



Using XML for everything, well almost....



The eXtensible Mark-up Language (XML) is experiencing growing usage in a multitude of environments (such as the National Land Information Service and the Gov Talk joined-up government initiative). Both initiatives are based upon the communication of large distributed systems over the Internet. The growth of XML has arisen because such systems may be different in terms of the data that is required (and the format of such data) as well as the types of systems and databases

XML usage is based upon data storage, either temporary or permanent, and the manipulation of such with various XML parsers or the eXtensible Style Language Transformation (XSLT). Without these two factors XML would only be a set of dumb files on a machine's hard disk. Parsers provide the mechanism by which XML documents can be read and interpreted programmatically (providing meaning to the data) and XSLT allows for the easy translation of XML documents from one form to another. Such translation is important in today's world of multiple browser types and interconnected computer systems. XSLT allows us to provide templates of code that, when programmatically

another. This is important in the world of business-to-business (b2b) communication. Two companies may have two different computer systems that are required to communicate with each other. They may need to transfer information, for example when a solicitor identifies a property on which he or she wants to do a Local Land Charge search. The solicitor may identify the property using an on-line system, which stores this instruction in a particular XML format. In order to fulfil the request the on-line system needs to send this to the local authority, which may have its own XML format (in which it requires the instruction to be submitted). In order to marry the two formats XSLT can be used to transform the data from one version to another.

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they reside in and from which they are interrogated. Whilst many books about XML start with the definition of an XML schema (metadata about what is in the XML document) in reality the use (or not) of XML is defined by perceived need. Large projects are not the only ones that can make use of XML. Any project that exchanges data over a network, needs to represent data for a number of differing clients over the Internet or requires simple data storage can benefit from the "X factor" that XML provides.

There are three main areas in which XML may be used within a project: data storage, messaging and display. Data storage can be anything from a set of metadata to actual spatial feature coordinates, address details, parameters for use in a function, data extracted from a database table or even an actual error message. It's the amorphous nature of XML that allows it to be used in a wide variety of applications. The "X factor" is its extensible nature, the quality that allows it to provide solutions for many different problems.

combined with an XML document, can translate one version of XML into another set of information, usually another XML document of a different type, but increasingly a representation of the XML data in a format that can be rendered by a client application, be that a WAP phone or a copy of Internet Explorer.

XSLT and XML remove the need to have data tags and representation tags in the same file, allowing the data to be abstracted from its specific representation. It is easy to apply a template to format it for a particular representation without the need for complex code. It also makes the maintenance of code and addition of new client types a trivial task since all users have to do is add a new template for that particular client; the data in a separate file will not be touched. This is one of the paramount reasons why many websites with large numbers of pages are being changed into XML-based sites. Using XML helps maintain long-term scalability and management.

XSLT can also be used to translate a document from one XML format to

Portals such as www.xml.org and www.biztalk.org provide resources for companies to publish their schema. Users can either write their applications using specific formats (e.g. using a schema for describing addresses) or understand the format they need when communicating with another company (e.g. for notifying change of address).

A recent search at www.directionsmag.com highlighted over 51 press releases about XML-related spatial projects. These range from XML in off-the-shelf Internet mapping applications to use in wireless applications. Locating information about GIS and XML is becoming easier, with GIS sections on such sites as About.com now having XML subsections (<http://gis.about.com/science/gis/es/xml/>). This can lead you to numerous other locations for information, probably some of the most important being those that specify GIS schemas such as that from OGIS with its Geography Mark-up Language (GML) (www.opengis.org/techno/specs/00-029/GML.html). With translation possibilities using XSLT it might not be so important to find the holy grail of one GIS XML schema for all, but it may be a good start for the development of a schema for your particular application.

Matt Toon is Internet Team Leader for ESRI (UK)