Neal Hannon, Editor

Leverage Business Reporting: Use Service-Oriented Architecture

BY NEAL J. HANNON

Ever wonder how a common earthworm can survive even if it has been cut in half? According to the Michigan State Science Theatre, the earthworm has organs that repeat about every 21 segments. If you cut an earthworm in the right place, the earthworm will heal and two earthworms will replace the original one.

Companies today are looking to technology's latest rage, service-oriented architecture (SOA), to perform earthworm-like magic inside their business applications. Similar to an earthworm, business applications are made up of a series of business processes that can be accessed separately. Christopher Koch describes SOA as "the big picture of all the business processes and flows of a company. It means business people can visualize, for the first time, how their businesses are constructed in terms of their technology." (See "Integration's New Strategy," www.cio.com, September 15, 2005.) Let's look at a typical business application for a movie theater, the ticket sales process:

A ticket is sold over the Internet for a show to be seen later that night. The cinema's computer updates the number of tickets sold from the information provided by the website and records the barcode assigned to the ticket. The customer prints out his ticket that comes for the show. His ticket is scanned as he enters the theater. The system records the entrance of the customer, verifies that the ticket is valid, and records the attendance for a particular movie. Additional activity relating to the recording of the sale takes place at this time.

In an SOA environment, each business process in the ticket sales process could become a service that is callable or executable from outside the application. Similar to our friend the earthworm, the business application described above could be "cut up" into meaningful business processes and exposed as services to fulfill the business reporting needs of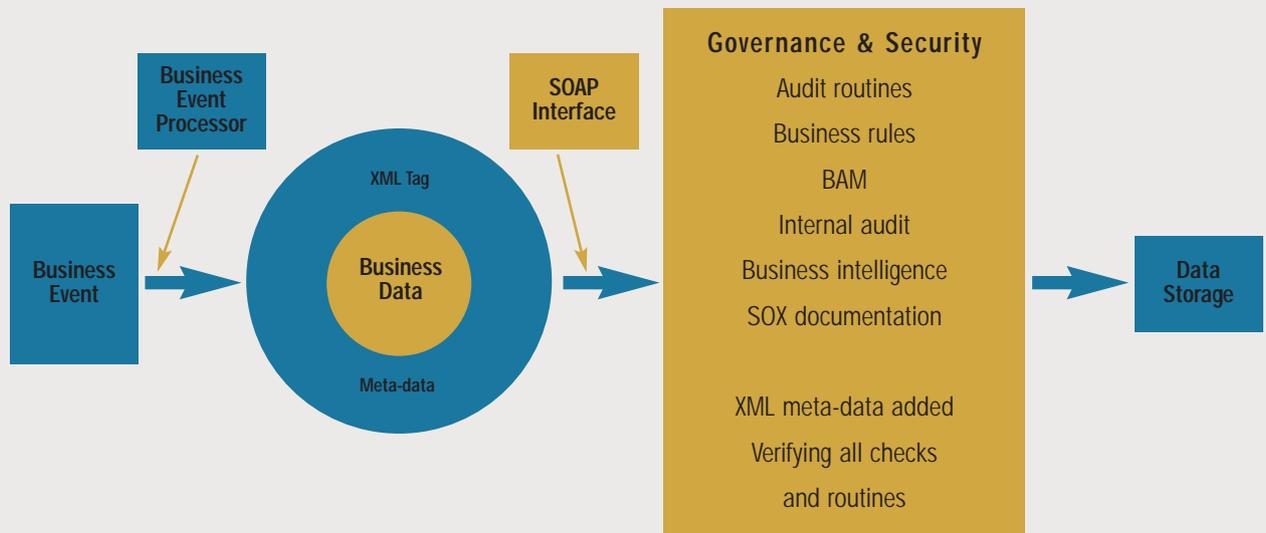 the company. For example, let's assume that information from the ticket scanning process must be sent to division headquarters. If the application contained an SOA interface, the ticket scan information could be accessed directly by a computer at headquarters using standard XML protocols. In other words, headquarters could get the information they need over the Internet without having to access the application's data retrieval system or without visiting the company's local data warehouse. Establishing the ticket scan business process as a Web-enabled service, the data stands ready to be called by the headquarters computer using open, standard techniques developed and supported by the Internet's governing body, the W3C.

Solving the Data Integration Problem

Now let's imagine that you're back in the CEO's office and facing a tough data integration problem. (See "XBRL: Making Data the Center of your Information System," *Strategic Finance*, September 2005.) The CEO says to you:

"Don't give me any excuses about your silly accounting closing schedules

Adding Meta-Data and Governance to Business Events

Business Event Processor

Business Event

XML Tag

Business Data

Meta-data

SOAP Interface

Governance & Security
Audit routines
Business rules
BAM
Internal audit
Business intelligence
SOX documentation

XML meta-data added
Verifying all checks
and routines

Data Storage

and your system incompatibilities with our legacy systems and consolidation problems with our newest subsidiaries; I want solid business results reported every morning, delivered to my desktop dashboard. I want the data to be checked against our business rules, exceptions investigated and handled, audit trails created, and internal controls followed and verified."

Exactly how will a service-oriented architecture work? First, the project team needs to rethink how the business applications are organized. No longer bound by the confines of the applications, each business process can be individually identified and exposed to processing from outside programs. For example, let's assume that a business application consists of a row of chairs that are permanently fixed to the floor. In an SOA configuration, the chairs would be freed up from the fixed position on the floor and could assume any configuration that suited the situation, such as in a circle for a meeting.

Once the business event data is recorded, a Web service can be invoked to run business rules while

the business transaction monitor is further observed by the business intelligence service. In this context, a Web service is a program such as an internal audit routine that would check the data against preset criteria. This program could be run directly against the output of a specific business process in real time. Each and every time the data is checked, an electronic cookie or additional meta-data can be associated with and attached to the data. In this way, the business event maintains its integrity and collects needed meta-data for Sarbanes-Oxley compliance.

ZapThink is an IT advisory and analysis firm that provides advice and insight into the architectural and organizational changes brought about by the movement to XML, Web services, and service orientation. In a recent article posted on www.zapthink.com, ZapThink had this to say about SOA:

"Never forget that SOA is architecture—you can't buy it from a vendor, and you can't build it with programming code. Architecture is a set of best practices that guide your

implementations, regardless of the technologies you choose to implement them. No one but an architect will have the expertise to drive the architectural parts of the SOA pilot." (www.zapthink.com/report.html?id= ZAPFLASH-2005711)

The success of the project outlined in this article will depend on the ability of the SOA team to articulate the business need in a way that the information technology people will understand. The resulting collaboration will ensure that the power of freeing up underlying business processes will provide management with the raw material for real-time reporting that is also government regulation compliant. ■

Neal Hannon is an accounting lecturer for the Barney School of Business at the University of Hartford. Author of two books and numerous articles, he is the IMA's representative to the XBRL International consortium. Hannon is a former member of the XBRL-US steering committee and former chair of XBRL International's Education Committee.