

Emerging Standard Addresses eCommerce Message Security

Commerce Portals Use ebXML to Enhance Reliability

Implementing secure messaging and facilitating transactions across a distributed system continues to be an integral challenge in creating an eCommerce site. Overcoming security and reliability concerns remains essential to fully leveraging the value that a successful eCommerce site can provide.

The U.S. Department of Defense (DOD) and other organizations sponsoring eCommerce sites are succeeding in meeting a number of these challenges through the use of an emerging standard of Electronic Business using eXtensible Markup Language (ebXML). This specification defines the conversational semantics for messaging between systems to address the security and reliability issues.

For security, ebXML supports digital signatures, allowing for message authentication and ensuring message integrity. In using ebXML to send data to trading partners, the sender is guaranteed that the intended recipient receives the data and that the data cannot be modified en route. Orders can be transmitted over the public Internet at a low cost—open Internet lines are used as opposed to a closed, often expensive, private network. ebXML also specifies the level of reliability of its messages. For example, messages are delivered only once and are not subject to potential electronic errors resulting from power surges or processing glitches. Messages not acknowledged by a trading partner within a pre-determined time can be resent without fear of duplication.

As part of ongoing application development support for the Defense Department's main eCommerce site, DOD

DOD EMALL has the ability to adapt as the Department's needs evolve and to present a highly personalized screen to users based on their specific job responsibilities, security clearances, and other variables. Most importantly, it performs these enhanced functions in a secure and reliable environment.

EMALL, ICF Consulting identified a number of potential weaknesses, including orders that could be duplicated or lost between systems, as well as a number of potential security vulnerabilities inherent in the open nature of the Internet. Among the key enhancements to the new DOD EMALL structure is the use of ebXML.

Security and reliability between Web services became a key concern for DOD EMALL as transaction volume

grew from \$13.7 million in 2002 to \$188 million in 2003. Coupled with the increasing number of transactions, the government system also remains an attractive target for hackers. ebXML helps to protect against hackers by using a digital signature.

Orders through DOD EMALL, one of the largest online operations to adopt ebXML, are expected to approach \$300 million in 2005, processing transactions for more than 500 vendors and 16.5 million diverse items. Among the wide variety of items that can be ordered (each with a different security level required for approval) are office supplies, computers, custom manufactured parts, generators, software, clothing, chemical suits, and music. The system orchestrates Web services in three different geographic locations that work together as a single application to verify and complete a shopper's order. ebXML provides a secure and reliable environment for the transactions.

DOD EMALL has evolved into much more than the standard "shopping cart" for electronic commerce. It now has the ability to adapt as the needs of the user community evolve, providing custom procurement workflows for

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each agency based on their existing processes and contractual requirements. Most importantly, it performs these enhanced functions in a secure and reliable environment.

For more information on ICF Consulting's architecture development capabilities, please visit www.icfconsulting.com/ebxml. 