

CAPITALIZING ON OUT-OF-ENTERPRISE
RELATIONSHIPS TO BOOST
PRODUCTIVITY AND IMPROVE ROI

The Extended Enterprise

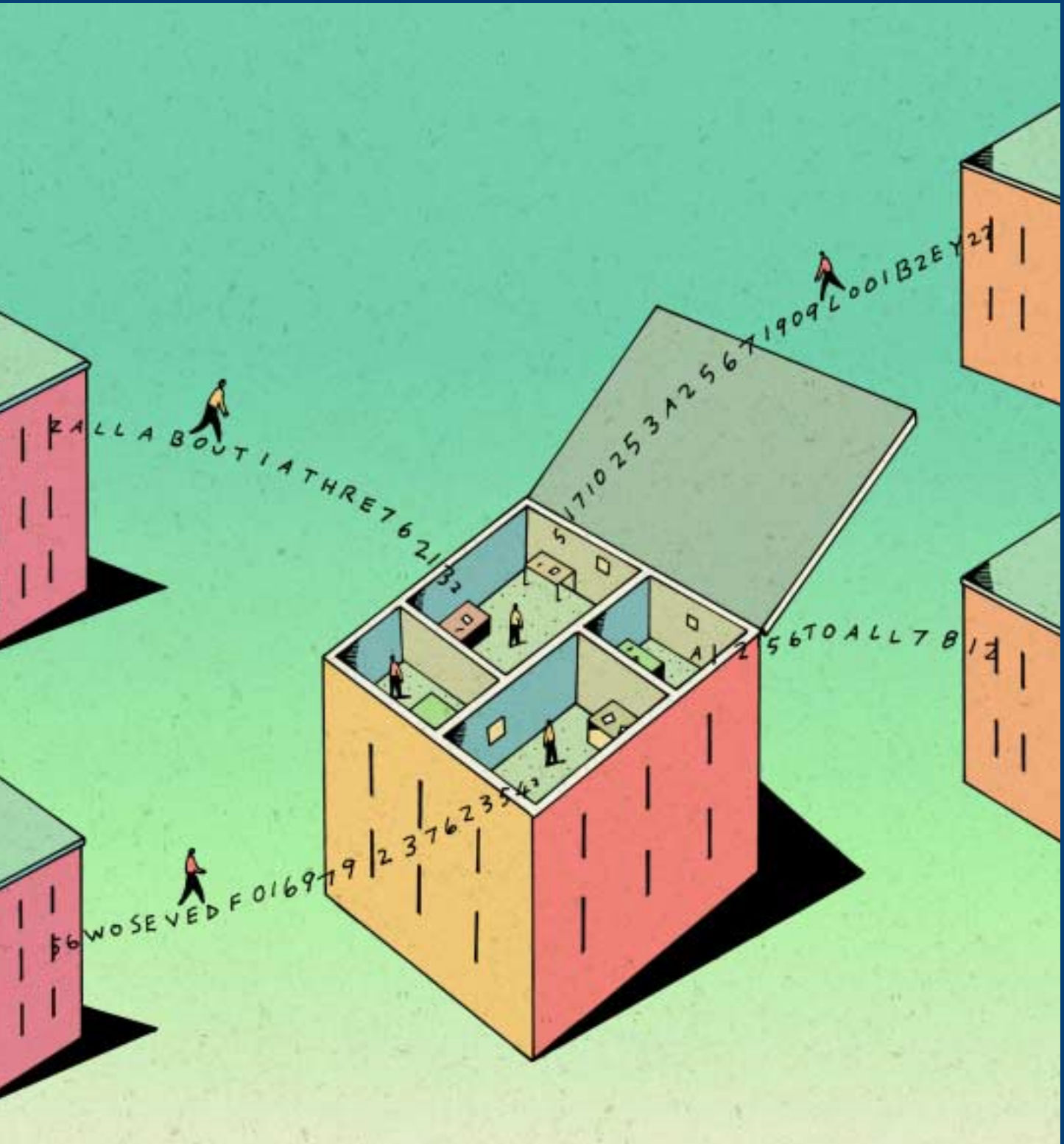
A New Era for Information Analysis and Delivery

Driven by the common business need to cut costs, increase profitability and enhance relationships with customers, innovative organizations are deploying a new generation of business systems that extend information analysis and delivery capabilities outside the firewall. These out-of-enterprise solutions give companies a new way to serve customers, interact with business partners and deliver information to all types of users—in some cases creating entirely new lines of business.



BY DAVID BAUM

ILLUSTRATION BY RANDY LYHUS



Introducing WebFOCUS Release 5

New Architecture Improves Openness and Scalability for Real-time Information Delivery

After a successful beta testing period, WebFOCUS Release 5 is entering production mode. The new architecture extends the product in two important ways:

- By broadening the reach of WebFOCUS applications
- By moving closer to meeting the demands of the real-time extended enterprise

Servlet-Based Architecture

WebFOCUS 4.3.6 introduced native Java Servlet support (in addition to traditional support for the WebFOCUS CGI), giving developers additional capabilities for creating and scaling self-service applications. In Release 5, Java servlets are used in place of Java applets for OLAP analysis and ad-hoc reporting as well. Client-side processing is handled with dynamic HTML and Java script, a much more efficient architecture since no browser plug-ins are required. This architecture also makes it easier to extend self-service applications outside the enterprise.

Enhanced Java Support

WebFOCUS 5 also includes WebFOCUS Services for Java. This is an evolutionary move that allows WebFOCUS developers to take full advantage of current industry standards. WebFOCUS Services for Java includes the following new capabilities:

- **WebFOCUS Object model:** Developers can use Java APIs to control WebFOCUS applications, including queries, styling and output formats for WebFOCUS content. Using either the WebFOCUS syntax or standard XML, developers can easily integrate WebFOCUS applications with external applications, simplifying integration efforts.
- **JSP-based development with Tag Libraries:** WebFOCUS applications can now be developed using a simple HTML coding model that eliminates proprietary syntax, with complete support for popular functions such as dynamic pick lists and intelligent forms.

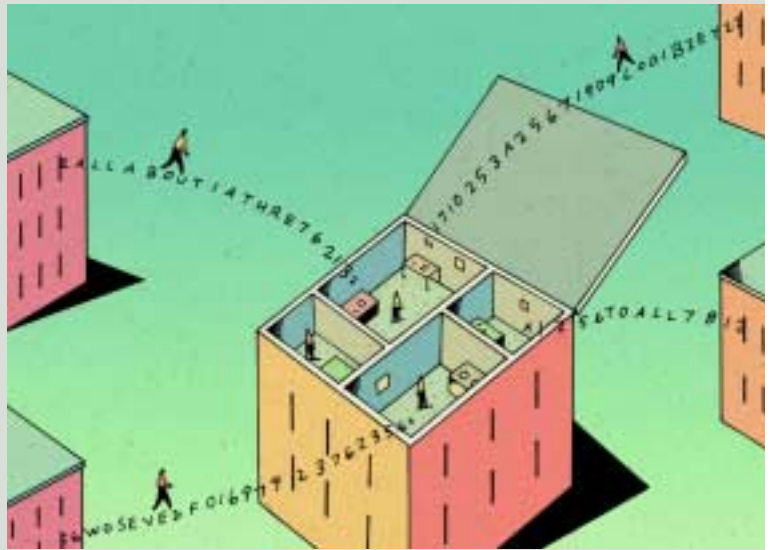
Open Environment

Several architectural enhancements improve the openness and extensibility of WebFOCUS applications:

- **Extensible APIs:** The new WebFOCUS Services API allows any Java-based application to access and automate WebFOCUS functions via Java automation. Developers can use Java to create WebFOCUS user interfaces, execute remote procedures and determine all presentation details. The new API complements all of the current capabilities of WebFOCUS, such as On Demand Paging, OLAP control, and the use of an Index and Table of Contents.
- **Open Repository model:** This allows developers to create libraries to store WebFOCUS reports, third-party reports, and other documents. The repository can also be used to organize Managed Reporting and User Administration Services, simplifying report migration and enhancing production control among multiple WebFOCUS environments.

Support for Web Services

As the industry converges on a standard mechanism for connecting software components, WebFOCUS 5 makes it easy to utilize both



SunONE (Sun Open Net Edition) and Microsoft .Net development environments. Already, Information Builders customers are demonstrating how public applications can deliver information to hundreds of thousands or even millions of users. Web Services takes this trend to the next level by making WebFOCUS technology available to a much broader range of applications. WebFOCUS developers can use widely accepted industry standards to create and extend information systems:

- Simple Open Access Protocol (SOAP) to perform interoperation between systems
- Web Services Description Language (WSDL) to publish service topologies and document available services
- Cataloging technologies (UDDI, eXML) to provide a directory infrastructure and centralized lookup services


New Distribution, Reporting and Security Capabilities

A new ReportCaster Repository and ReportCaster Distribution Server enable developers to store, schedule and distribute all kinds of reports—not just WebFOCUS reports—and trigger their delivery with events. This enhanced scheduling and delivery system can be used to archive information whether it is from a WebFOCUS system or a third-party reporting system.

Enhanced financial reporting includes dynamic charts of accounts to meet corporate requirements for General Ledger and Budget reporting. Additionally, developers can directly access financial data from ESSBASE or any other database via a graphical user interface.

Finally, enhanced session management techniques enable developers to use session tokens to safely “follow” users around the network without changing the basic stateless nature of WebFOCUS.

Improved Backend Integration Capabilities

WebFOCUS 5 is based on the iWay 5.2 architecture, improving back-end integration capabilities in several important ways. See the article about iWay elsewhere in this issue for a complete summary. 

gives dealers a snapshot of their warranty performance, but also includes powerful tools for examining their businesses.

"We needed something that could talk to disparate data sources," says Jim Lollar, North American Warranty Systems design manager for Ford Motor Co. "We wanted graphs that users could drill-down into so dealers wouldn't have to back up to previous pages on the Web. This system really puts us on the cutting edge." (View the Fall 1999 issue of Information Builders *Magazine* at www.information-builders.com/magazine for the complete story about Ford.)

New Horizons for Analysis

Above and beyond merely sharing or delivering information, WebFOCUS opens new realms of analysis to external users. For example, Ford dealers can click on hot spots within a graph to determine the average cost of repairs or the number of repairs per thousand vehicles. They can also generate charts showing repairs by components, such as engines, transmissions, suspensions or electronic systems. If a dealer's warranty record exceeds acceptable variances, one or more elements of a graphical presentation will show up as yellow or red.

This signals a new trend in information analysis. Business intelligence tools were initially used by analysts and other power users who are trained to use multi-dimensional databases, online analytical processing (OLAP) tools, and other specialized software. The new breed of business intelligence applications enable casual business users to access and analyze information using familiar tools. To Cohen, this logic makes perfect sense. "Most organizations have made tremendous investments in e-mail, spreadsheets, search engines, Web browsers, and other common productivity tools," he points out. "Rather than forcing them to learn a proprietary decision support environment, why not let them retrieve and analyze information using tools that are already ingrained in the business process?"

Hesse-Noord Natie, a major terminal operator in the Port of Antwerp, Belgium, is extending information and analysis capabilities to the people and organizations that specialize in the loading and unloading of ships. Managers simply consult a Web browser on any device to learn the status of thousands of tons of cargo coming and going into this bustling European harbor, helping them more effectively coordinate workers, allocate labor, and minimize docking charges. "Having the best logistics, planning techniques, and equipment is what gives us a competitive edge," says Paul Verbraeken, manager of Informatics at Hesse-Noord Natie. "We needed reporting software that could give us complete and accurate management information in a form that is readily accessible. That's why we use WebFOCUS."

For Verbraeken and his team, WebFOCUS is the engine that creates more than 300 reports revealing each and every facet of port operations. Managers use the menu-driven reporting application not only to view canned reports, but also to submit real-time queries to interact with live data.

WebFOCUS Offers Unique Tools For Extended Information Delivery

Extended applications represent the fastest growing market for business intelligence applications in the years ahead, as software developers uncover new domains of analysis and reporting that are not being exploited today. In some cases the implications are dramatic, particularly when a self-service application yields a competitive advantage—such as a new way to initiate and solidify relationships with customers.

WebFOCUS is an ideal tool for creating these self-service applications, either on the public Web or within the confines of a corporate intranet. With a single infrastructure for query, analysis, enterprise-wide report distribution, and external information delivery, WebFOCUS allows organizations to deliver real-time information at the point of business.

According to Dave Sandel, senior vice president of the Business Intelligence Product Group at Information Builders, there are six primary differentiators that make WebFOCUS ideal for building extended, self service applications:

1 WebFOCUS was built for the Internet from the ground up – WebFOCUS is not simply layered on top of a client/server architecture, like other business intelligence tools on the market. This means there is no software for end-users to install, and a rapid learning curve for most applications. Thanks to its true thin-client orientation, authorized users simply need a standard Web browser to access WebFOCUS resources. "This is a prerequisite for self-service applications," Sandel explains. "All the user needs is a URL and a password to get into most of these public information systems."

For example, allowing automotive dealers to interact with warranty data in an ad-hoc fashion, as Ford has enabled, typically requires client-side software. But Ford didn't want to burden its dealers with any special software on their computers. WebFOCUS was the answer, since it delivers powerful interactivity but demands no more of dealers than an ordinary Web browser.

2 WebFOCUS is fast and inherently scalable – When complex queries are submitted, WebFOCUS only sends the answer set to the requesting user, minimizing network congestion. This server-based architecture not only minimizes network traffic, but also is easy to scale. WebFOCUS applications can be installed on many types and sizes of servers, with inherent support for load balancing and fail-over.

3 WebFOCUS has unique integration capabilities – With direct access to more than 80 types of data—including legacy transaction systems and enterprise resource planning (ERP) data—WebFOCUS does not force developers to write special code to extract unique data types. An advanced point-and-click development environment makes it easy to construct pull-down lists and drill-down scenarios, and WebFOCUS even preserves the context of drill downs for several levels—commonly called knowledge

mapping. "If the user moves from A to B to C, WebFOCUS maintains the context so that the results the user seeks in C reflect where he came from in A," Sandel explains. "This is unique among business intelligence tools."

WebFOCUS developers can use a graphical design tool to organize information into a customized portal-like user interface that requires only a browser for access. WebFOCUS applications can also be easily integrated with popular third-party portal environments from Computer Associates, Plumtree, IBM and other vendors.

4 WebFOCUS is backed by a mature fourth-generation language (4GL) – Some information delivery applications have a continually changing set of requirements, necessitating complex data processing behind the scenes. A prime example is the Bank Book Reconstruct application created by Royal Bank, which creates personal banking statements from six years of transactions in response to simple user qualifications. (See related story elsewhere in this issue.)

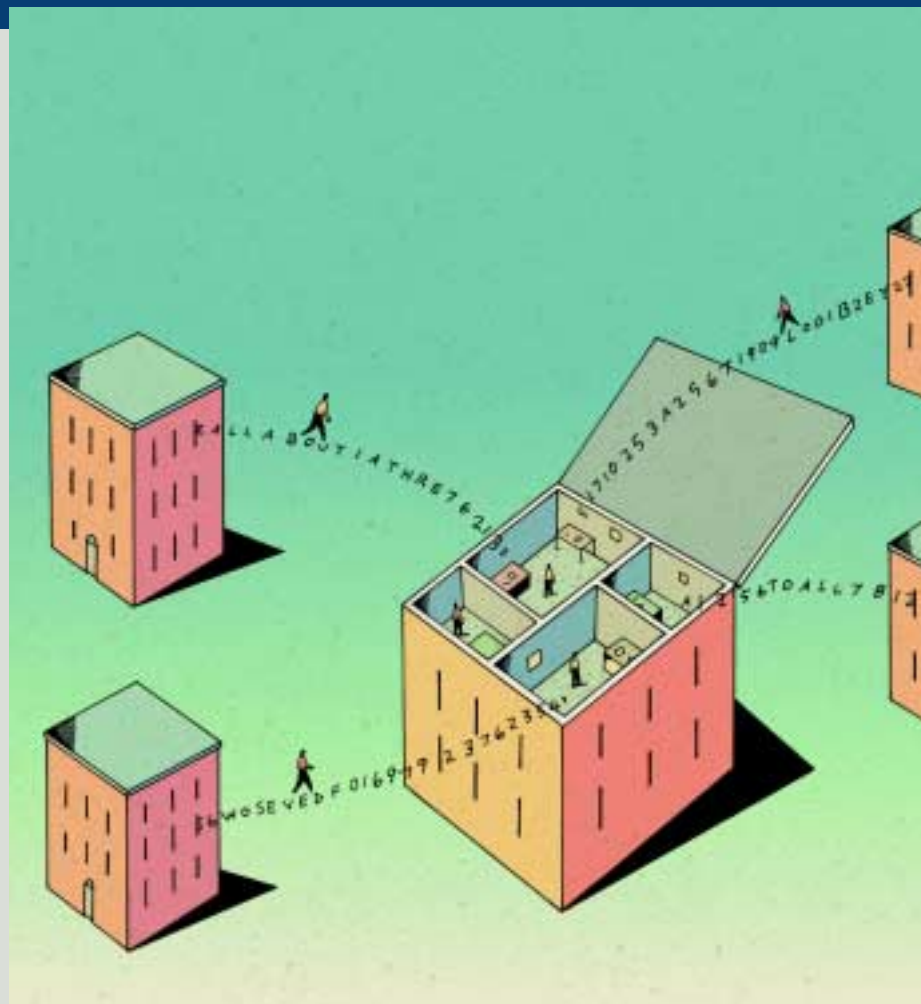
"WebFOCUS includes a 4GL to tackle really complex problems that a graphical user interface can't handle," says Sandel.

5 WebFOCUS can create named-user environments with multiple levels of security – Another unique aspect of WebFOCUS is User Administration Services, a utility that makes it easy for developers to set up the overall look and feel of any application—who gets the information, when they get it, how they get it, and so forth. User Administration Services can also be used to identify the correct security infrastructure and apply it to each reporting application: database security, roll-based security, user-level security, and so forth.

For example, Administaff used WebFOCUS to give external users secure access to personnel-related reports on payroll, employee benefits and other types of human resources information. The company, which provides personnel management services to small and medium-sized businesses throughout the United States, created an information delivery system that supports thousands of client companies and tens of thousands of worksite employees.

"We provide a wide range of information to our clients," explains John Sheridan, applications manager at Administaff. "WebFOCUS allows us to create a reporting system that expands the functionality for users."


Because WebFOCUS uses the Lightweight Directory Access Protocol (LDAP) to support single sign-on, Administaff was able to simplify user authorization among multiple systems. "We can pull in security tables from other sources, as well as take advantage of database-level and OS-level security functions," says Dennis Cooper,



director of business systems at Administaff. "This gives us lots of flexibility for authorizing users and protecting sensitive data."

6 WebFOCUS supports a diversity of report distribution capabilities, output formats and end-user platforms, including wireless devices – If an organization needs to distribute ten different versions of the same report to ten different people, most business intelligence tools force it to run that report ten different times. WebFOCUS runs the report once then uses an automatic bursting mechanism to distribute it to each user based on his or her security profile, access permissions and so forth. This is a more efficient use of network resources.

With WebFOCUS, users can select the output format as well, whether that means a PDF file in Adobe Acrobat format, an email attachment, simple HTML text, or direct input into an Excel spreadsheet. Built-in integration with mobile computing platforms enables WebFOCUS both to push critical information to wireless devices and to pull information from production information systems via e-mail.

"Our goal is to enhance the service we offer to clients," concludes Sheridan. "WebFOCUS makes that easy to do. It gives users the flexibility to create the types of reports they need and present the data in a meaningful way." 

This helps terminal operators make split-second decisions that optimize the loading and unloading of cargo.

Leveraging Existing Investments

As Gary Beach confirms in his discussions with dozens of CIOs, budget-conscious executives are eager to utilize the tremendous investments they have made in IT over the last decade. Why not deliver information to users in a form they can instantly apprehend with familiar tools and utilities? This directive becomes even more important once an online application is extended to an external audience. “You can’t expect an outside user to install and learn special software just to get information off your site,” Beach suggests.

Cohen expands on this principle. “If I’m a financial analyst, I want to see information in a spreadsheet, perhaps an Excel pivot table. I don’t want to have to install a plug-in or use a custom report viewer. It should come to me in a common format like HTML, Adobe Acrobat, or Excel.”

This same line of thinking applies to the devices that users prefer, whether it’s laptop computers, mainframe terminals, or personal digital assistants (PDAs). “Information should be delivered to the point of business—to the places where decisions are made—whether that’s on a local network or via a wireless device,” continues Cohen. “An extended information-delivery architecture should use the paradigms companies already have in place so there’s no learning curve, no technology barrier, and information flows right into their existing business processes.”

In the public sector, the New York City Department of Health worked with Information Builders to set a new standard for information-sharing. DOH’s IT pros use WebFOCUS to share restaurant health inspection information with citizens via the Internet. “Information Builders Consulting played a crucial role in helping us to develop this system,” says Edward Carubis, assistant commissioner for Management Information Services at the DOH. “Their hands-on involvement and ability to solve problems and offer alternative solutions greatly accelerated the development process.”

The City went on to create a public information system that coordinates information from hospitals, emergency workers and disease control centers to proactively monitor outbreaks of diseases that could lead to a potential epidemic. The system uses data-integration technology from iWay Software to combine the data, and WebFOCUS software to structure and present the information. Best of all, users don’t need to bother with any special tools to find relevant information; they simply check their email or log into the Web to find pertinent information.

At face value, such applications may appear simple. But there is often complex integration technology working behind the scenes. IT professionals at Bombardier Capital are well acquainted with these integration challenges,

which is why they turned to iWay Software for help keeping a complex SAP R/3 software implementation on schedule. “As we depend more and more on SAP R/3 applications, iWay Software’s Data Migrator technology becomes increasingly important to our business,” says Rick Mitchell, CIO at Bombardier Capital.

Like the New York Department of Health, Bombardier Capital needed to develop interfaces among several legacy systems to put information in a common format for reporting. Bombardier Capital’s Rail Car, Manufactured Housing Lending, Inventory Finance, and Aircraft Services Divisions each have their own legacy accounting systems. Computer platforms include Microsoft Windows NT, IBM AIX, IBM MVS, IBM AS/400, and IBM DOS/VSE. Databases include Microsoft SQL Server, IBM DB2 Universal Database, IBM DB400, Unidata, CA-IDMS, FoxPro, and Pervasive SQL 2000.

Mitchell and his team are using iWay technology to extract, transform and load data from all of these systems into the SAP General Ledger so users can produce financial statements more quickly. Bombardier purchased iWay Software’s Data Migrator for SAP software and enlisted iWay Consulting to help create the legacy interfaces.

“Customers appreciate being able to get at information 24/7 ... they feel plugged in to the process. You can’t put a value on that type of satisfaction—it is extremely significant to an organization”

– Joe Namie, Project Manager, FedEx

An Escalating Trend

Cohen believes out-of-enterprise information sharing will soon become commonplace. His research shows that 20 percent of new WebFOCUS customers are currently creating applications that extend beyond enterprise walls. “Until recently, the results from something like restaurant inspections might have been stored in databases that were difficult to make public,” he says. “Now, that data is being repurposed and posted on the Internet.”

In the end, it’s all about business value: providing customers, partners, prospects and all other out-of-enterprise users with easy access to the goods, services and information they need—when and where they need it. “Our partners embrace information because it helps them make better decisions and expand their role in our transactions,” sums up FedEx’s Namie. “The intangible aspects of this type of collaboration are hard to measure, but the increased profits tell us that we are improving efficiency and building satisfaction with our constituents. And that leads to mutual growth among both parties.”

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