OASIS

The SGML/XML Web Page

Directory Services Markup Language (DSML)

By: Robin Cover

Last modified: **November 08, 1999**

Bowstreet has announced Directory Services Markup Language (DSML) as "the XML Standard for Directories that Enables Friction-free eCommerce. DSML is a markup language for representing directory services in XML. The intention of the working group is to establish it as an open standard, so that developers and vendors will be able to adopt it into their systems. DSML helps XML-based applications make better use of directories. With a recognized standard, applications can be written to make use of DSML and capture the scalability, replication, security and management strengths of directory services. With a DSML standard, any XML-based application will be able to leverage directory information expressed as XML. [From the FAQ:] 'DSML is an XML-Schema for representing Directory Services content and structure. An XML-Schema is a format for specifying rules covering the structure and content of XML documents. DSML will be defined using a Document Content Description (DCD).'

Specifically, DSML will allow these applications to utilize profile and resource information from directories in their native environment, by providing the standard schema for representing this meta-data in XML documents. Such documents can then be used by applications or transmitted via the Internet to other DSML-enabled applications. This effectively extends LDAP across firewalls and to any Internet transport protocol -- a major benefit to all inter-company efforts. DSML Working Group: Bowstreet has created the initial draft of the DSML specification. The effort is supported by IBM, Microsoft, Novell, Oracle, and the Sun-Netscape Alliance. The participants have committed to working with standards bodies, such as XML.ORG or W3C, to develop a standard schema for describing directory services in XML. Other developers and vendors are invited to participate."

"DSML Leverages LDAP: "LDAP provides a means for accessing directory information. DSML provides the means for reading and understanding directory content. Today, without the DSML standard, developers who want to use directory policy and profile information must write code for each directory they want to support. Many use LDAP access protocols to generate LDIFF or XML documents that can drive customization within applications such as electronic commerce. But such proprietary solutions impede inter-company integration, making it expensive and time-consuming to build and manage such systems as supply chain management and distribution channel management. With a DSML standard, any XML-based application will be able to leverage directory information expressed as XML."

References:

- DSML Home Page
- DSML FAQ document
- DSML fact sheet
- About DSML
- DSML Data Sheet [PDF]
- DSML In Action
- Join the DSML Initiative
- Slides from the July 12, 1999 press conference (HTML); or download the Powerpoint presentation.
- DSML Participants
- [November 08, 1999] "Bowstreet's Web Automation Factory Breaks Major Bottleneck to e-commerce Adoption: Time, Cost and Pain of Customizing B2b Web Sites. Breakthrough technology for mass-customizing B2B Web sites targeted at Fortune 1000, B2B trading portals and application service providers (ASPs)." - "Bowstreet Software Inc. today announced the much-anticipated commercial release of the Bowstreet Web Automation Factory, which breaks a critical e-commerce bottleneck by enabling companies to quickly deliver affordable, highly customized business-to-business Web sites for multiple customers and business partners. Bowstreet also announced that a growing list of Fortune 1000 companies and e-commerce leaders are beginning to use the XML- and directory-based suite to instantly "mass customize" their B2B Web sites. These customers include Federal Express, B2B industry portal innovator FreeMarkets, IBM, Merrill Lynch, NetRatings (a Nielsen Media company), Nortel, Sabre and Thomson Financial Services. Bowstreet's Web Automation Factory is the first product that uses Directory Services Markup Language (DSML), an emerging e-commerce standard pioneered by Bowstreet and supported by IBM, Microsoft, Novell, Oracle and the Sun/Netscape Alliance. The Bowstreet Web Automation Factory, based on patent-pending technology, eliminates what many industry observers believe to be the biggest obstacle to the adoption of B2B e-commerce: the challenge of creating, maintaining and linking Web sites that provide many tightly integrated B2B connections, each customized for the unique needs of a different partner or customer. The Bowstreet Web Automation Factory's four core components are: (1) Publisher is used by IT professionals to create and publish business processes in XML as a directory of Web services, thereby making them available for use by other businesses. (2) Automator is used by IT professionals to create templates that enable customized functionality and processes to be built into Web sites. (3) Customizer is a browser-based system that is used by line-of-business managers to create and manage user profiles that drive the behavior of the Web site or application. (4) The Bowstreet Web Automation Engine is the heart of the Factory. It manages all metadata in corporate directories and generates customized Web sites on the fly at run-time based on the user profile. The Web Automation Engine supports DSML connections to all major directories including those from IBM, Microsoft,

Novell, Oracle, and Sun/Netscape."

- [November 08, 1999] "New Language to Sidestep E-com Directory Woes." By Scott Berinato And Jim Kerstetter. In *PC Week [Online]* (November 08, 1999). "A group of big-time developers - led by a small New Hampshire startup - is seeking to cure many of the interoperability woes involving directories with a new language tailored for e-commerce. Vendors such as Microsoft Corp. and Novell Inc. are integrating DSML (Directory Services Markup Language) into their directory services, hoping to jump-start development of directory-based e-commerce applications that are smarter and more agile than the business-to-business software infrastructure available today. The DSML working group, which is headed by Bowstreet Inc., of Portsmouth, N.H., and includes Microsoft, Novell, Oracle Corp., Sun Microsystems Inc. and IBM, plans to submit the technology to the World Wide Web Consortium standards body this month. The group also will announce at that time that as many as 20 developers, including Cisco Systems Inc., Red Hat Software Inc. and Oblix Inc., plan to incorporate the specification into their software, sources said. DSML working group members declined to comment on their standardization efforts or new partners. DSML applies the lingua franca capabilities of XML (Extensible Markup Language) to directory schemata, which define how data is stored in a directory... despite its promise, DSML faces challenges similar to XML's. Developers that have tried to use XML to cure interoperability woes in other fields, such as electronic data transfer, have struggled with maintaining similar DTDs (Document Type Definitions) when applying XML to applications. DTDs are used to tag XML documents, and if a vertical market segment creates its own DTDs, it can disrupt data exchange."

- [November 08, 1999] "Bowstreet Looks to XML to Link Commerce Sites." By Matthew Nelson. In *InfoWorld* (November 08, 1999). "Bowstreet Software intends to make the daunting task of connecting disparate business commerce sites together easy, using XML (Extensible Markup Language) and its derivatives in the Bowstreet Web Automation Factory. Bowstreet's Web Automation Factory allows users to integrate information between different Business to Business (B2B) partners using a combination of XML and directory services entitled Directory Services Markup Language (DSML). Bowstreet has already lined up IBM, Microsoft, Novell, Oracle, and the Sun-Netscape Alliance to support DSML. The Web Automation Factory is intended to allow for easy integration and connection of data between Web sites when new members are added to a B2B site, according to the company. The Publisher component is used by IT professionals to create and publish business processes in XML as a directory of Web services, to make them available for use by other businesses. An Automator component is used to create templates that enable customized functionality and processes to be built into Web sites, including loosely coupled 'Builders' within the template to automate the calls to the various processes and data at run time. The Customizer aspect is a browser-based system that is used by line-of-business managers to create and manage user profiles that drive the behavior of the Web site or application. The Bowstreet Web Automation Engine then manages all metadata in corporate directories and generates Web sites based on the profile of the user. The Web Automation Engine supports DSML connections to all major directories including those from IBM, Microsoft, Novell, Oracle, and Sun-Netscape, according to the company." See the announcement: "Bowstreet's Web Automation Factory Breaks Major Bottleneck to e-commerce Adoption: Time, Cost and Pain of Customizing B2b Web Sites. Breakthrough technology for mass-customizing B2B Web sites targeted at Fortune 1000, B2B trading portals and application service providers (ASPs)."

- [July 12, 1999] "DSML Launch Press Release: IBM, Microsoft, Novell, Oracle, and Sun-Netscape Alliance Support Effort to Develop Directory Services Markup Language (DSML)." - "Bowstreet

Software, Inc. today announced at the Catalyst 99 conference that it will lead work to define an industry standard for describing directory service information in the eXstensible Markup Language (XML). The effort to develop a Directory Services Markup Language (DSML) builds upon work performed by Bowstreet while creating its Web Services Architecture. The DSML effort will be supported by industry leaders IBM, Microsoft, Novell, Oracle, and the Sun-Netscape Alliance to provide customers more flexibility in using and sharing directory information in XML-enabled applications. 'DSML increases the value of directory services by enabling a new breed of XML applications,' said Jamie Lewis, president of the Burton Group. 'With the advent of DSML, companies can use directory information in web-based applications and exchange information with their customers and partners, regardless of which directory products they use. The combination of directory services and XML is a significant step forward in creating directory-enabled applications and accelerates the shift toward web service architectures.' DSML provides a way to use directory information without knowing the specific data formats of each directory. End users will benefit because Web-based applications can be aware of their directory policy and profile information and adapt accordingly. Additionally, DSML enables 'friction-free' eCommerce value chains to be integrated across corporate boundaries based on directory information. This capability provides an essential building block as directories play a more significant role on the Internet. Furthermore, DSML complements the goals of the Lightweight Directory Access Protocol (LDAP) and helps to extend the power of LDAP to web-based applications."

- [July 12, 1999] "Bowstreet, IBM, Microsoft, Novell, Oracle and Sun-Netscape Alliance to Hold Teleconference July 12." - "Live broadcast from the Catalyst 99 Conference, Lake Tahoe, California. Bowstreet, IBM, Microsoft, Novell, Oracle and Sun-Netscape Alliance to Hold Teleconference July 12 at 2:40 PDT time to Announce Joint Standards Initiative for 'Friction Free' e-Commerce. Teleconference to announce new standards initiative, based on XML and directory services, for e-Commerce. Dial-in number: 888-606-8407. For playback of teleconference: 800-964-3648 through Friday; Password: Bowstreet." Topic: 'Directory Services Markup Language (DSML). DSML to be put into the public domain. Microsoft will extend Zoomit to support XML and bridge to DSML.' See DSML Web site.

- [July 14, 1999] "XML Directory Standard Debuts." By Brian Riggs. In *Information Week* (July 13, 1999). "IBM, Microsoft, Netscape, Novell, Oracle, and others plan to tie a new generation of Extensible Markup Language customer- support management, supply-chain management, and other E-business applications to directory services. The plans hinge on the development of the Directory Services Markup Language standard, which was introduced yesterday at the Catalyst 99 conference. With DSML, any XML application will be able to access information stored in directories such as Novell Directory Services, Microsoft's Active Directory, and directories used in conjunction with database, messaging, and other applications. For example, with DSML, customer information stored in the directory of a customer-relationship management application will become accessible to any XML-enabled application, letting intranet and extranet users have access to that information."

- [July 21, 1999] "Vendors Unite To Back XML Directory Standard." By Jeffrey Schwartz. In *InternetWeek* Issue 774 (July 19, 1999). "XML has emerged as the glue most likely to tie together multivendor directories. In a rare display of unanimity, IBM, Novell, Microsoft, Oracle and the Sun-Netscape Alliance, as well as start-up Bowstreet Software, agreed to support a newly proposed interoperability specification, called the Directory Services Markup Language, or

DSML. The announcement, made at the Burton Group's Catalyst conference here, is the largest show of support for a directory standard since 1996, when some 40 vendors agreed to support LDAP. LDAP, now a universal standard for client access to directories, does not address the issue of linking disparate directory servers. While DSML does not purport to solve the issue of multimaster replication, which has pitted Microsoft against other vendors, it does provide a common means of letting vendors map the schemas of their directories in a common format. DSML is designed to link XML-based data to LDAP directory data."

- [July 19, 1999] "Vendor politics slow progress of directories." By Matthew Nelson. In *InfoWorld* (July 16, 1999). "With most IT organizations needing directories to deploy and manage the next generation of enterprise applications, byzantine political battles between Microsoft, Novell, IBM, and the Sun-Netscape Alliance may delay adoption of what is a critical but still emerging technology. In regard to directories, the industry as a whole took one giant step and one halting step in the right direction during the past two weeks. At the Burton Group Catalyst conference in Squaw Valley, Calif., this week, the collective might of Novell, IBM, the Sun-Netscape Alliance, Oracle, and Microsoft rallied behind newcomer Bowstreet in the formation of an open group to create a directory standard based on Extensible Markup Language (XML), called Directory Services Markup Language (DSML). The group intends to present the proposal for a new schema for XML that will allow directories to interoperate by providing a means for directory information to be accessed even when the specific data formats are unknown. Bowstreet contends that this standard will be a perfect fit with Lightweight Directory Access Protocol (LDAP)-enabled products. In addition, several members of the DSML group, including Oracle, IBM, and Novell, had previously given their support to the Directory Interoperability Forum (DIF), which formed two weeks ago. The DIF intends to create a standard that will make use of LDAP to enable data queries across multiple directories. The vendors described these two separate initiatives as complementary and said they will probably be joined at some future point. . ."

- [July 14, 1999] "Bowstreet Works to Jump-start XML as Directory Force." By Jack McCarthy. In *InfoWorld* (July 13, 1999). "Backed by several industry giants, New Hampshire-based start-up Bowstreet Software announced here Monday it is taking initial steps to write open-source specifications for standardizing the Extensible Markup Language (XML) as the lingua franca for network directories. Flanked by representatives from Microsoft, IBM, Novell, Oracle, and Sun, Bowstreet officials said a consensus is growing that XML will form the standard for directory services that will enable businesses to move toward coordinating networks over the Internet. 'We believe directories are the only appropriate service platform to usher in the trend toward Internet management, support channels, customer service, and all kinds of business applications,' said Jack Serfass, president and CEO of Bowstreet at the Catalyst 99 conference here. 'And XML represents a whole new world for these business services.' Bowstreet will coordinate an effort to develop a Directory Services Markup Language (DSML), Serfass said. More information about the project is available at www.dsml.org, although proposed specifications will not be publicly available for two to three months, a company representative said."

- [July 14, 1999] "Novell and Microsoft agree on XML-based standard." By John Fontana. In *CNN Tech News* (July 14, 1999). "Five major vendors Monday joined forces to promote a standard way for their products to talk to each other. This could turn out to be a milestone in the history of directory interoperability. IBM, Microsoft, Novell, Oracle and Sun-Netscape all lined up behind a proposed extension to the Extensible Markup Language (XML). This extension will let directories exchange information about the data they hold. Achieving that level of communication is nearly impossible today without a rich set of tools since directory vendors use different formats, or schema, to describe the information they hold. Getting directories to exchange data is important for electronic commerce applications that are likely to link many companies over various platforms. The five companies, along with start-up Bowstreet Software, said at the Burton Group's Catalyst Conference in Lake Tahoe that they intend to present the Directory Services Markup Language (DSML) specification to a standards body in the fall. The intent is to create a standard way to query data, such as a user's name, address and privileges, from a directory regardless of the format the data is in. That data, which is exchanged using XML, can then be used in Web-based applications to identify and control the users access to applications or create custom applications for that user."

- [July 14, 1999] "Start-Up Proposes Directory XML Standard." By Stuart Glascock. In *CMP TechWeb News* (July 12, 1999). "A software start-up has gained the backing of IBM, Microsoft, and Novell along with the alliance formed by Sun and Netscape, to push a new XML-based standard for corporate directories. The Directory XML-based plan, proposed by newcomer Bowstreet Software and backed by the industry veterans, is expected to streamline the way different directories throughout and among organizations communicate with each other. Among other benefits, Bowstreet CEO Jack Serfass said he sees high hopes DXML will fuel growth of e-commerce applications. Bowstreet, which is focused on Internet channel management for business-to-business e-commerce, intends to ship product within a few months."

- [July 12, 1999] "An XML Standard for Directory Services?" By Ben Heskett. In *CNET News.com* (July 12, 1999). "A software start-up hopes to use the emerging Extensible Markup Language standard as a means to streamline the way corporate networks communicate information. The initiative has received the backing of several technology heavy-hitters like Oracle, IBM, Microsoft, Sun Microsystems, Netscape Communications alliance, and Novell. The effort floated by Bowstreet Software aspires to bring an XML-based standard to the world of directory services software, a niche populated by many of the largest software companies in the world. The Bowstreet XML-based extensions will be called directory services markup language, or DSML."

- Contact via email: info@dsml.org

Document URL: http://www.oasis-open.org/cover/dsml.html.
Please send comments and corrections to: robin@isogen.com.