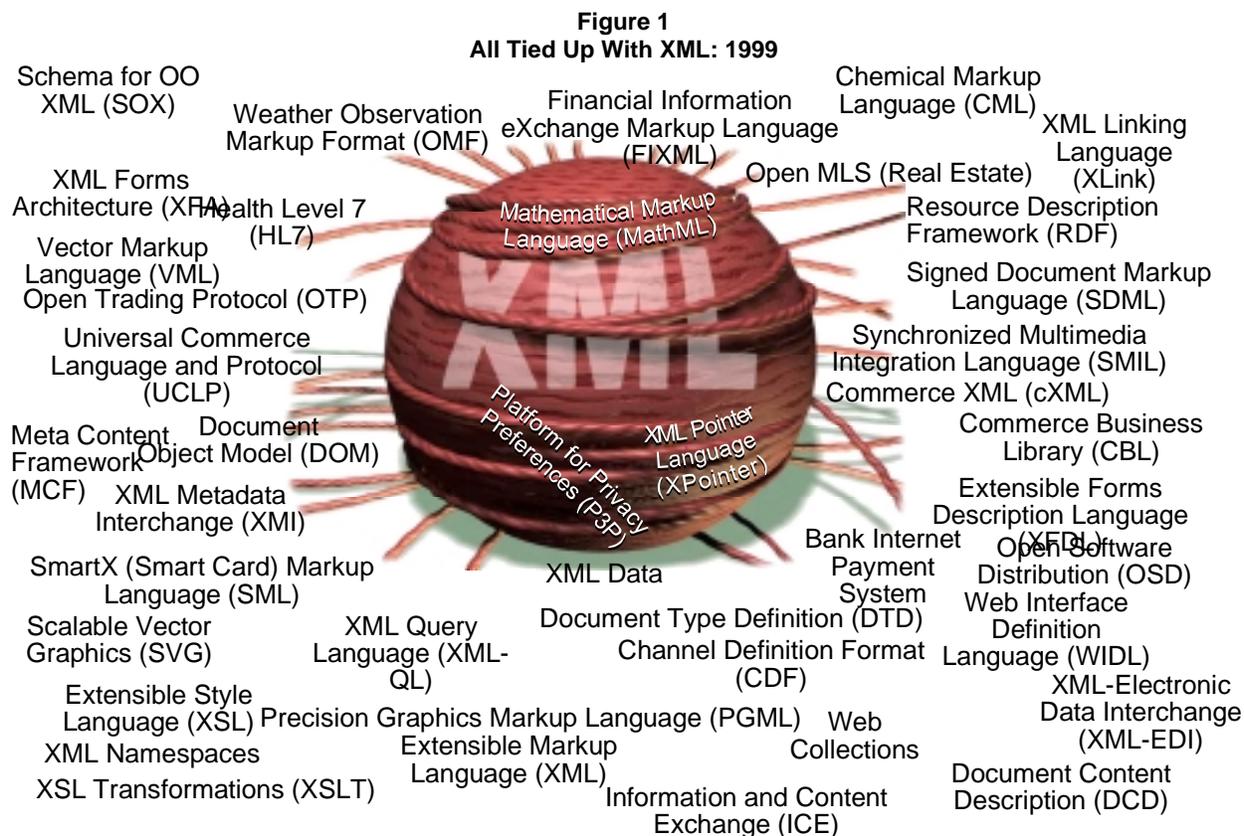


Commentary

Here's What's Wrong With XML-Defined Standards

It is relatively easy to construct XML standards for vertical domains. This has led to thousands of redundant and conflicting specifications. This chaos is the direct result of how these standards are developed.

Extensible Markup Language (XML)-defined standards began with a number of vertically focused standards in 1999 (see Figure 1) but grew to an overwhelming number by 2001 (see Figure 2).



Source: Gartner Research

approval rights. The level of agreement required complicates and slows down the development process, and often results in standards meeting the requirements of a lowest common denominator.

Some wonder why the World Wide Web Consortium (W3C) or OASIS doesn't supervise the standards work. The W3C's mission is to "lead the World Wide Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability." Hence, its focus is on core standards like XML itself. OASIS is a global consortium that "drives the development, convergence and adoption of e-business standards." It hosts work on Universal Business Language and jointly works with UN/CEFACT on ebXML; it has tended to focus on specifications relevant to many vertical domains rather than to any particular one. It is impossible for one organization to orchestrate or supervise standards development in all vertical domains, and we don't expect any organization to announce such plans.

Most of the Time, It Takes Too Long. As the size of a working group grows, so does the time to develop a standard. Discussions start about what things should be called. Should a shorthand notation be used for element names to conserve storage space and reduce bandwidth requirements? Or should long names be used so the standards are self-documenting? How all-inclusive should the definition of an element be? For example, should "person" include the person's address and phone numbers? Or just fixed information such as name, social security number and date of birth? If an enterprise attempts to standardize common elements wherever they are used in their systems, it can take a long time to reach agreement. In an investment firm, for example, this would mean the marketing department, account maintenance, personal investors, fund managers and the legal department would have to reach agreement on a common model (and XML representation) for their clients. This is a notoriously difficult, territorial and time-consuming task. This task would be repeated for every shared element — for example, product description or earnings report.

Standards Grow to Be Too Big. Historically, XML standards have been monolithic. The approach of creating all-encompassing standards follows the precedent set with document type definitions (DTDs) developed for the Standard Generalized Markup Language, XML's parent language. This means that everything in the domain intended to be covered by the standard is captured in the one standard, even though any particular transaction or data-sharing instance may not require the complete standard.

This makes maintenance of most XML standards extremely difficult. New requirements need modification to the published standard — committee work, approval and publication — and applications must be modified to handle the new additions (that is, either to process the additional data or to ignore it as an optional component). Final approval of standards is delayed to ensure that all requirements have been addressed, yet, as soon as agreement is reached, new requirements are identified. Domains are constantly evolving, so no standard, no matter how big or apparently comprehensive, can be "right" for long.

Conclusions: Wasn't XML supposed to make data shareable? No. XML provides the tools to define shareable data models, but it does not make them shareable any more than the alphabet makes every word in the English language understood by anyone who speaks English.

Aren't the problems with XML standards development true of all standards efforts? Yes, but no other standards efforts have or are generating specifications at the rate XML is (in the hundreds). XML is a metalanguage for creating standards specifications. So, it's the efforts XML supports in so many vertical domains that are both its forte and the source of the problem. The simultaneous efforts that create redundant models are the problem.

Bottom Line: Without some revolutionary change to the way in which XML-defined standards are developed, the maze of standards will continue to proliferate, and there will be no way to discover redundancies or identify conflicts and reconcile them. At the least, the proliferation of standards will result in millions of dollars of lost effort. At worst, it will corrupt data and compromise business-critical transactions and operations because different parts of the same company will process conflicting XML messages without knowing it. From 2001 through 2004, enterprises worldwide will spend more than \$3 billion on XML modeling activities with no return on investment on \$2 billion of it (0.8 probability). Enterprises must take seriously the need to look for better approaches to XML standards development. Gartner recommends that enterprises look at the framework from Accredited Standards Committee (ASC) X12 for a reference model for XML design (www.x12.org/x12org/xmldesign/index.cfm) as the best approach available today.