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# Mashup essentials

Most computer users have had the experience of wanting to view sets of information side by side but being thwarted because the information comes from different sources. Often, they resort to cutting and pasting from one to another. An emerging technology for overcoming that barrier is so-called “mashup” software, which provides a unified view of information from different sources. Although a small market now, those products are increasingly providing an alternative to time-consuming manual processes or expensive custom integrations.

A mashup presents information from two or more sources in a single interface, via a micro-integration that is usually at the presentation or data level. The term is borrowed from the musical world—a musical piece is combined with one or more others to create a third “original” musical piece. On the Internet, one of the earliest mashups was a combination of crime data with map data from Google (google.com), to show a geographic representation of crime rates.

“The promise of mashups is that they allow individual users to combine content on the fly that is completely tailored to their needs and their working style,” says Oliver Young, an analyst at Forrester (forrester.com). “Mashups allow users to create their own mini-application without IT oversight or resources.” At this point, Young adds, the major obstacle is that most data sources are not yet built on a service-oriented architecture (SOA), so drawing in the information is not easy. Although mashups can be created without SOA, they are greatly facilitated by that technology.



Companies that have not implemented SOA can create mashups using a variety of tools that are intended to create data services where none previously existed. “These are basically screen scrapes,” says Young, “and they have value, but are not transformational. They are an interim method of bridging the

gap between legacy applications and mashups, without relying on SOA.”

In the public sector, knowledge workers frequently need to access and interpret information from multiple sources. In the intelligence community, the need for rapid updates and analysis is ongoing. At the Defense Intelligence Agency

(dia.mil), a system called OverWatch monitors areas of concern throughout the world.

“In the past,” says Steve Willett, a specialist at DIA, “our analysts would have to check multiple sites to access the information they needed, because HTML pages with relevant information were scattered through many agencies.”

DIA began the move to service-oriented architecture (SOA) several years ago to better support military operations by improving access to data sources, and has created a data layer that can be bound to services that are mission-critical. SOA also allows for ad hoc services at runtime, providing greater flexibility in integrating information from a variety of sources. In addition, a governance system has been developed using off-the-shelf technology such as public key infrastructure (PKI) authentication, which is then wrapped around the data and presentation layers.

The combination of those capabilities is allowing DIA to make use of a mashup platform called **JackBe** (jackbe.com), which pulls information in from multiple sources to present in a single interface. Those sources include maps, RSS feeds and Web pages, which all combine to produce the “situation awareness” required by DIA. Users can create the view dynamically or add to an existing one.

“A user can update a map with RSS information that relates to that geographic area,” says Willett, “or drag items onto the ticker and they start running along the bottom of the screen.” Because security is handled by the governance layer, users can

access only the information they are authorized to see.

JackBe uses Asynchronous JavaScript and XML (AJAX) technology, which allows portions of a page to be loaded rather than requiring each page to be completely reloaded when the data changes. That technique improves speed and performance of browser-based applications.

Enterprise mashups are distinctly different from consumer mashups, according to John Crupi, CTO of JackBe. "While consumer mashups take place in the browser," he explains, "enterprise mashups happen in the data center. Therefore, the mashup can take into account security and governance."

JackBe can also push out data to the iPhone or wikis and blogs or any other Web 2.0 interface. "IT can't go to the users anymore and tell them that it will take two years to roll out an application—the pace of change is just too fast," Crupi says. Users want to define their own interfaces and immediately get the information they need.

Knowledge workers in the enterprise want speed, but they also want slices of data and smaller interfaces, rather than having to launch a big application to see just a few pieces of relevant information. "We know this because people are always copying and pasting data into Excel—they experience that interface as more manageable," Crupi says. For a long time, integration was oriented toward the back end, but now, he says, there has been a sudden burst of innovation on the consumption side. More and more, the user is becoming the director.

## Turnkey SOA

Project managers often need to view milestones and budgets together, but generally that information resides in different databases. Integrating the information through middleware or using manual approaches can be time-consuming and expensive. Mashups offer a way of integrating the information flexibly and dynamically, and at a much lower cost.

Reliant Energy (reliant.com) runs a wholesale power generation business and an electricity and energy-related products business that operate in multiple states. The company has 28 power plants, each of which needs to be shut down periodically for scheduled maintenance. The shutdowns entail a complex work schedule that is managed in Primavera (primavera.com), while budgetary information is contained in SAP (sap.com).

"We started looking for a way to interface the Primavera tool with SAP," says Mike McGinity, an IT manager at Reliant. "We considered whether to build our own interface or buy one. During our exploration process, we came across SOALogix (soalogix.com) and they had some interesting things to say." Although SOALogix was small and relatively new, McGinity was impressed by what he saw, particularly in its ability to add intelligence to the movement of data from each application so he could control the flow.

SOALogix produces two SOA appliances, Confero EPM (Enterprise Project Management) and Confero SOA. Confero EPM, which Reliant uses, provides built-in project management expertise that allows businesses to integrate project-related information from different applications into a common interface. Confero SOA simplifies the implementation of an SOA infrastructure, which also facilitates sharing information among multiple applications.

Both products work by providing adapters from the interface to the applications that are the source of the data. "We used open source SOA technology," says Rex Ahlstrom, president and CEO of SOALogix, "and added components to make it a fully functional turnkey appliance." The appliance facilitates the creation of composite applications, including mashups.

Prior to acquiring Confero EPM, Reliant used imported data in a manually driven process to update costs and map them against task progress. "One of the biggest problems with this approach," says McGinity, "was that as soon as we upgraded SAP, the process broke." With Confero EPM in between SAP and Primavera, the integration is not dependent on the version being used for either product. "SOALogix supports the ability of the two applications to talk with each other," McGinity says.

Reliant sees other opportunities to combine data from various sources into information for decision support. "We have a lot of data from plant automation," McGinity adds, "and we want to be able to use it

better." Bringing the data together dynamically into a common interface would allow Reliant to interpret it in a more meaningful way.

Organizations should carefully consider what they are trying to integrate, and why, according to Ahlstrom. "It's important to understand the business processes that the organization is trying to optimize," he says. "We start asking questions about how the users would interact with the data, and we may recommend that they come up with some best practices before going forward."

Despite the limited inroads that mashups have made into both the public and private sectors so far, most analysts who track this area see them as a vital force for knowledge management in coming years. Over the long term, Forrester's Young asserts, the greatest payoff will come from those mashups that are SOA-based and user-created rather than pre-configured. ■

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