

## electronic publishing standards: 1999 FORECASTS

**a**t the fall 1998 Documation conference in Boston, conference chair Frank Gilbane reported that two broad areas of electronic publishing are receiving the greatest user, vendor, and standards interest. These areas are document (or content) management and Extensible Markup Language (XML). Signalled by these merging trends is a growing tendency to treat documents, not as single entities or images, but as modular objects, capable of being reused and readily repurposed. And this modularity is increasingly evolving around XML and related standards.

XML arose as a slimmed-down version of SGML, suitable for Web delivery. However, in this networked world, what you publish resides wherever it most cost-effectively can, whether on optical or magnetic media, removable or fixed. With information potentially anywhere, it is increasingly critical to manage it effectively if you want to exploit it.

standards to watch in 1999

XML, a year-old W3C standard that achieves a few, very simple things, allows developers to break documents into hierarchical elements; it requires developers to give those elements names; it allows those names (and the content!) to be in Unicode (double-byte, supporting all international languages); and it provides a way to define how elements can be used. True to its SGML heritage, XML also allows the use of attributes (adjectives) modifying elements. Unlike SGML, XML is leading to a crush of companion standards and vendor support that will offer radically new capabilities for information products on both standalone and networked media.

Like SGML, XML rigorously separates structure from format. To produce one or more formatted renditions of a single XML-encoded document, you will have three choices: Cascading Style Sheets (Levels One and Two) and Extensible Stylesheet Language (XSL). CSS-1 is simply a facility for attaching formatting information to Web elements. CSS-1 became a W3C recommendation (read: "standard") in December 1996. CSS-2 reached recommendation status in May 1998, adding media-specific support for printers and aural renderings. CSS-1 can be used by both HTML and XML, but CSS and XSL work only with XML. By late 1998, XSL was far from a released standard, but XSL will provide the ultimate in presentation flexibility for XML.

How you create links between document elements in XML started out as a single standard, but has fissioned into two. XPointer, a language for "walking" an XML hierarchical tree of document elements. XLink provides a rich way of offering one-to-many links. Instead of the one-way link offered by HTML, users can be offered a choice at each link juncture, perhaps via a pop-down list.

XML namespaces will provide a means for resolving conflicts when XML elements bear the same names. This provides support for a strategy of deploying information anywhere and combining it, without worrying about naming conflicts.


The current means for dynamic document presentation on the Web is Dynamic HTML, a name that two vendors (Netscape and Microsoft) both use, but with radically different meanings. The Document Object Model (DOM) provides a vendor-independent, standard application interface to HTML and XML documents. In essence, DOM supplies a document-level API to scripts and languages, such as Visual Basic and C++. An upcoming Level 2 version will add formatting, queries, and more.

Of course, delivering XML documents does very little good if your customers can't read or use them. The big fly in the ointment here has been that rich XML support-long promised by Microsoft and Netscape-has been slow to market. This shouldn't be a surprise, since these same vendors don't even fully support the latest version of HTML in their 4.0 browsers. Microsoft offered hope with its October 1998 announcement that Internet Explorer 5.0 will support XML 1.0, XSL, XML DOM, and XML Namespaces. Moreover, Microsoft Office 2000 will use HTML as a companion file format and provide additional support for XML. Netscape promises similar support in its 5.0 release, providing full information integration on the desktop, across networks, desktops, and databases. Netscape will also offer an integrated interface to information anywhere, including resources like search and query results.

streaming media

Synchronized Multimedia Integration Language (SMIL), released in June 1998, provides a powerful way of synchronizing rich, interactive multimedia content for real-time delivery over the World Wide Web (and CD-ROM).

Real Networks' next-generation G2 players and authoring systems use SMIL to designate display multimedia player files, each of which can be displayed in synchronized windows. Real Education CEO Rob Helmick says his company uses SMIL and G2 to create distance learning presentations integrating voice, music, visual effects, text, and graphics. Thus, students at the 60-plus universities using Real Education systems can "get their college degree entirely over the Internet without going to 'class.'"

With increasing implementation of SMIL, Netscape and Microsoft-along with hosts of others-committing to essentially full support for upcoming XML standards, 1999 promises to make these standards both a requirement and an opportunity for electronic publishing on any media. 

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