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Bridging Technologies between MultiValue ERP *and* Office Applications

In this third article in SDSI's series exploring aspects and issues of Document Management for the MultiValue community, we talk about another bridging of technologies: your MultiValue ERP applications with Office Productivity applications, like spreadsheets, word processing, e-mail clients, and the like.

Compared with ERP-generated trade documents, these other office documents are usually looked at as being outside the control or realm of your MultiValue ERP application, but now, using an office automation software tool like SDSI's sdOffice (Fig. 1), can be created programmatically from within the MultiValue environment.

Using spreadsheets as an example, *report mining* is a typical application where raw ERP data needs to get transformed into a revised and formatted office document. Report mining/data analysis is a technology represented in the industry by a relatively small number of software development companies, and is not usually brought under the umbrella of enterprise content management (ECM) or under its document management subheading. But to a large degree, report mining tools are used to create new documents in the office productivity suite area of the network and involve varying levels of human interaction and manipulation in the process.

As a result, office document creation by an ERP application using an integrated client/server automation tool like SDSI's sdOffice carries with it a sense of synergy, specifically in the context of full document management. Synergy implies efficiency. And improving efficiency in an enterprise is usually what drives the acquisition of new IT technologies.

The first two articles in this series focused on document management from a delivery and archiving perspective and integration with a MultiValue ERP application. The direction in this article involves combining and integrating together what are usually distinct technology concepts that are not so far apart, especially when considered holistically under the broad heading of Document Management.

A unique and interesting twist to considering these two distinct technologies, specifically when considering deployment of SDSI's set of tools, is that the ERP-driven documents created with sdOffice can be automatically

sdOffice version 2 is a platform-independent, language-independent, client-server-based software tool. sdOffice gives programmers and developers the ability to integrate non-Windows applications with the Microsoft Office suite of programs, as well as other Windows-based programs. Using sdOffice to interface with Windows-based programs can enable productivity-enhancing and efficiency-boosting results which help streamline office management and control.

FIGURE 1 · So, what is sdOffice?

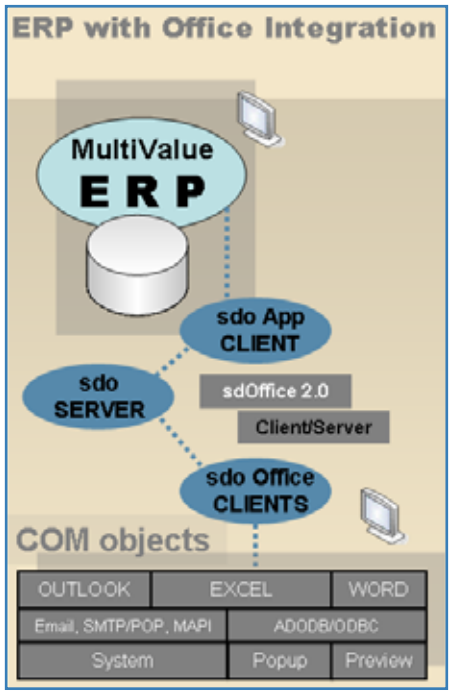

FIGURE 2 - An overview of the relationships and flow of data from an ERP application through sdOffice to Office applications.

archived during the creation process and become a part of the same archive library where other ERP-generated documents are being stored. As a result, relationships between documents using links and categories can be seamlessly maintained, which can increase the efficiency of later document retrieval out of the archives.

In looking at Figure 2, an example probably best describes the process. If you look at all the COM objects depicted in Figure 2, you can see that sdOffice drives a number of different Office tools. Excel spreadsheets are probably one of the most frequent targets of bridge technology automation, so we'll use a report mining example that involves a spreadsheet.

This example is taken from a large sdOffice user with manufacturing facilities throughout the United States. They created a whole new printing paradigm using sdOffice for reports coming out of their ERP application that streamlined manual spreadsheet manipulation and automated report delivery through Microsoft Outlook, resulting in tremendous savings. (For more information, see the detailed article on SDSI's website referenced at the end of this article.) Choosing one of the specific report automations that they have implemented — Budget Sales Analysis —, we'll see how it works:

> Budget Sales Analysis is an unattended, automated weekly sales report that e-mails 21 different salespeople their sales results for the week by customer and budget category, and then e-mails a consolidated spreadsheet to senior management. The weekly sales reports are launched automatically every Saturday morning.
>
> The 21 salespeople are e-mailed a detailed spreadsheet showing only their own results. Selected senior management and other personnel are e-mailed the consolidated

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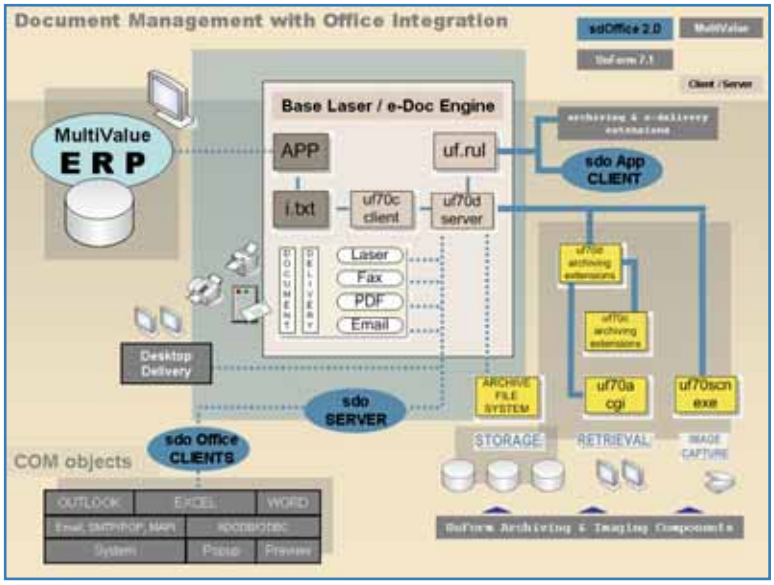

FIGURE 3 - The relationships and data flow for an ERP application configured to feed a document management system which includes an integrated Office Automation component.

spreadsheet. A data file contains the recipient list for both versions of the report.

The salesperson spreadsheet has three tabs: year-to-date, period-to-date, and special products. Each tab has left-hand columns for salesperson name and customer name, then three columns for customer totals: To-Date Sales, To-Date Budget and Percent of Budget. To the right of those columns are nine sets of the same three To-Date columns listed previously, one for each Budget Category. The special products tab has a slightly different format. As new budget categories are added the spreadsheets dynamically adjust themselves for the new columnar data. The Excel subtotal command is used to generate subtotals, which is useful on the executive consolidation report to collapse and expand the rows to drill down in the level of detail being viewed.

Slice and Dice

What we're talking about here is often referred to by financial personnel as the process of "Slice and Dice." The term refers to retrieving data from an ERP application and, using a spreadsheet, manually breaking down the imported data until it is in a format and at a detail level that is desired. This is usually done to present results or conclusions to upper management and aid in the decision-making process at the same or higher levels in the organization.

Push versus Pull

The semi-automated process that was replaced by the sdOffice process in our example was one that required use of a "report scraping tool", as the company referred to it. It was used to pull and convert the source report out of the ERP application into a CSV file and transfer it to Excel. The process — requiring at least a dozen steps when you include formatting and delivery — was reduced to just two steps.

A "pull" operation to get ERP data into an analysis tool can be completely manual or semi-automated (like the process that sdOffice replaced in the above example), or highly automated using ODBC and complicated VBA macros. All of these involve a "pull" out to the ERP application.

With sdOffice, such operations can be performed under program control

from a host application using live data. This we call a "push" operation, because the host application is now pushing data out from its domain to the target application at the other end of the bridge.

Because sdOffice operates at the level of feeding data directly to COM objects using their own APIs, its command set allows for a level of control that can completely eliminate all human intervention in the bridging process. In the spreadsheet example, all of the spreadsheet formatting commands — the kinds of operations performed manually inside the spreadsheet or sometimes automated in macros — are pre-programmed and become a part of the script dialogue between sdOffice and the COM object.

Office Automation and Document Management

The earlier example was in the context of a report coming directly out of the ERP application, where an integrator has built the client application hooks that drive sdOffice directly into the ERP application, which can be achieved using various methods.

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With the 7.1 release of SDSI's UnForm document management solution, an sdOffice application client command set has been included as a rule-set feature in UnForm so that print streams being sent through UnForm can trigger sdOffice Office document events.

One of the primary benefits of this, compared with driving sdOffice documents directly from the ERP application, is being able to work within an established rule-set design IDE to configure sdOffice documents and avoid having to embed any coding in the ERP application itself.

Figure 3 (pg 40) shows a graphic depiction of the relationships and data flow for an ERP application which has been configured to feed a document management system which includes an integrated Office Automation component.

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A second major benefit is the simultaneous access it gives you to the UnForm document archiving system. It is a pretty good assumption that many of the Office documents that might be created using sdOffice are documents that could benefit from being stored and managed by the same system which manages ERP application trade and related scanned documents.

This ability to integrate laser forms (e-Docs for fax and e-mail, document archiving, retrieval, and imaging) with Office document automation is a powerful and unique set of capabilities.

When you consider the non-intrusiveness to the ERP application of the UnForm and sdOffice client/server models, you can see that an integrator is free to configure and maintain important system applications and components independently. This is done while still enjoying the benefits from tightly coupled bridge technologies.

The Document Management Perspective

Whether in the field of science, technology, business, the arts, or education, at the root of all human progress is the concept of moving forward in a way that maximizes efficiency. Every organization has key players tasked with guiding the organization forward with simultaneous views of short, medium, and long-term strategies for success and improvement. Many of those strategies revolve around eliminating waste and increasing productivity and efficiency. And many of those strategies involve IT Technology has brought us to a place where "the document" — the central vehicle for communication between organizations and entities — can be managed electronically to provide efficiencies that can allow organizations to devote more resources to the truly productive, non-administrative activities they engage in.

We invite you to visit www.unform.com for more information about sdOffice, UnForm, and SDSI's other products. While you're there, see the News Pages link www.unform.com/newspages and take a look at the 2006 3rd Quarter article on the sdOffice implementation used as an example in this article. Also see the lead article on document management in the 2nd Quarter 2007 issue. There are links to related articles and resources there. is

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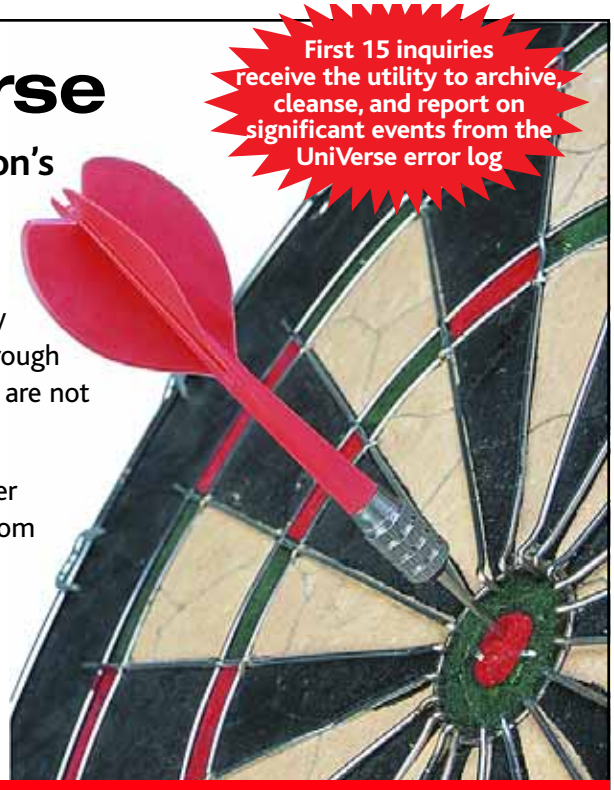

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