarts, other general aspects of message choreography: Different

Issues related to Implementation

A key issue in implementation is who will be the implementers. In the consumer-oriented areas where IFX has been implemented, application vendors have provided software packages that can handle the formats without end user technical involvement. In business-to-business areas this may or may not be the case, depending heavily on the uniformity of the business processes and messages. Where there is a lack of uniformity, end user organizations will probably need to directly deal with the differences similar to the way in which they currently deal with different EDI implementation conventions. If we assume that this is the case in higher education, supporting IFX-based and ebXML-based messages will have impacts similar to supporting both X12 and EDIFACT EDI messages. We can expect that there will be XML mappers just as there are EDI mappers (in fact, most major EDI packages currently offer some degree of XML support).
user institutions will need to be familiar with the semantics of both standards and how
they relate to their own institution's data items. We might expect that there would be
little direct overlap between messages (as opposed to, for example, an X12 850 and
EDIFACT ORDERS message). If this is correct, there will be no need to handle the
same document in two different standards; hence re-use and duplication of effort are not
likely to be issues. However, there will very likely be data items and structures that do
overlap, so familiarity will need to be developed with both semantics.

In addition, the XML styles and specific element/attribute names will very likely be
different. This imposes an additional learning burden and effort in keeping straight
which to use when. However, if ebXML-based messages are used, the situation may be
easier for educational institutions, but the burden of supporting multiple formats shifts to
the financial organizations. In the long term, the semantics of the different standards
may become aligned either directly in XML or by use of the ebXML Universally Unique
Identifier attribute which is intended to provide a link between items which are
semantically the same but have different names. This would certainly ease the burden to
users of multiple standards. It may, in fact, allow automatic transformation of an
ebXML-based message into an IFX-based message. However, there are many issues to
be resolved and much work do be done before this is possible, and it will probably take
several years.

The differences in message transport and security may be the most challenging to
overcome in the near term. While the XML Forum may or may not wish to adopt the
ebXML message handling specification, it is not likely that member educational
institutions will want to fully adopt IFX Forum message handling either. If financial
institutions insist on using IFX Forum message handling and security, educational
institutions will be forced to support multiple approaches. This issue also is very much
affected by software vendor support. If there is great uniformity in business processes
and messages, vendors may not only build support for the message formats into their
packages but also support for the message transport and security. If this were not the
case, educational institutions would be required to purchase or develop software that
supported the IFX approach.