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XML Technologies

Technology Report

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XML Technologies

Executive Summary

XML (Extensible Markup Language) is a markup language for defining the syntax and semantics of structured data. Specifically, a markup language provides facilities for tagging a document to specify its logical structure, delimiting the data, and in some cases (but not in XML) specifying how the document is to be rendered.

XML, by itself, is only a part of the XML technology picture, which includes industry specific XML dialects and facilities for specifying the rendering and checking validity of XML documents. XML is simple to understand. But complexity arises as a result of the numerous domain (industry) specific dialects of XML that are being designed and standardized, and other dialects and languages focused on making XML an even more powerful data description language. And to top this, several of the XML dialects build upon other XML dialects.

Although the original goal of XML was to be a more flexible version of HTML (markup language for Web pages), XML's use is spreading rapidly in a wide variety of application domains giving rise to domain (industry) specific dialects of XML. A domain specific XML dialect is XML plus predefined domain-specific tags (identifiers for describing data). To an XML parser, predefined tags have no special meaning, but to a domain specific interpreter (program that both parses and executes semantic actions) or application, predefined tags may have a special meaning.

XML and its dialects such as SOAP and WSDL are important from a business perspective because they provide a standardized way of exchanging data. Using an XML framework will not only reduce costs, but, more importantly, it will be the accepted way of exchanging data between applications, between corporations, and perhaps within applications themselves.

With the increasing popularity of XML, corporations will find it increasingly necessary to use XML (and its dialects) as the *lingua franca* for describing and exchanging data. Corporations will have to ensure that their processes, such as procurement and sales, are XML enabled, that they can gen-

erate, accept, and process XML documents such as RFPs (request for proposals), that their products and applications can import and export XML data, and so forth. XML interfaces will be needed for product interoperability and for enabling enterprise systems to access Web (electronic) services.

This report aims to give a deep overview of XML technologies (XML plus dialects, and related facilities) by

- o discussing what XML is all about,
- o listing its advantages and disadvantages,
- o describing business motivations for using XML,
- o giving the reader a flavor of XML with some illustrative examples,
- o discussing issues relating to XML,
- o describing some XML related facilities,
- o discussing and illustrating some industry specific XML dialects,
- o describing some possible steps businesses should take towards the use of XML, and
- o giving pointers to resources for XML and its dialects.

With the growing momentum of XML and its dialects, customers, vendors, suppliers, service institutions, and others will require that their business partners use XML and its dialects to communicate with their systems.

The goal of this report is to make the decision maker conversant with XML technologies so as to facilitate and help in making XML-related decisions.

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XML Technologies

Why XML?

XML is fast becoming the lingua franca for specifying the syntax and semantics of messages exchanged between computerized entities such as software applications, servers and clients, components of a distributed systems, etc.

XML (Extensible Markup Language) is a markup language¹ designed for use on the Internet/Web for specifying and describing structured data. Examples of structured data are documents such as invoices, financial spreadsheets, product descriptions, bills, balance sheets, etc.

XML, by itself, is only a part of the XML technology picture, which includes XML dialects and facilities such as those for specifying the rendering and checking validity of XML documents². As a result of the growing use of XML, numerous efforts are now underway to develop domain (industry) specific dialects of XML. These dialects, such as SOAP, WSDL, UDDI, and VoiceXML, are important from a business perspective because they provide a standardized way of sending and receiving data. Using a framework such as XML will not only reduce costs, but, more importantly, it will be the accepted way of exchanging data between applications, between corporations, and perhaps within applications themselves.

XML is simple to understand. But complexity arises as a result of the numerous industry specific dialects of XML that are being developed and standardized, and other dialects and languages focused on making XML an even more powerful data description language. And to top this, several of the XML dialects build upon other XML dialects.

XML and its dialects are fast becoming an important part of the Web as XML evolves to enable more Web services and to facilitate eCommerce. Consequently, customers, vendors, suppliers, service institutions, and others will require that their business partners use XML and its dialects to communicate with their systems. XML is most likely go-

¹ A markup language provides facilities for tagging data in a document to specify its logical structure, for delimiting the data, and, in some cases (but not in XML), for specifying how the document is to be displayed.

² An XML document is the generic term used to refer to a file containing XML, an XML message, a database record containing XML, XML data, etc.

ing to be the language for the next generation of important Web applications and browsers.

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