

INSIDE! DESIGNING WIRELESS PDA APPLICATIONS

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inSecurity

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Throughout history, posters have been used to communicate messages concisely and often beautifully. Take the poster illustrated here. It pays homage to the works of David Lance Goines in the 1970s. A leader in the free speech movement, his linear style and pastel colors express the concept of freedom. A concept that, with jBASE, you'll actually be able to experience firsthand.

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40 SPECTRUM SPOTLIGHT: EXCLUSIVE! jBASE CHANGES HANDS, BECOMES jBASE INTERNATIONAL

At press time, jBASE Software, formerly part of the TEMENOS Group, had been bought by U.K.-based Mpower1. What can the MultiValue industry expect from this latest acquisition?

22 IMHO (IN MY HUMBLE OPINION): YOU DANCE WITH THE ONE THAT BRUNG YA

In project management, it's not just what you do but how you do it. This means using the database that is being used for the project, to conduct the project. In non-multivalued projects, it means using a MultiValue database during the project, for any task or process where quick, multi-access data and/or documents are needed.

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In his many travels, author Mark Johnson has come across a variety of different archiving methods and program renaming conventions. Covered here are a couple of concepts to consider when changing existing programs.

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Why be tempted to leave the MultiValue world with the promise of mainstream databases, data warehouses, data marts, and sophisticated sales reporting, among other treats, when you can have all that and your MultiValue-based application?

The new generation of ODBC tools can be quite effective for sharing information between databases as well as with ODBC-compliant application software.

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CORRECTION In the Sept./Oct. 2002 issue, in the BTW article on page 45, one reference to the Web site address for PickJobs was incorrect. The correct Web site address is www.PickJobs.net.

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[FROM THE **INSIDE**]

If It's Out There - Anybody Can Have It

Try this one out! Log on to a search engine like Yahoo and type your exact Web site address in the search field. Put in the whole thing, including the www and the dot com.

For most Web sites, yours probably included, Yahoo will return the site at the top of the list, with a clickable link that invites you to "search within this site."

If you haven't been real neat about cleaning up the files in your Web Server folder, stand by to be appalled. On our site I found links inviting people to attend events long since passed, outdated press releases, old test pages, and a whole bunch of other garbage! I'm just glad I didn't have any pictures of me wearing my prize winning coconut and grass skirt costume at last month's annual luau at the marina!

I know! Probably everybody else but me knows all about this, but all this time, I was under the blind illusion that if I didn't let you get to it from a path that started at our home page, you couldn't get to it. If I happened to glance at the server console and see somebody accessing an old file, I just thought they were working from an old cached page from our Web site.

I should have known better. When I first met the Internet a long time ago, our designer told me, "Gus, if you're going to put it on the Internet, anybody can have it!" I wish he would have added, "And if you put it in this folder, they can have that too!"

— GUS GIOBBI, CHAIRMAN, IDBMA, INC. —
gus@intl-spectrum.com



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The History of MultiValue

B Y G U S G I O B B I

CHAPTER 8

The late '70s and '80s saw a gradual evolution of the PICK system. The company fine-tuned it and several enhancements were made. The final release of the product in 1983, dubbed R83, was touted as a wonderful example of a stable, mature, application environment.

To say that R83 had its share of idiosyncrasies and flaws is an understatement, but to be fair about it, those who understood what the world was all about knew that Pick Systems was a "development house" and a think tank of sorts, and companies like Ultimate and ADDS understood that to make the Pick System into a mission-critical production system would take substantial additional investment and time. Not a few other Pick licensees learned that lesson the hard way.

Understanding that, Pick Systems undertook in the early '80s to refine the classic R83 version of the operating system. Initially dubbed R84 and then re-named Open Architecture (Pick OA), it was not until 1986 that a commercially viable version of OA was released. The industry generally expressed that OA was a major disappointment, containing few enhancements beyond the classic R83 Pick system.

Archford Computers International of London was the first to use OA on Pinnacle hardware. It was released at the International Spectrum Show as OA Version-1 in London in October 1985, but delivery did not begin until early 1986. OA Version 1 was essentially a complete rewrite and reorganization of the internals of the Pick Operating System which was R83 compatible and had just a few of the OA features. It is estimated that several hundred systems were delivered by Archford with Version 1.

About a year later, the roots of Open Architecture split when Pick Systems' then vice president, Rich Lauer and Pick's leading mastermind, Tim Holland, left Pick Systems to form Concurrent Operating Systems Technology (COST). Following that separation, COST obtained a Pick license and began the implementation of Open Architecture for Sequoia Systems using OA Version-1 as a base for development.



Rick Lauer and Tim Holland — Founded COST to mold the Pick Operating System into a finished product.

Commenting on the reasons for the formation of COST, Tim Holland said, "(Dick) Pick was heavily involved in new product development and was not paying a lot of attention to supporting licensees. He was concentrating on getting the next version of Open Architecture running at that point and spending most of his physical energies on expanding the feature list of the system."

In late 1987, Sequoia Systems acquired COST, and all staff and development work were merged into Sequoia's operation. **IS**

Open Architecture's New Features

- Boot Time Diagnostics
- Dynamic Workspace Allocation
- One Frame Size & Format
- Symbolic References
- Multiple ABS
- Case Insensitivity
- Phantom Processing
- TCL Editor and Stacker
- Macros and Menus
- Call Basic From Dictionaries
- Unlimited String Size in Basic
- Enhanced Basic Functionality
- Incremental File Save
- Transaction Logger
- File Control Blocks
- Multiple File Indexes
- Unlimited Item Size
- Improved Item Storage
- B-Tree Overflow

Sewing-Machine Foot Pedal

Like all public figures, Dick Pick had more than his share of fans and critics. The fans understood that his fascination and dedication lay with the ever evolving technology of his invention, but his critics thought he spent too much time tinkering and not enough time developing a bullet-proof business system.

No single item evoked as much passion in this department as his "sewing machine foot pedal" that he interfaced with his personal workstation. Depressing the pedal would activate the "ctrl" key on his keyboard to make it easier to perform functions that require pressing three keys at a time (such as ctrl-alt-delete). To his detractors, this sort of thing was "evidence" that Pick Systems would always remain a development house and never produce a production product.



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Protecting Your INVESTMENT *How Not to Migrate...*

B Y J E F F J A K U S

There are many predators targeting your business with the hope that you will make the decision to leave the MultiValue world. They are promising mainstream databases, data warehouses, data marts, drill down and sophisticated sales reporting, among the other treats that come with migration.

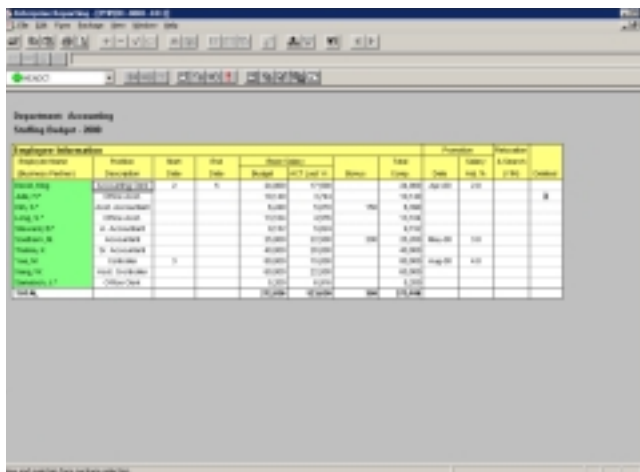
But, the reasons you have the software application that you do are still valid, in fact, very valid. So why leave your working business rules behind and cross the frontier, as a pioneer, for a more complex — and certainly more expensive — computing environment? It is not just the cost of a new application, or the training of your existing personnel, or the adding of additional personnel, or hardware upgrades, or new databases. It is also about loss of revenue with lower productivity during an application migration and potential system down time at conversion.

In today's world many productivity tools have appeared on the IT scene. These tools were designed to complement the trendy databases such as Oracle and SQL

Server and to provide corporate management with new ways to look at their data.

Terms like Business Intelligence, Data Warehousing, Web Centric, e-Commerce and Shopping Carts have contributed to an overwhelming alphabet soup.

I am not the oldest surviving member of the MultiValue database market, but there are becoming fewer and fewer of us around that have lived here for 20 years or more. We know that the database is superbly suited for the applications that we run and for the business problems that need to be solved. We even know that the speed of character-based data entry will win against Windows and mouse clicks, every time.



Department	Account	Balance	Debit	Credit	Balance	Debit	Credit	Balance	Debit	Credit
Accounting	1000	1000			1000			1000		
Accounting	1001		1000			1000			1000	
Accounting	1002			1000			1000			1000
Accounting	1003				1000					1000
Accounting	1004					1000				1000
Accounting	1005						1000			1000
Accounting	1006							1000		1000
Accounting	1007								1000	1000
Accounting	1008									1000
Accounting	1009									1000
Accounting	1010									1000
Accounting	1011									1000
Accounting	1012									1000
Accounting	1013									1000
Accounting	1014									1000
Accounting	1015									1000
Accounting	1016									1000
Accounting	1017									1000
Accounting	1018									1000
Accounting	1019									1000
Accounting	1020									1000

ODBC—Open Data Base Connectivity—provides connectivity between the MultiValue world and mainstream databases and applications.

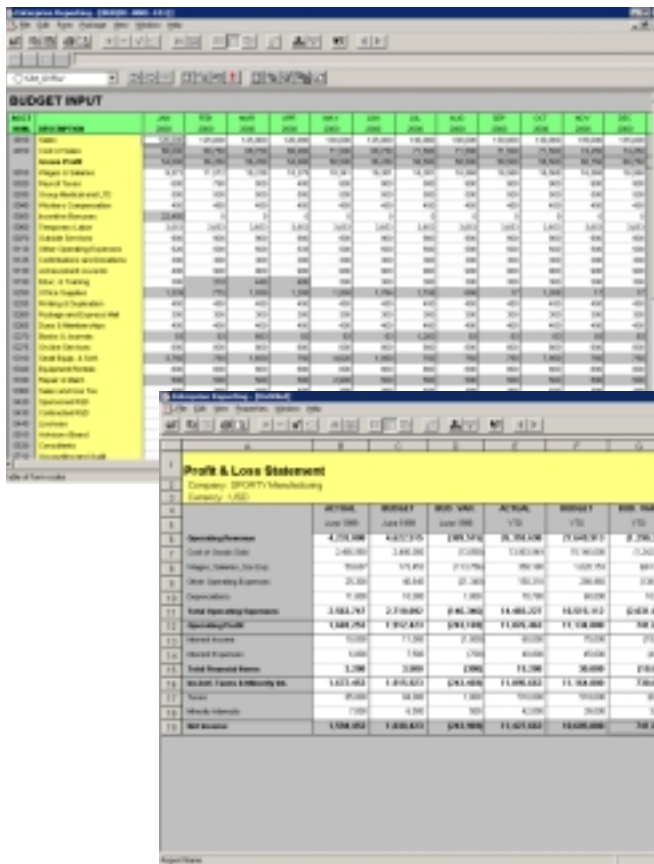
The good news is that you DON'T HAVE TO LEAVE the MultiValue database world in order to benefit from the new technologies that have been introduced by the "other" guys over the past few years.

There is a standards-based technology called ODBC that stands for "Open Data Base Connectivity" and it was developed by Microsoft. The idea was that in order to get bigger market share for Access and SQL Server, there needed to be a method to connect these products to the Oracle's and DB2's of the world. Information could then be shared between databases as well as with ODBC compliant application software. Microsoft has ODBC enabled most of its tools such as Excel and Word and the

Windows developers have followed suit — Crystal Decisions, Cognos, Great Plains, Web Methods and many more.

There is more good news. ODBC is also available for MultiValue database users, so there is no longer an overwhelming reason to leave. You can now have Investment Protection!

The primary reason that the MultiValue database community has been lagging in providing a strong ODBC solution is that the



ViaODBC allows MultiValue users to use products such as Crystal Reports and others.

(and MV compatible) reporting tool is called Crystal Reports.

Data Warehousing and Data Mining provide amazing results with Cognos Powerplay, Crystal Analysis and a new player by the name of XL Reporter coupled with SQL Server.

Web Methods is another amazing tool, allowing you to coordinate and monitor multiple processes whether they are databases, Web sites or applications. Visual Basic is ODBC compliant as are Excel and Word using MS Query to structure your MultiValue data for viewing in most Microsoft products.

The bottom line is that all the Windows and GUI tools can be used effectively and in real time using ODBC while maintaining the integrity of the systems you have become accustomed to over the years. Whether your hot button is a GUI front end for your business application or just getting better reporting — ODBC is the solution.

ODBC opens a whole new world to companies running legacy business applications such as Dataflo, Avante, Manfact, LIB, Select, Collector, Excalibur, Colleague, Benefactor, Ratex, ULTRADATA, Mega West Medical Management Suite, Harris Utility Management, Profi'C, TSM Vintage, Breakaway and the many, many others that make up the world of MultiValue software solutions.

ODBC powered solutions can be as simple as routinely refreshing a pre-formatted Excel spreadsheet that automatically opens a connection to the MV database and returns the requested data in real time. Or, on the more complex side, an SQL Server database can be continually updated with pre-defined MV data which is integrated into a data mart and is then available for slicing, dicing and reporting in more ways than you can imagine.

Remember: Your investment is protected with ODBC. is

market is so fragmented. IBM's U2 databases have an ODBC offering that often requires upgrades in hardware and software to get limited productivity and reportedly improper multi-value handling. Raining Data and D3 are in a similar boat as they concentrate on enhancing their newer products. jBASE has a nice solution, but it is only available to customers using its Enterprise Version since ODBC is not part of its core offering.

There are two long-term MultiValue tools developers that entered the ODBC market to provide products that would work regardless of the MultiValue database that was in use. Liberty Integration came on strong but was swallowed up by GA eXpress during its acquisition heyday. This solution is still available, but is no longer the company's flagship product.

The leader in cross platform MultiValue ODBC solutions is a product called Via ODBC which was developed by Via Systems Inc. Via has been a major player in MultiValue database connectivity since 1978 and is now stronger than ever as a subsidiary of the financially sound MultiValue VAR Electron-ic Data Processing, in England.

ViaODBC has been continually enhanced by adding new functionality with a particular emphasis on improving performance in every area where possible. The proper handling and implementation of multivalues and subvalues with ODBC is not a trivial task. Anyone that has had a prior experience with a MV ODBC tool that resulted in poor performance or mishandled data should take another look at the new generation of ODBC tools that are available today.

There are many very powerful products which are complementary to your business application that utilize the ODBC standard interface. For Business Intelligence and Enhanced Reporting, your options include Microsoft Business Solutions with Enterprise Reporting (originally from Great Plains) and Cognos with its Impromptu solution. Another favorite

The author, Jeff Jakus, president of @Better Results Inc., can be contacted via email at Jeff@BetterResults.com or by phone at (480) 346-9070. Jeff has held a number of sales and marketing positions within the MultiValue database community during the past 20 years, starting with DataWorks in 1983. @Better Results specializes in ODBC and data migration technologies, creating new life for legacy applications including enhanced reporting, multiple database access, data exposure on the Web and business intelligence.

▶ See mvToolChest: "Protecting Your Investment" by Jeff Jakus on page 10 in this issue.

Letters to the Editor

Did ODBC Get a Bad Rap?

Well, as usual, I enjoyed receiving my *Spectrum* magazine (Sept/Oct 2002 Issue) and proceeded to read through the content.

After reading Michael Ballard's article, "Lessons Learned in MultiValue Reporting," I felt like our company's depth meter had just plunged to two feet or less (nice boat, by the way). Michael may be an MV expert, but he certainly is not an expert on reporting options for MultiValue databases. He does a fair job of denouncing ODBC, which was developed by Microsoft as an industry standard that allows information to be shared between disparate databases and open applications. We have built our business on reporting technologies for MultiValue databases — and ODBC is a very big part of what pays our bills every day.

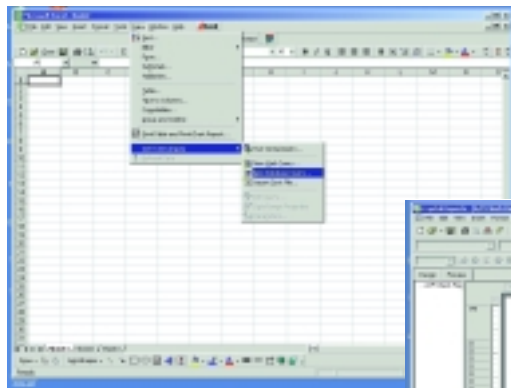
His article is really about a very narrow market (Epicor iSolutions) and focused project (Report Writing for Manfact, Avante and Dataflo) while he was employed at Epicor. We replace the

solution he helped develop (Report Wizard) on a regular basis with ViaODBC coupled with various industry leading reporting technologies including, but certainly not limited to, Cognos Impromptu and Powerplay, Crystal Reports and Microsoft Enterprise Reporting as well as Microsoft's Excel and Word.

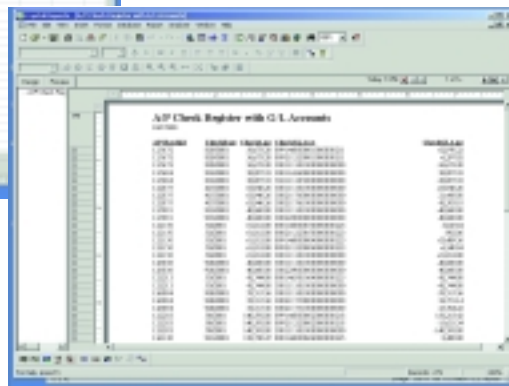
I take particular offense to the statement on page 24 that states: "I quickly concluded that ODBC was not a good approach to accessing MultiValue (or any Pick-like) databases." He goes on to discuss producing "wrong" information, improper "null" handling and the inability to produce consistent results when multivalues are involved.

If he would have divulged the fact that these are all deficiencies of the U2 middleware product called UniODBC then I wouldn't have felt so bad. But, since he did not specify which ODBC tool he was referring to, he has, by inference, included us in the category of "ODBC is bad." While his assertions apply to the U2 middleware, the Via Systems ViaODBC product is very different. Via Systems and @Better Results have both spent many hours fine tuning a set of ODBC tools that handle MV data properly, efficiently and accurately — not just with the U2 databases, but with ALL MV databases.

Just to make it clear, @Better Results is the primary distributor of the ViaODBC product in North America and we work very closely with the



ODBC can be an effective method to connect MultiValue databases to leading reporting tools.



The Author Responds

Jeff is correct in pointing out that my experience with UniODBC and its predecessors left me looking for a solution that end users with minimal specialized education could use. Given sufficient training on the details of structure and content of the U2 database and the details of how to use Crystal Reports and other similar products, it is possible for end users to generate some pretty amazing reports using UniODBC and its predecessors. The problem in that statement is the issue of "sufficient training." It was made very clear to the original design team that our end users had neither the time nor the inclination to get that "sufficient training." They wanted something that the least computer-savvy end user could use to generate simple reports and a more knowledgeable user could use to make fairly complex reports. UniODBC could not meet this need.

I have not used ViaODBC or any other third-party ODBC tools and I'm very curious to see how ViaODBC has overcome some or all of the issues I saw in the U2 tools.

In recent years, Epicor responded to the end users' demands to offer ODBC solutions in addition to or in place of Report Wizard. Epicor developers (and others) spent the time to create schemas that would give the users the fields they needed in a structure that would minimize or eliminate the problems that came up when trying to use UniODBC on the raw file dictionaries. The consulting group at Epicor has been doing a lot of work to help users learn to effectively use tools such as PowerPlay and Impromptu from Cognos. Numerous consultants and other third parties offer add-ons or replacements for this (and other) parts of Epicor's applications. ▼

Continues on page 14

folks at Via Systems in making certain that together we provide the preeminent ODBC product for reporting using standard (non-proprietary) Windows based reporting tools and connecting to other non-MV databases.

In order to get out the correct news, how about agreeing to print a rebuttal that would allow us to highlight the capabilities of ODBC and the place within the MV market where this technology is a definite fit?

- **Jeff Jakus, President**

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The Author Responds

Continued from page 13

Jeff is also correct in his observation that the initial target audience for Report Wizard was Epicor's U2 application users running DataFlo, ManFact, and Avanté. It was originally written for DataFlo but with the expectation that it would be quickly adapted to ManFact. Avanté didn't come into the picture until somewhat later.

There is no technical reason why Report Wizard could not be offered to the general U2 community. In fact, before the merger of Unidata and Ardent Software, Unidata management expressed interest in acquiring Report Wizard. Post-merger, the interest disappeared. I don't know why.

Report Wizard is implemented as a VB program on client PCs interacting with a set of UniBasic programs and subroutines on the U2 server. One of the original design goals was to not have to duplicate security-related information for the tool. This primarily refers to such things as O/S and Application User ID and Password as well as File and Field permissions and restrictions. Since these things in U2 environments are typically implemented by the tools used to develop the application (Preview, ELF, SB+, DEU, Blacksmith, etc.), we wanted to be able to customize the relevant code for each target application environment. DataWorks management and, later, Epicor management, made business decisions to not offer Report Wizard to the general U2 community because of the perception that supporting end users in unfamiliar applications by other vendors would lead to a drain on our Tech Support resources without resulting in a significant inflow of cash.

Another design goal from the beginning of Report Wizard was the ability to inspect the dictionaries of the files that users selected and find any translates in

either Pick-style correlatives or I-type formulas. The translate expressions are evaluated to determine the ID expression. The ID expression is then used as needed to create temporary dictionary items that reference any field in the file that is the target of the translate. These temporary dictionary items only exist for the duration of the report. This gives U2 users much the same kind of capability as a 'join' in an SQL-based reporting tool but without them needing to know what field or expression in FILE_A is a key to FILE_B. This also reduces the frequency of requests for new translate dictionary items that are often the responsibility of a manager or administrator of an end-user environment.

I'll be the first to admit that I have not attempted to review all of the reporting solutions currently available. Of those that I have seen, the security management seems to be dependent on the O/S permissions or on a set of tables set up in the reporting tool rather than by integrating with the security management built in to the application tools. I have also not seen a reporting tool that will peruse the file dictionaries to discover relationships. Whether this is done periodically and stored somewhere or done on the fly at report run time, this is something that Epicor's users count on. They have the tools to create new files and add dictionary items to any files that Epicor delivers so any set of pre-defined relationships that are delivered with the application will soon become incomplete or inaccurate.

- Michael Ballard

Formerly Senior Programmer Analyst
Epicor Software, San Diego, Calif.
Currently Product Manager
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▶ 1mage Software to Install New Full Text Retrieval Feature at City of Omaha

State of Minnesota's Department of Environmental Health Group Replaces Existing System with the Linux Version of 1MAGE

1mage Software Inc. announced that the City of Omaha will be installing the 1MAGE document management solution to manage official documents in the City Clerk's office, replacing a manual system that has been in place since 1895.

Currently, the City Clerk uses hard copy for all resolutions, ordinances, and other official documents. A handwritten logbook indexing system slows the filing and file retrieval process, and the paper file storage takes up significant office space. Not only does the physical space associated with the storage of the documents cost the City of Omaha, but also the manual method of information retrieval produces

significant expenses. Any requests for information require the Clerk's office to perform manual searches through the handwritten index to retrieve documents and make copies, a very labor-intensive process.

Installation of this document imaging system will allow the City Clerk to do electronic searches for information, provide electronic copies of resolutions, ordinances and other official documents, and since the document would reside electronically on a server, provide a space savings. In the initial phase of the project, the Clerk's office will have the ability to search all the documents imaged based on an index or a general word search. The

installation includes 1SEARCH, a new add-on to the 1MAGE system, which gives users the ability to perform full text searches on selected documents. Once requested documents are identified and retrieved, the Clerk's office will be able to send (via email, fax or direct mail) an electronic copy to the requestor. The lengthy, cumbersome retrieval process will be eliminated.

"We anticipate that this solution will save time and money for the City of Omaha, as well as easing access to city documents for citizens," said David DeYoung, president and CEO of 1mage Software. "We look forward to implementing this document imaging solution for the city."

The second phase of the implementation will allow city departments to perform their own searches to find and retrieve documents. The third phase will allow public access to this same search process. *Continues on page 16*

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State of Minnesota Installs 1IMAGE Document Management Software

1image Software also announced the installation of its document imaging and management system at the Minnesota Department of Health Environmental Health Group. This group keeps records on more than 300,000 water sources throughout Minnesota, both municipal water supplies and private wells. The data maintained includes permits, inspection

reports, laboratory reports, regulatory compliance documents and reports, internal and external correspondence and memoranda, and other relevant information pertaining to the safety of Minnesota's drinking water supplies — an estimated two million separate documents.

The department's previous document management system, which had been in place for 10 years, would have required extensive upgrading — but it was no longer being supported by its third-party reseller. A key factor in the department's decision to purchase 1IMAGE was its availability for the RedHat Linux platform

► Strategy 7 Opens Beverly Hills Office

Strategy 7 Corp., a national value-added reseller for the MultiValue industry, has opened an additional office in Beverly Hills, Calif., to market IBM's Data Management portfolio. The portfolio includes Informix, DB2, U2 and Business Intelligence product lines. The new office will service new and existing Los Angeles and surrounding county area customers.

Headquartered in Carrollton, Texas, with a western regional office in Newport Beach, Calif., Strategy 7 Corp. has helped hundreds of organizations, large and small, adapt in the face of rapidly changing technology. The company said it continually researches and tests technologies that allow clients to derive increased benefits from their information and systems.

"We made a commitment to the Informix product line years ago, and continue to be one of the largest U.S. resellers," said Joseph Rodriguez II, president of Strategy 7. "The expansion into Los Angeles will allow us to provide Strategy 7's existing domestic 500,000 users with the service that they have come to expect from us over the years. We will continue to work closely with them to preserve their investment."

IBM acquired Informix in 2001, and has successfully merged the product family into the IBM Data Management portfolio of products. With over 20 product upgrades over the last year, IBM has integrated the best data management technologies available in the industry into a seamless set of solutions that includes the Informix, DB2 and Business Intelligence product lines, Strategy 7 said.

"It is our job to keep our customers up to date on the strength of their products—the standards, reliability and availability," Rodriguez explained. "Whether they're building a data warehouse or need to enhance an eCommerce infrastructure—we make it our business to provide them with time-critical information and resources, ensuring that they remain competitive. The Beverly Hills office is strategically located to service some of our long-term customers while introducing the product line to new users." ■

The new Strategy 7 office is located at 433 North Camden Dr., Beverly Hills, CA 90210.

and ease of integration into existing in-house application software. Cost was another important consideration — purchasing and installing the 1MAGE software, fax component, and scanning option, plus converting existing images and training department staff in its use, would cost only about as much as upgrading the previous system — and could be completed in days rather than months.

The installation and on-site training of Department of Health users was to be completed by the first of October, when department IT staff expected to roll out a new version of their Oracle-based internal application software. "One advantage of the 1MAGE product is its transparent integration with existing client software," DeYoung said. "We virtually disappear into our client's existing system — no new third-party applications or costly software upgrades are required. And, client staff don't have to switch back and forth between two programs to access data. It's all right there in their main business program." That's because 1MAGE has developed a suite of application programming interfaces (APIs) that work across the enterprise and are available wherever the application is used, so they don't have to be loaded on every employee's workstation.

As part of the conversion project, the 1MAGE system will "normalize" the existing database, eliminating duplicate entries, consolidating misspellings, and validating key data. When complete, the two million images will be stored on optical platters that occupy less physical space than a carton of soda.

**For more information, visit
www.1mage.com.**

Continues on page 18

Zumasys Moves to New Headquarters

Expands Facilities by 85 Percent — Opens Training Center and Porting Lab

Prompted by rapid growth over its first two years of business, Zumasys Inc. has moved into new corporate offices in Lake Forest, Calif.

Strategically located at the junction of Interstate 5 and 405, two of Southern California's primary freeways, the new 6,400 square-foot facility incorporates extensive tenant improvements, including a state-of-the-art training room that will host Zumasys' monthly technology seminars and an expanded curriculum of technology-related education. The training room will also be made available to select ISV and vendor partners looking to offer education in the Southern California region.

Zumasys' new address is 20472 Crescent Bay Drive, Suite 104, Lake Forest, CA 92630. The phone number is (949) 334-0287 and the fax number is (949) 334-0288.

Designed to showcase the latest in technology from its vendors, the facility also features a new porting lab, computer room and expanded integration lab all connected via a Cablofil overhead cable management system. Customers will be able to use the porting lab to test and benchmark applications on a variety of emerging hardware and software technologies including Citrix MetaFrame XP, ORiNOCO Wireless LANs, Sierra Wireless Internet connections, Wyse WinTerms and IBM pSeries AIX servers.

As part of the expansion, Zumasys installed the Artisoft TeleVantage software-based phone system, which converges voice and data on a standard Intel-based server platform. An intelligent, Windows-based interface provides complete call and message control from desktop PCs and thin clients. An authorized Artisoft reseller, Zumasys plans to expose customers to the benefits of Unified Messaging in a real world environment.

Zumasys is a Citrix Gold Reseller and a national provider of technology services and business computing solutions to a broad range of customers. The company offers workforce mobility solutions and "custom built" Intel, Compaq and IBM RS/6000 servers, integrated with AIX, Linux, Windows NT/2000, Citrix, SCO or UnixWare. Zumasys also has offices in Huntington Beach, Calif., and Minneapolis, Minn. ■

For more information, visit <http://www.zumasys.com>.

Continued from page 17

▶ Compass Document Management Moves Clovis & Roche Into the 21st Century

Compass Computer Solutions Inc.

announced that Clovis & Roche, a major leader in commercial debt recovery and loss prevention services, has leveraged the Compass Document Management solution to streamline its collection process. Clovis & Roche, which runs Columbia Ultimate's Collector System on the D3 MultiValue environment, has implemented Compass Computer Solutions' Compass Document Management, a high-performance document scanning and indexing software solution for MultiValue databases.

Compass Computer Solutions, a leading provider of document imaging systems and a partner of Columbia Ultimate, was a natural choice for Clovis & Roche, who had recently moved from the Boost system to Columbia Ultimate's Collector System for its application software.

According to Compass president and CEO John Walsh, "Collection agencies are among the largest group of Compass clients enjoying the benefits of electronic document management. Compass Document Management provides instant access to debtor backup documentation during the collection process. The tight interface between Compass and Columbia Ultimate also provides the added benefit of having a fully integrated, seamless solution for our joint clients."

Don Zerangue, vice president of Clovis & Roche, explained, "As a prior Boost user, we were excited to see the benefits in changing to Columbia Ultimate. Columbia Ultimate recommended Compass as a source for document

imaging. Since we are primarily a commercial agency with considerable debtor back-up, the Compass Imaging system has truly moved us into the 21st century.

"The system is fast," he continued. "The scanner operates as quickly as a copier and indexing is quick and simple. We can also block unwanted information from the image so it can be faxed [or emailed] to the debtor clear of any hand notations."

Also noting the exceptional sales and technical support received from Compass, Zerangue commented: "During the purchase process, Compass personnel worked closely with me on hardware specification. Compass support, if needed, is always quick and easy to acquire. No cumbersome incident numbers or waiting time to address your training and support needs." Overall, Zerangue summarized: "I highly recommend Compass Imaging for any agency's imaging needs."

For more information, visit www.compasscs.com, www.clovisroche.com or www.columbiaultimate.com.

▶ Technical Resource Group Signs Reseller Agreement With jBASE Forms New Strategic Alliances

Technical Resource Group (TRG) has signed to become a Value Added Reseller (VAR) of jBASE International, allowing TRG to draw on jBASE's full line of products for solutions to deliver to its clients.

TRG provides comprehensive Information Technology (IT) and business services and solutions to over 400 customers

► Two New Help Desk Technicians Join **Modular Information Systems**

Modular Information Systems, a full service information technology consulting firm, announced the hiring of Jerry Singley and John Landaker as help desk technicians based out of Modular's Monterey County office. Both Singley and Landaker are life-long residents of Monterey County and specialize in networking, help desk, and end-user support.

Prior to joining Modular, Singley worked for the past five years as a field technician for two Monterey Peninsula based computer consultants. He holds certifications in both A+ and Network+.

Landaker's past experience, also on the Monterey Peninsula, includes three years with a computer consultant and four years with a software company. At his previous companies, he worked as a field technician, help desk technician, and customer support manager. He is also A+ certified and a Hewlett Packard certified repair technician.

"Modular is very fortunate to be adding Jerry and John to our staff," said Eydie Larson, vice president of Application Development who oversees the Help Desk. "They possess exceptional experience, have the ability to solve problems creatively, and have shown the desire to provide the best in customer care."

Modular Information Systems recently expanded its Help Desk Services. Previously only available to existing clients, Modular now accepts new clients interested in opening special Help Desk accounts. Modular's Help Desk Service allows clients to call at a moment's notice to get professional help on any computer-related need. There are no charges to set up an account and no minimum requirements for the service. Calls may be submitted via phone, fax, email, or a help desk Web site.

For more information, visit www.miscorp.com.

throughout the United States and Canada. "We have seen a growing interest in jBASE, and after our own careful evaluation, we believe this technology has a very strong future," stated Kevin Marshall, president of TRG. "We are excited to be a reseller, and we already have had several of our customers inquire about the jBASE database."

Dave Bryant, president and CEO of jBASE International, said, "TRG is a well respected consulting company in the MultiValue marketplace and we are very pleased that TRG has chosen to add jBASE technologies to their product offerings."

New Alliance With Hartley & Associates

TRG has also formed an alliance with Hartley & Associates, a professional services firm that provides sales/marketing, staffing, and organization building services to growing companies. "Continuing to offer the widest scope and broadest range of services is the reason for forming an alliance with Hartley & Associates," Marshall stated. "Additionally, this strategic alliance will enhance the services available to all of TRG's customers and prospects. We look forward to a mutually beneficial long term alliance with Hartley & Associates."

Hartley & Associates has a simple yet powerful philosophy: To provide comprehensive services for small to medium and emerging companies during periods of change with a view toward long-term results and achievements. "We accomplish this through the development of client relationships based on professionalism, mutual trust and respect nurtured by honest and open communications," stated Jim Stedt, president of Hartley & Associates. "The alliance with TRG is an exciting opportunity for Hartley & Associates that will open up new markets and allows TRG experts to work together with Hartley & Associates experts for all of our customers."

"Our vast experiences as entrepreneurs allows us unique insights into the challenges organizations are facing today," added Jim Getzinger, senior vice president of Hartley & Associates. "We know how to successfully take an organization into the next lifecycle of its growth. TRG and Hartley & Associates have already successfully worked together at an organization that migrated to a new

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BY STEVE VAN ARSDALE

IMHO

You Dance With the One That Brung Ya'



The famous football coach Bum Phillips with the Houston Oilers said it first.

And it's equally true for IT projects.

Notice how everyone gripes about MultiValue marketing, but nobody

does anything about it? Well, marketing doesn't stop at the newsstand, buckey.

Good managers market their projects all the while that they are underway. So how does this apply to MultiValue? By means of the method. It's not only what we do, but the way we do it.

What this means is simple: in an MV project, it means using the database that is being used for the project, to conduct the project. In non-multi-valued projects, it means using a MultiValue database during the project, for any task or process where quick, multi-access data and/or documents are needed.

Years ago the D3 Method for projects was invented. Big disappointment. Everyone looked at me like I had two heads. They were thinking, "We got Microsoft Project; we don't need no database." One can hardly blame them; the Method looked like a long list of project tasks. It was catatonic stuff, terminally boring. I'm not sure that anyone ever even read the whole thing. Talk about bad marketing, eh? So now it's called the MultiValue method.

The MV Method was sort of a rule, or perhaps a philosophy. In a nutshell, the Method is to insert MultiValue into every little project task that required or would benefit from automation. Task lists, feature lists, data dictionaries, user requirements, calculation specifications, transformation rules, manual checklists, automated checklists, automated procedures. Anything that might be done in a word processing document or a spreadsheet. Status reports, process specifications, even references to graphics and blobs. When the master list of project tasks is also in there, then everyone can get at it, all the time, plus all the project stuff can be cross-referenced automatically. It's always proven to be worth the effort:

- ◆ If the effort cost a little more, then the project manager made up the cost with synergy.
- ◆ If the effort cost a lot more, then he rolled it into the prototype.

Everybody wins.

Done properly, everyone learns. Programmers try new techniques for themselves rather than on each other. Analysts learn how to navigate the data and the meta-data like second nature. Users and stakeholders see rapid application development in action. Non-MV technicians get a new appreciation.

Done extensively, project risk is reduced. Information about the project is better organized; information for the project is stored in a readily accessible location. Everyone begins to think in terms of how to fulfill an information objective with the tools at hand; multi-valued becomes the common denominator technology of the team, then the project, and eventually the application. The project becomes a base upon which to build towers of fashion with the "latest-n'-greatest." And then replace them, just as easily, and safely, as the "later-n'-greater" stuff comes along. =/s

There are certain tasks in every project. They may not be formal; they may not even be acknowledged, because it's not cool to be concerned with the nits and details when we're "Planning the Project."

But when these essential little tasks are not formal and not planned, they are the reason that a simple project goes two and three hundred percent beyond the estimate. A little MultiValue database can be invaluable. Here are a few samples:

- ◆ Interview the users (don't we all do this) and record and cross-ref what they say (oops?).
- ◆ Write a scope. And circulate it (oops again?). And maintain it. preferably all on-line.
- ◆ Make a list of resources that will be required; get feedback.
- ◆ Make databases of the system problems to be solved ... user features to add ... application functions to retain. Cross-reference these to the project tasks that will deliver. Make checklists and progress logs. Circulate these, too. Create automated follow-ups.
- ◆ When it's all in there, we record programming time against project tasks with a file trigger that computes the Earned Value and updates a real-time executive project sponsor monitoring report. Export it to Word and hang in the shared network. Wow.

There are dozens of good uses for MultiValue in the traditional and untraditional project methodology. But here's the all-time best one:

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ITMHO

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Construct a prototype.

No single project task can produce more benefit, answer more questions, avoid more problems, ensure more success. A surprise at the end of an IT project can cost a lot more than the project itself; think millions. Yet less than five percent of the IT projects contain a single prototype, let alone the multiple prototypes that I prefer.

Usually it's just too time-consuming and expensive. Here is where MultiValue shines. MV prototypes are fast, easy, and cost-effective. In fact, the cumulative cost savings of prototypes for just those IT projects that go bad would probably pay for all the MultiValue systems ever sold. Here's an example:

A large U.S. distributor created an interactive database of technical data on products. When it was completed, only five people could be forced to use the system; 69,995 employees couldn't use the clumsy, redundant screens. The year it went on-line, the ten-million-dollar system was abandoned and written off. Good-bye bottom line. If there had been a simple mock-up that project stakeholders and potential users could have seen, the write-off might have never happened. The cost of a simple MultiValue prototype would have been less than a thousand dollars. And a dozen people might have kept their jobs.

This example is typical, and far from the worst. So why don't we see more prototyping? Some professional project managers say it's too time-consuming, others say it distracts from the project, still others say it

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is too hard to manage. These reasons are simply not true. A good prototype does exactly the opposite on all three counts. The real reason is fear of management censure. Yet a good prototype will promote management interest and confidence. It's a matter of how the prototype is introduced.

There are several ways to insert a prototype into a project. The standard is the planned and scheduled approach to mitigate risk. "Before we do the real system, let's do a prototype thing." Not my favorite; it's usually the wrong thing, always at the wrong time. Guaranteed to be cut, as soon as the project budget is constrained ... usually about 15 minutes into the project. Or worse yet, the prototype becomes the real system. A Frankenstein patchwork of almost-code and not-quite approaches, glued together with fixes, destined to make everyone's job miserable until mercifully put down.

Here's a better method. Early in the planning process, walk-through meetings are scheduled. These show-n'-tell sessions can be budgeted not just for deliverables, but also for ideas and approaches. But instead of a couple of hours, several work-days are allocated. Slips through the planning process fairly easy, and actually adds a bit of flexibility to the schedule.

As the walk-through meeting approaches, the manager assembles an agenda. For each topic a suitable demonstration can be arranged. A multi-valued database system on a laptop is the perfect tool. A dictionary is built; data is mocked-up, and a screen or two can be cobbled together. Voila ... a prototype. Some thoughts along the way:

Building the dictionary: When possible, it's usually a good idea to use a copy of the production dictionary. This answers some questions, and identifies new ones. The dictionary may actually be part of the pro-

totype; a lot of background processing and data progression can be accomplished with file triggers. In any case, save the dictionary, including all the special correlatives and conversions. Good thinking is always useful later during testing, and some "MacGyver"-type ideas end up in production.

Mock-up data: It's usually a good idea to write a program to generate a little realistic data in sufficient quantities. (Call for details.) If there's any question about what realistic test data looks like, then that's all the more reason to learn to create it. When several files, or referential files, are required, it's a good idea again to copy the production files. In any case, program and system testers will be grateful later when you hand them the test data generators.

Screens: time to scrimp. Don't bother with the graphical user interface. Label the fields, display values, use the tab key for navigation. Gets the idea across. If the walkthrough is about the pretty screens, then there's probably no need for the walkthrough. If, on the other hand, there are real issues, then the mock-up enhances the show.

"Good morning folks. Thanks for joining us. We want to discuss the framework, and how the department will use it. As we all know, the information comes from the customer and gets entered into the system here. And here, and here."

"Whoa," says the supervisor:

"We usually get this first, then that. And this one right here has to come from upstairs, you dope."



Continues on page 24



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IMHO

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"Ah, er, yes. OK, then, any other questions?"

General laughter.

The big cheeze says, "Seriously, this is good progress."



"But why don't we move that calc down here? Then do the input all at once. You can expand the project and just have the system produce that data automatically."

"Oh, ah, that was just what we had in mind."

General moans.

The very act of assembling the MV prototype clarifies a lot of the issues. Then the screens provide a medium for communication. The data involved is a basis for questioning the data flow. The presence of the mock-up demonstrates progress. The prototype elicits new thoughts, new understanding. The MV mock-up replaces a lot of stale presentation slides and handouts that usually bore the audience and defeat the whole purpose of the walkthrough. The next walkthrough can usually build on the components. Best of all, at the end, the prototype becomes infrastructure for the

system test environment, or at least a mock-up of how the deliverable systems are supposed to work. So the walk-through prototype adds real value.

But my personal favorite MV project tool is the "whitespace" renegade. In February of 2001, Mark Maletz and Nitin Nohria published research on these innovative projects. "Whitespace" initiatives are those intrapreneurial experiments undertaken in the ill-defined spaces between organizations and sanctioned projects. Those are the marginally-authorized efforts where resources are scrounged,

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All organizations do projects. "Temporary endeavors to implement a unique product or service." Some are large, some are small. But if the product is worth the effort then the project is worth some innovative management. And that often means MultiValue.

rules are vague, and strategy is molten ... and "where entrepreneurial activity helps reinvent and renew an organization." I sometimes call them "Gravagnos." One cherished characteristic of my **PathfinderMV™** rapid application deployment methodology is just such concurrent white space prototypes. Here is how they work:

Early in the project, high-risk technologies and special milestone deliverables are identified. In the **PathfinderMV** methodology, whitespace prototypes are spun off the main project to test out new approaches and new software before these risks can derail the project's critical path. Innovative project team members are asked to build mock-ups, assemble prototypes, and report back, directly to the senior project lead. Good ideas are folded into the project with the experience of the innovator leading the way. Everybody learns, and everybody wins.

BTW: 25 years ago, the introduction of Microdata REALITY serial number "0012" into a Fortune 100 insurance company was just such a whitespace project. Seems like yesterday. Big company, giant project, huge budget ... solved by a tiny little computer running an unknown database, in the heart of a multi-billion-dollar IBM site.

Who woodda thunk it, Bum?

All organizations do projects. "Temporary endeavors to implement a unique product or service." Some are large, some are small. But if the product is worth the effort then the project is worth some innovative management. And that often means MultiValue. IMHO. =/srv

STEVE VANARSDALE is a project manager and MV analyst for hire. He writes and consults nationwide from his offices near Chicago. As he says, "No project too big, no place too far. And no check too small." (steve@vanarsdale.com)



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mvReport Card

To maintain a competitive advantage in today's fast paced climate, a decision-maker can no longer afford to sit back and wait for the IT staff to modify or create reports.

The Word on

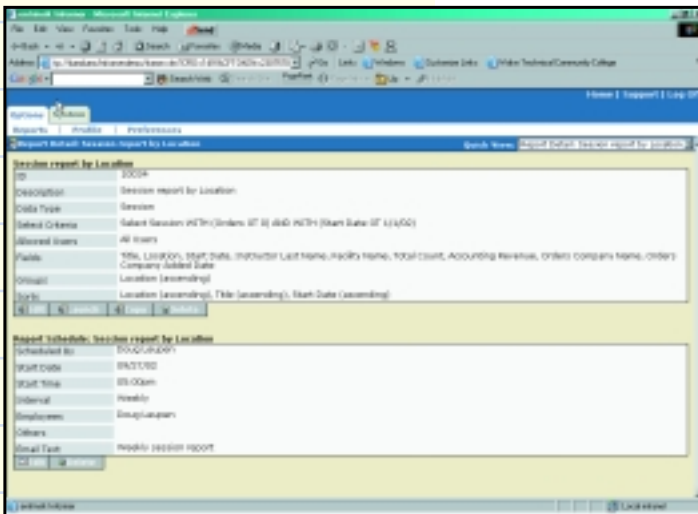
Informer



The word is out on Informer, a powerful Web-based reporting solution from Raleigh, N.C.-based Entrinsik Inc. Informer generated quite a buzz at a recent International Spectrum regional conference and exhibition as a tool that provides quick, secure and easy access to tremendous amounts of corporate data from anywhere at any time via a Web browser. Informer works with IBM's U2 family of relational database management systems.

The demand for corporate information is on the rise. To maintain a competitive advantage in today's fast paced climate, a decision-maker can no

longer afford to sit back and wait for the IT staff to modify or create reports, the company said. Informer's Web access allows not only intra-company personnel to access pertinent data, but also remote workers and business associates, while still providing optimum security. According to Entrinsik, Informer makes possible a unified business intelligence environment which provides consistent, real-time information to everyone who impacts key business processes.



Among its many capabilities are:

- ◆ Direct access to native U2 files via UniObjects. No need to establish an ODBC link.
- ◆ User-friendly access to data using a clean set of reporting dictionaries and an intuitive user-interface.
- ◆ Report output can be displayed, downloaded to PDF or Excel, or emailed.
- ◆ Reports can be scheduled to run once, daily, weekly, or monthly, and delivered via email at a given date and time
- ◆ Complete data security using role-based access control to manage available functions and data elements.
- ◆ For technical users, TCL statements can be entered as selection criteria for a report, and can be converted to Informer-style selection criteria, providing GET-LIST capabilities

In late August, Entrinsik announced the general availability of Release 1.1 of Informer. "We are excited about Informer and the power it gives our customers to access their data," said Doug Leupen, president and CEO of Entrinsik. "Informer has become extremely popular with our customers as it has made the data managed by our vertical software product, SEMtek, more valuable. We believe that same power will be greatly appreciated by other U2 application software users."

Originally introduced to the MultiValue community at large in March 2002, Informer quickly evolved from a tool developed for Entrinsik's SEMtek customers to a well-rounded product with wide appeal to all U2 users. "For about 17 years we have developed and marketed a client-server/U2 based product into a vertical market," Leupen commented. "The product, SEMtek, is an enterprise system for many of the largest event producers in

the world. About three years ago, we developed a new product that adapted SEMtek's business logic into a Web application.

"When we showed this new Web-based software package to our existing SEMtek customers, many of them asked if we could package the reporting functions as a separate package. We did and called the product Informer; it has become very popular with our customers. In September, with nine successful months of selling and supporting Informer within our own vertical market, we began marketing it as a horizontal product to all U2 database customers. The response has been tremendous. Apparently we found a need that needed to be filled."

One of the needs that Entrinsik tapped into was reducing demands on IT staff

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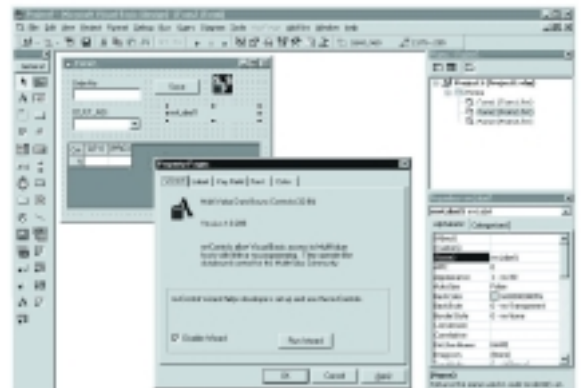
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mvReport Card

Under the Hood of a Super-Charged Reporting Tool

Meta File Maintenance

The engine of the Informer product is the Meta File. The technical design and presentation elegance results in descriptions of data that are concise and meaningful to the end user community. With a standard U2 dictionary listing, field names are often repetitive, extraneous, and non-descriptive.

Informer provides:

- ◆ The ability to create the Meta File definitions from your existing data dictionaries
- ◆ Meaningful names that will allow users to create reports without having to rely on IT personnel to decipher the definitions
- ◆ Easy maintenance of descriptions and lengths for display purposes
- ◆ Links to associated fields, giving the capability to drill down to associated data when choosing display or select fields on reports

Report Definition

Informer offers flexibility in the definition phase of the reports. Users are able to easily understand the industry-standard terminology and presentation. Almost any user who is familiar with their application data can produce meaningful reports with little or no training required.

- ◆ Data selection is flexible, virtually any field on a file is available for selection. Multiple selections can be made with a determined variable or a “?” can be entered for those variables which are prompted for and entered at run time.
- ◆ To select fields to print, simply click on the desired field and move it to the right. All fields for a file are displayed. In addition, by clicking on a joined

table (indicated by a '+'), all fields in that file are available, and can include multiple levels.

- ◆ Any field being displayed is available for sorting and grouping. There are four levels of sorting and grouping.
- ◆ For technical users, TCL statements can be entered directly in the selection criteria. The user can direct Informer to convert the TCL statement into an Informer format for ease of use.

Public and Private Reports and Roles

Informer has been designed to accommodate organizations regardless of size. Often, the size of an organization dictates the levels of security within the organization. Informer relies on its role-based design to ensure total security down to the field level. In addition, both public and private reports can be created and saved.

- ◆ Private reports are available only to the employees specified on the report and only if they have the correct security established with their role.
- ◆ Roles can be established for individuals or groups of individuals
- ◆ “Lock out” role members for any Informer function
- ◆ User ID and passwords

Running Informer Reports

Reports can easily be run via a Web browser. All of the current report definitions are used in the generation of the report.

- ◆ Users are prompted for run time selection variables
- ◆ Easy selection of entries from associated code files

- ◆ Drop down calendar for date entry selection
- ◆ Groupings can be expanded and contracted individually or with a single click
- ◆ Reports can be instantly dropped into MS Excel, Acrobat or email
- ◆ Clicking the “View” button allows for run time custom views of the data

Report Scheduling

There are always key indicator reports that need to be run on a continuing basis. These types of reports are typically shared with people at the same level of management.

- ◆ Choose the start date, using the drop down calendar, to begin the scheduled reports
- ◆ Reports can be run at a specific time
- ◆ Reports can be run one time, daily, weekly or monthly
- ◆ Easy selection of internal employees
- ◆ Reports can be sent to an external email list
- ◆ Text can be added to the email and easily maintained
- ◆ From the emailed report, users can simply click on the report if they want to change the view, drop into Excel or Acrobat, or email to another person

System Requirements

Entrinsik Informer requires ColdFusion to run. The company has chosen Macromedia's ColdFusion as its scripting language. ColdFusion MX supports all open industry standards and easily integrates with Entrinsik's existing technology infrastructure.

Source: Entrinsik Inc.

The Word on Informer

Continued from page 27

by giving end users the ability to query data and create their own reports as needed. As organizational productivity is improved and IT expenses reduced, a positive ROI is achieved from corporate information investments.

According to Leupen, Informer's success has been based on a number of features. "First of all, it is Web-based, allowing access to valuable data from any PC with a Web browser connected to the Internet or Intranet."

In addition to that, Leupen ticks off a list of many other capabilities that have made Informer a standout product. Among them is fast data query that accesses the active U2 file system using the Uni-Objects low-level API. "This provides data selects and retrievals that approach the speed of TCL statements," he stated.

"The incorporation of a Meta File to facilitate the easy development of a special reporting set of dictionaries is another key product feature," Leupen said. "Just having a clean set of dictionaries makes the U2 data immediately more valuable to end users."

Informer's friendly and intuitive interface allows the data to be retrieved by any manager or end user who is familiar with Microsoft Outlook. A dynamic file-join process allows users to pull information from all related files without involving the IT staff to build special dictionaries. Another benefit is Informer's Web report output, with downloadable options to Adobe (PDF) or Excel. Users also appreciate a special report viewer that allows individual users to modify their view of standard reports. Views can be modified in terms of data sorts, incorporated fields, and data grouping. A comprehensive security system controls user access by functions, actions and file properties (data elements).

As Informer's impressive showing proves, Leupen concluded, "No other reporting product for the U2 databases offers this combination of important features." is

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Designing Wireless

PDA Applications

BY NATHAN RECTOR

In the last year, palm computing has taken off. The hardware and OS vendors have progressively increased the functionality of their systems to include expansion slots and are now including wireless networking as well.

Wireless networking is not new to the MultiValue marketplace, but it was a costly and specialized solution mainly found in warehouses and retail stores. With the introductions of WiFi (802.11) and the increase in speed and availability of cellular data networks (GSM and CDPD), the average office worker is looking for wireless connectivity as well.

As developers, we are use to writing applications that reside on a main server. This allows instant updates to the program and fast real-time access to data. When developing wireless applications for PDAs, we have to learn new rules and considerations for programming:

- ◆ Network type
- ◆ Speed of data transfer
- ◆ Processing of received data.
- ◆ Security

Network Type

There are two types of networks that you are likely to program for: WiFi and cellular. You may run into Bluetooth networks, but for the most part they follow the same rules as WiFi networks.

Both network structures have similar issues to deal with when it comes to loss of network service. Wireless networks have limited range, which means your users are going to step outside that range sometime. Cellular networks are more prone to this than WiFi and much harder to fix. To fix dead spots in WiFi networks, all you need to do is add another access point and you are up and running again.

Cellular networks are picky about when and where they will give you data. For the most part, major metro areas will have cellular network access just about everywhere but in basements.

Since you are going to lose your connection sometime, you need to decide what you are going to do about it. There are three design philosophies you must choose from:

- ◆ All data is sent in real time. If the network goes down or is unavailable, then they can't use the applications. This works well in a controlled environment like warehouses and retail stores using WiFi, since it is easy to repair the problem.
- ◆ When the network is not available, data is stored to be sent later. This is the best approach when working with cellular networks. If the network is alive, then the data is sent right then. If the network is not available, then the data is stored until the

network is available again. This is a much harder program to design than the first one since you have to consider temporary storage and the data being sent to the server cannot be time critical.

- ◆ Batch updating: Using e-mail or other batch forms of data transmission to send all changes to the server when done with the program. Again this requires some temporary storage and the data can't be time critical, but you won't be able to retrieve information from the remote server like you would with the first two.

Network Speed

The next thing to consider is network speed. This comes in two parts. Network latency and bandwidth. If you are using WiFi networks, then for the most part you don't need to worry about this.

Continues on page 32

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PDA Applications

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If you are using cellular networks, then this is a major problem. Anyone who has used the Internet knows that it is slow at times. Add onto that the bandwidth limitations of cellular networks and you can have wait times into the 500ms or more range. Now this doesn't look like a lot of time, but this is a half second. Add two or more requests back to back and we get into one second and more. One thing we have learned over the years is that one second is a long time to someone who is used to working with a 1.2Mhz PC.

When dealing with bandwidth limitations, we are also looking at how quickly large amounts of data are transmitted. A lot of people talk about using XML and SOAP as the best network data transmission method, but both of these methods take large amounts of data to transmit limited information.

For example, suppose you want to send the string "Hello World," which is 11 bytes of information. Transmitting this information using XML can become 15 or more bytes minimum, and if you are using SOAP, then it's going to become 25 to 50 bytes minimum. Granted this example uses a small amount of data, but when you get into whole record sets, you may find your data bloated by 30 percent to 50 percent using these methods.

If you are were transmitting data to a PC that wouldn't be a problem because the PC has the processing speed to handle it. A PDA does not.

Processing Speed

PDA's are not PCs. Anyone who has tried to write a program for a PDA using the same rules and considerations as a PC program soon finds this out. From the processing of the database information to the processing of complex sorting and screen validation, the PDA just can't do it like a PC.

PDA's are getting faster, but they will always be a limited platform for processing due to battery life, screen size, and weight.

When receiving the data from the wireless networks, it has to be processed. This will add time onto the already possibly lengthy data transmission. Where we don't want a large amount of data being sent because of network bandwidth and speeds, we have the same issues with the amount of data being processed. 11 bytes of information will take less time than 25 bytes.

Security

Any information transmitted over wireless links is subject to interception. Some of that information could be sensitive, such as credit card numbers and other personal information. The solution needed really depends on the level of sensitivity. To provide a complete end-to-end security solution, you must implement it on both ends, the PDA and the server.

One solution to consider when handling highly sensitive information is encryption: the sender encrypts the data before transmitting it over the wireless link; the authorized receiver receives the encrypted data and decrypts it using a key provided.

Mobile devices are already available, and all the necessary components and infrastructure are in place to begin developing and deploying wireless applications. This article discussed the important issues of the wireless environment that must be considered when developing applications for mobile wireless devices with limited resources. It also offered hints and guidelines for dealing with the constraints imposed by the wireless environment. **is**

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Just thought I would let you know about a project I have been working on that has used the (ViaODBC) software. Payroll Budgeting info to an EXCEL spreadsheet. It works really great. By using the software, I have avoided writing a huge program to generate the data."

David Calvert, IT dir, Oklahoma City Housing Authority

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inSecurity



Seems like the Internet and the Web have penetrated most companies. Procurement, research, travel and other administrative processes have been introduced. Many manufacturers and services depend on the Internet to actually make or do whatever the business is all about. Even the telephones, power supply, and banking of most companies are wired for data.

What happens when any or all of those systems are hacked?

The problem with grappling with the enormity of system security is that it just seems like there are too many things to consider. Every day it appears as though some bored geek in the middle of nowhere has figured out another way to decimate your company's productivity, all for the sake of a good laugh and an ego tickle.

In practical terms, there are pretty much just three main areas for you to consider when it comes to security.

- ◆ Network and or server configuration errors
- ◆ Operating system or software flaws
- ◆ Human error

So how do you get to an improved security position? First, recognize that you're doing

the right thing by looking into this area. Most people are reactive to security risks. They implement changes only if they've been hacked. It's akin to adding barbed wire and iron bars on the window when a burglar breaks in, but not locking the door when it was most convenient and reasonable.

Well, to map out how to get to any destination, you need to know where you're starting point is. So, the most important activity is to benchmark where you are today. This isn't very difficult to do. We're just talking about two activities.

- ◆ Identify your assets (computing, data, reports)
- ◆ Map out how the assets interconnect

You should remember that assets aren't just the hardware that can be compromised. The hardware exists for the data,

the reports, the information that you need to actually have a business in the first place. These are the assets that ultimately you are seeking to protect.

Protecting a stand-alone server with meaningless data might be necessary, but it's not as vital an activity as your primary areas of need.

Be sure to include things like email, payroll, credit card, source code, marketing and sales, financial, customer and other explosively sensitive materials in this listing. A proper asset benchmark should be business oriented as well as technical.

You can do this benchmarking with your current staff. Further activities might best be served by your use of an outside auditor. Most companies feel more comfortable doing it themselves. Certainly, it's less expensive in the short-term. However, as

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Webonomics 101

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with any auditing function, a frank analysis is often times better conducted by external staff. Here are just a few things that should be covered.

- ◆ What are the current security policies?
- ◆ What security is on your network infrastructure?
- ◆ What security do you have for your servers?
- ◆ How is your application security implemented?
- ◆ What is management commitment or understanding regarding security?
- ◆ Does the staff understand the various risks of their activities?

Once you've evaluated your current situation, you can then proceed to examining the manners in which your security can be compromised. Most people sensibly focus on securing themselves from external attacks. The perimeter defense is easiest and most understandable. It's also the least intrusive.

In terms of warfare, it's the reason the United States has felt remarkably secure from external invasion for so long; this country is for the most part rather distant from its enemies.

But as last year's traumas in New York have shown, once you penetrate a perimeter, you can reveal many internal areas where security is distressingly weak.

The network security methods you employ might also suffer from such limitations. The perimeter defense can fail if:

- ◆ The perimeter fails
- ◆ You are attacked by an internal agent

Actually, both of these issues can be the result of internal staff. Many employees have inadvertently compromised the perimeter by downloading infected files,

sending passwords over unsecured communications, or even leaving their Palm Pilot with password details alone in a bar. You might not think that last example would be that threatening. Think again. Have you ever been at a conference where you noticed a competitor studying your marketing materials? If so, then you already understand the abundant risks of just leaving sensitive information on a table top.

So what happens if your perimeter fails and you lack internal controls?

Your open system might as well not have any security at that point to a seasoned hacker, or worse cracker. (Network security folks tend to distinguish hackers from malicious crackers.) Here are a few things that have happened to many companies.

- ◆ An intruder gains access and does nothing
- ◆ The intruder gains access and reads your data
- ◆ The intruder goes further and corrupts or alters data
- ◆ The intruder controls the data and affects user access
- ◆ An intruder does not gain access but instead spams from your site
- ◆ The intruder causes your network or server to fail
- ◆ The intruder causes other networks or servers to fail from your system

Although the effects of these activities are mostly internal to your organization, you can see that the effects on others can gravely limit your ability to conduct business. If email operators notice that you are a spam spawning ground, your email may be strictly limited. If your network was used to attack another company or the Internet in general, you might need to call your insurers or your lawyers on your culpability.

The comparison to burglars is quite reasonable in these discussions. You might

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not have intentionally allowed a malicious intruder onto your facility, but if that burglar intentionally or unintentionally harms another individual or company using your resources, then you have a headache on your hands.

How do these folks do it? Let's imagine what a burglar typically does. The smartest ones do a stakeout and "case da joint" as they say in the movies. How smart does that person have to be?

Not very.

There are numerous examples of people giving away access. For example, the intruder calls the help desk, says that they're new to the company and need a new account and password. They are given one. They might call back and speak with another help desk person, asking how to access the system while working from home using their existing login information. The security is compromised a second time. Who needs technical hacking expertise if your own staff is willing to give access away?

In the next issue, we'll look at some of the more technical ways these folks examine your system. In the meantime, you might want to think of ways your staff can be misled into revealing passwords or creating accounts. As is often the case, training can be the easiest way to get what you want. is

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Archiving Files *and Items*

Allow me to stand on my soapbox and comment about a programming practice that is disturbing to me.

We programmers either add new programs or change existing programs. New programs are easy, just add them to the existing menus and processes.

Changing existing programs is very different because you have to consider two concepts in order to cover your bases. The first is to retain the prior version in case you need to undo your changes. The second is to maintain the integrity of the possibly many places that the program was originally referenced. Here's where the trouble comes from.

In my travels I've seen quite a variety of different archiving methods and program renaming conventions. Many are flawed and one stands out and is worth mentioning.

If your application has several references to "RUN BP PRINT-ORDERS" and you need to make changes to that program, the best advice is to have the program retain its original and current name and just edit in the new changes. This would allow the multiple references to realize the changes.

Prior to making the changes to the program you would want to archive the existing version. I've seen many expressions for this such as:

```
PRINT-ORDERS.OLD
PRINT-ORDERS.OLD.2
PRINT-ORDERS.BACKUP
PRINT-ORDERS.BU
PRINT-ORDERS.HOLD and
PRINT-ORDERS.0418 (April 18)
```

All of which seem to serve the immediate purpose but fail in the long run. Next month, when you need to make another change to PRINT-ORDERS, what name would you archive the present version to? The worded methods are already taken and if you use them again, you will only have one level of backup. The 0418 method could become 0520 (June 20) but in a few years, these suffixes are useless.

Perhaps the most useful archive method is to use today's complete date as the suffix. Thus PRINT-ORDERS_020418 and PRINT-ORDERS_020520 could happily co-exist in the same file and you would have a history of your program changes in case you wish to see when any changes were made.

By retaining the generic program's name, you won't have the burden of finding all the references to that program and changing them. This way, the other processes will gain the new improvements immediately. Also, using the underscore character instead of a hyphen or period would cause archived programs to stand out for easy SSELECTING or otherwise excluding.

One method that is flawed is changing the run-time name of the program to

reflect its evolution. This typically falls under the category of "version control."

If you have a highly disciplined system with policies regarding 'releases' and upgrades, then you have already created your own version control. If you are an end-user programmer and the system evolves in sections instead of the entire application, then you run the risk of losing track of which versions are correct.

If you have the discipline you can have PRINT-ORDERS.V1, PRINT-ORDERS.V2 etc and hopefully the highest version number is the real run-time program. But if the PRINT-INVOICES program evolves slower than the PRINT-ORDERS program, then you would have both of their current version names as PRINT-ORDERS.V6 and PRINT-INVOICES.V3. Having to remember the version suffix would become quite a bother.

Another renaming convention that I dislike is PRINT-ORDERS.NEW which usually ends up becoming PRINT-ORDERS.NEW.1, etc., when those versions get changed. Again, the program names get hard to remember and often the mixed punctuation gets in the way.

Many legacy systems have had a parade of programmers working on them, each with a different archiving method. When I see PRINT-ORDERS.OLD, I don't know when the changes were made. Oftentimes I have to visit old programs to see when changes are made and the .OLD is useless.

I've found that keeping the original program's name the same will insure that

any deviations to it are not on-line. If you need a version of PRINT-ORDERS for one location and a different version for another, then try to solve the difference within the same program instead of copying the original and then making slight changes to the new copy for the other location. Chances are good that in a short time you will have to make a change that is required on both copies and that becomes additional maintenance work. Most differences can be solved within the same program using parameters.

In conclusion, archiving the prior version with today's date as the suffix will provide a useful history of changes as well as the assurance that none of them are on-line. Keeping the original program's name will insure that the multiple references will retain their integrity.

Finally, you could write a simple program that could help with archiving your programs. I call mine DCOPY and it performs two functions. First, it copies the item to a dated version of itself and sec-

ond, it would offer to edit that very same original item. This is typically the next step after you archive the original. You could even add a sequential suffix if you DCOPY the same original more than once in the same day.

Thus DCOPY BP PRINT-ORDERS would perform the following two functions:

```
COPY BP PRINT-ORDERS
TO:PRINT-ORDERS_020418
and
EDIT BP PRINT-ORDERS
```

Given the gratuitous length of some program names, DCOPY certainly will save some keystrokes.

Finally, if you type SORT BP = "PRINT-ORDERS]" you could view all the historical changes in date order and decide which one to visit.

Another use of this date suffix is if you are making a mass edit of a data file. You

could create an archive file called CUSTOMER_051402 and copy the items you are about to change onto it. You could edit a consistent item stored in the dictionary of this temporary file that you can record the reason this file exists. Later, when reviewing dated files you can decide if this archive file can be deleted.

With today's huge capacity MV systems, having these archive files isn't too much of a burden on both disc space and tape space. If you're running on a native system, you could DX them for the sake of the file-save. is

MARK JOHNSON is a 23+ year veteran of the MV database and has worked on a variety of implementations. He specializes in maintaining and enhancing legacy systems and is available for contract, short and long term programming projects in the New Jersey, New York and Eastern Pennsylvania areas. He can be reached at majprogramming@comcast.net

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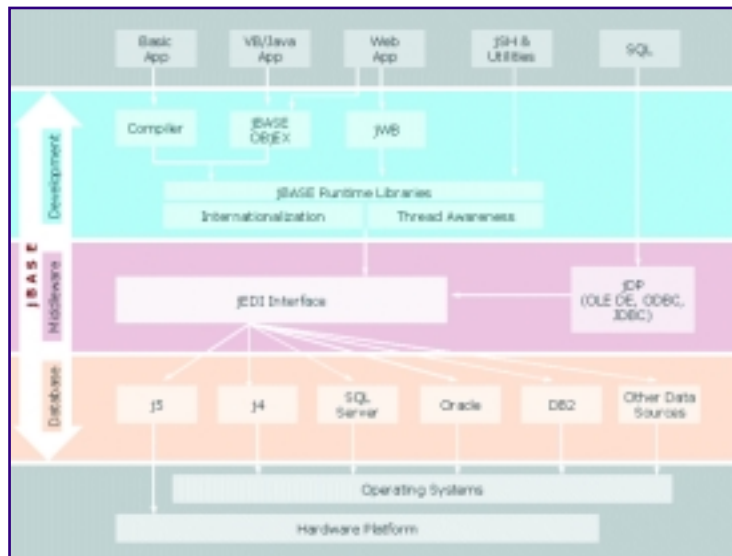
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jBASE Software Changes Hands *Becomes* jBASE International

jBASE Software Bought by Mpower1

As the old saying goes: the only thing that is constant is change. In the MultiValue industry it's all too familiar as yet another acquisition has taken place. The latest news is that jBASE Software, a pillar of the MultiValue community since its founding in 1989, has been purchased by Mpower1. But this time, from the outset, the news bodes well—for the acquired company as well as MultiValue observers. As TEMENOS, jBASE Software's parent company since 1999, refocuses its attention on its core business, jBASE International plans to redouble its efforts to increase the scope of the jBASE database management system worldwide. As jBASE, one of the more high-profile providers of a MultiValue DBMS, joins forces with a new partner, Mpower1, the MultiValue community asks what it can expect from this newest acquisition?



The innerworkings of the jBASE DBMS



Dave Bryant, president and CEO, leads a new venture as jBASE Software—no longer a part of TEMENOS—becomes jBASE International.

In a move generally viewed as positive by the MultiValue industry, Mpower1, a U.K.-based “business empowerment” company, has bought the jBASE Software business from TEMENOS, which had acquired jBASE in 1999. The financial terms of the deal were not disclosed. The new company will now be known as jBASE International.

As a result of the acquisition, there have been changes in jBASE personnel in the U.K. The U.K.-based jBASE staff has

been reduced to five from approximately 15 people. The U.K. organization's development team remains intact. In the U.S., jBASE's sales, pre-sales support, technical support and marketing support remain the same.

On TEMENOS' part, the reason for the sale is simple: in consideration of current economic conditions, it wants to get back to its main business — marketing banking software, said Dave Bryant, who retains the positions of president and CEO with jBASE International which he also held at jBASE Software. “Marketing a database is not TEMENOS' core business,” Bryant commented. “TEMENOS still uses jBASE as its database and will continue with jBASE as its database of choice.”

There were several organizations bidding for jBASE, Bryant revealed, but Mpower1 emerged as the winner, for several rea-

nds, International power1

sons. "The principals of Mpower1 have had experience with marketing jBASE products in Europe prior to this," he said. "They have set up a couple of distributorships in Italy and Russia."

Mpower1's global presence will prove beneficial for jBASE as well as the MultiValue community as a whole. "Because of Mpower1's contacts throughout the world, we expect to see significant growth in areas that up until now have not been known as centers for MultiValue databases," Bryant commented.

Another positive stemming from the acquisition is that it will allow "us to concentrate on our own market," according to Bryant. Post-acquisition, he said jBASE's immediate goal is to continue the momentum it's gained over the last few years. "We aim to maintain strong growth and find strong VARs in the U.S. and the rest of the world," he said.

Undoubtedly Mpower1's financial backing will help jBASE intensify its quest for more VARs. "Mpower1 has significant funds available for investing in jBASE," Bryant stated. "We expect that to be used to increase market share and to pursue new business development."

Throughout this transitional period, jBASE stresses that its partners are con-

tinuing to develop new applications that incorporate the latest technologies. "Our partners are developing brand-new applications that take advantage of the Web and other new developments," said Sharon Cunningham, jBASE's director of Marketing. Sharing that the company has a "real good sense of the future," she added: "We are in it for the long haul."

"We are excited about the potential for this deal, and the ability to grow both jBASE and the MultiValue market," Bryant said. Many in the MultiValue community feel reassured by the fact that Bryant—who has long had ties to the MultiValue marketplace—will continue to lead jBASE through this latest transition. His involvement in the industry dates back to VMark Software, and before that, Prime Computer (though not with the INFORMATION product).

He expressed that it is a "high-level of respect for the database architecture and its ability to bring power and performance to application development around the world" that makes him a staunch believer in the MultiValue way of doing things. "jBASE is keen on the respect we have for partners and MultiValue," he said. "We work with our partners to prove to the mainstream that we are capable of competing with the best in the world." IS

jBASE the Product

jBASE is the flagship product of jBASE International's suite of database management products and development tools. jBASE is a multidimensional database, a development environment including a development language, and a middleware component allowing other mainstream and standards-based products to communicate with the jBASE products.

The unique jEDI middleware enables access to other databases such as Oracle, DB2 and SQL Server. Microsoft Windows, all major UNIX platforms including Linux, and IBM's e-Servers are supported.

jBASE is traditionally used as the core technology platform for transaction processing applications in many industries, including the financial, local government, distribution and automotive sectors.

jBASE is also ideally suited to e-commerce with its small, powerful and efficient database engine that offers connectivity to all major Web-based development tools, using interfaces to technologies such as Java and Microsoft's COM.

jBASE products are deployed by more than 4,000 businesses and are used by over 150,000 people worldwide.

Source: jBASE International

Classic Solutions Successfully Implements New cXML-Based eCommerce Capabilities

Classic Solutions, based in Irvine, Calif., has successfully completed the first live installation of its new cXML-based eCommerce integration capabilities.

Classic Solutions' customer is a Rancho Santa Margarita, Calif.-based company which has marketed and distributed its quality packaging products nationwide to retail, industrial and manufacturing accounts since 1988 using five distribution facilities located across the United States. The company has been benefiting from the high level of business efficiency made possible by its Classic Solutions' Distribution and Accounting system since 1994 and has experienced solid growth with little, if any, increase in IT or staff costs. The Classic Solutions Distribution and Accounting system (one of a related family of products for manufacturers, distributors and importers) has used several of the Multi-Value databases available over the years and leveraged their associated languages for encoding business rules.

The Challenge

The Home Depot-one of the country's largest home improvement and D.I.Y. superstores-is moving aggressively to conduct all of its

ordering of non-store products (all those products used in the operation of their business, rather than those re-sold to the public) using eCommerce. This will replace a plethora of expensive inaccurate and time-consuming manual methods such as printed catalogs, faxes and telephone calls. It mandated that all its suppliers provide online catalogs and full order processing using the industry-leading Ariba Commerce Services Network framework. Failure to fully participate in this rapid evolution would result in Home Depot replacing this supplier by one whose business operations and methods totally supported the integration with Ariba CSN.

The Deadline

Businesses' needs change seemingly overnight in today's rapid Internet-fueled business environment, yet software development project time scales have proven resistant to compression without significantly sacrificing quality. Although the requirements had been evident for months, the Classic Solutions team was only approached less than a month prior to the Home Depot "live" date and had to respond with rapid, yet robust software development to ensure Right-This-Time quality and On-Time deployment.

The Requirement

The supplier needed to be able to accept orders for any goods in its online catalog (hosted on the Ariba CSN and placed by

authorized Home Depot stores using the 'Ariba Buyer' facilities) 24 hours a day, 7 days a week. These orders were to be transmitted over the Internet using HTTP in a cXML representation according to specifications (DTD's) published by cXML.org. (cXML is a specific XML vocabulary offering a streamlined protocol intended for consistent communication of business documents between procurement applications, e-commerce hubs and suppliers.)

Orders had to be fully validated using the existing internal database and business rules then acknowledged or rejected with appropriate supporting information using cXML messaging back to Ariba CSN. After further automated order processing (stock checking, production of picking lists, back ordering when insufficient product, etc.) and following shipment preparation, Advance Shipment Notices (ASNs) were to be produced in cXML and transmitted back to Ariba.

Further integration with the existing in-house Classic Solutions' system would be needed to provide the capability for manual intervention in the normally fully automated process (for exceptional cases only) by allowing manually initiated creation and transmission of cXML order rejection and acceptance notices as well as shipping information. There was to be little, if any, additional knowledge or training required for existing staff.

The Success

The entire Ariba CSN interface and integration was designed, specified, developed, tested, documented and delivered

with cXML documents flowing between Ariba CSN and the Home Depot's suppliers' existing in-house Classic Solutions system by the deadline set by the Home Depot. Since then, the order volume has increased substantially as more and more Home Depot stores come online-without additional staff being necessary. Under normal fully automated operation there is nothing new for the existing staff to do, or know, with regards to the Classic Solutions system they are familiar with. Warehouse and shipping staff, as well as office and order processing employees, did not have to alter their previous operations business processes.

The Technology

The middleware selected to operate between the Microsoft Internet Information Server (IIS) Web interface and the mv*BASE MultiValue database was Web-Wizard from Via Systems Inc. Classic Solutions wrote a significant amount of software to receive, parse, validate, process, create and send cXML business documents. Full audit, error reporting and configurable diagnostic tracing was built in from the beginning.

The Future

For this Home Depot supplier, and Classic Solutions' customer, the future is bright. Not only were they able to retain the Home Depot (its No. 1 customer), but it will be able to increase business volume with almost no further IT or employee costs over the next few years. Future integration with invoicing and electronic payments systems is also possible using the same Classic Solutions basic technology. Also, through its participation in the Ariba CSN (www.ariba.com) there is the possibility of winning new business from other companies using the Ariba Buyer system.

Classic Solutions is now able to offer similar XML-based interoperation and integration with eCommerce hubs and exchanges to its existing and future customer base and will continue to make available appropriate information technology advances as they arise. **is**

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|---|---|
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| <input type="checkbox"/> President/GM/CEO | <input type="checkbox"/> Programmer/Analyst |
| <input type="checkbox"/> MIS/DP Manager | <input type="checkbox"/> Purchasing |
| <input type="checkbox"/> Controller/Financial | <input type="checkbox"/> Consultant |
| <input type="checkbox"/> VP/Department Head | <input type="checkbox"/> Other _____ |

2. Is your company a (check one):

- | | | |
|---|---|---|
| <input type="checkbox"/> Computer System Supplier | <input type="checkbox"/> Dealer/OEM/VAR | <input type="checkbox"/> Software House |
| <input type="checkbox"/> Consultant | <input type="checkbox"/> End User | <input type="checkbox"/> Other _____ |

3. What MultiValue Databases does your company use? (check all that apply)

- | | | | |
|--------------------------------|--|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> D3 | <input type="checkbox"/> Native MultiValue | <input type="checkbox"/> Reality | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> jBASE | <input type="checkbox"/> uniData | <input type="checkbox"/> UniVerse | <input type="checkbox"/> uniVision |

5. What major business/industry most clearly describes your company?

- | | | | |
|--|------------------------------------|---|---------------------------------|
| <input type="checkbox"/> Accounting | <input type="checkbox"/> Medical | <input type="checkbox"/> Direct Marketing | <input type="checkbox"/> Legal |
| <input type="checkbox"/> Banking/Finance | <input type="checkbox"/> Dental | <input type="checkbox"/> Construction | <input type="checkbox"/> Retail |
| <input type="checkbox"/> Education | <input type="checkbox"/> Insurance | <input type="checkbox"/> Other _____ | |

6. What are your firm's approximate gross annual sales?

- | | |
|---|--|
| <input type="checkbox"/> Under \$500,000 | <input type="checkbox"/> \$500,000 - \$1 million |
| <input type="checkbox"/> Over \$1 million - \$5 million | <input type="checkbox"/> Over \$5 million - \$10 million |
| <input type="checkbox"/> Over \$10 million - \$25 million | <input type="checkbox"/> Over \$25 million - \$100 million |
| <input type="checkbox"/> Over \$100 million - \$500 million | <input type="checkbox"/> Over \$500 million |

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Continued from page 19

custom software package and needed computer infrastructure stabilization. We're looking for more of these joint opportunities."

Hartley & Associates, located in Santa Ana, Calif., has provided professional services to the high tech community since 1984. Services include interim management, organization building, recruiting, sales, marketing, advertising, Web site creation and Web marketing. Additional technical services cover management of system migration projects.

Agreement with Rover Data Systems Expands TRG's Offerings

TRG has formed a strategic alliance with Rover Data Systems, a premier provider of Manufacturing and Inventory Software (MRP and ERP) for the small and medium sized enterprise market. "Expanding our offering of IT services and premier software solutions to more organizations is a prime reason for forming an alliance with Rover Data Systems," stated Marshall. "Additionally, this strategic alliance will enhance the manufacturing and distribution software solutions available to TRG's customers and prospects. We look forward to a mutually beneficial long-term alliance with Rover Data."

Rover Data Systems has been successfully implementing their Millennium 3 (M3) Manufacturing and Inventory Control systems for over 12 years for manufacturers and distributors in such diverse industries as electronics components and assembly, auto aftermarket and OEM, aircraft/aerospace, government sub-contractors, and power systems. The M3 system offers a complete set of

applications for small to medium firms: Sales and Order Entry, Purchasing, Finance, Engineering, Production Management, Inventory and Distribution, Product Configuration, Quality, Customer Service, Field Service and Executive Information System (EIS).

Ron Vogel, co-founder of Rover Data Systems, stated: "The strategic alliance with a complete services firm like TRG gives Rover Data a more complete and robust offering. The M3 System with TRG's services and implementation expertise provides our clients a complete solution to their computing and software needs."

TRG is a professional services/consulting company that provides IT services and products to its customers that are located throughout the United States. TRG has consultants that are experts in Pick/MultiValue, UNIX/Linux, Windows NT/2000/XP and the Web. TRG is a Microsoft Certified Partner (MCP) and a reseller of Raining Data and IBM products. TRG is a wholly owned subsidiary of Datafaction, a leading supplier of accounting software since 1976. Datafaction is also a reseller of Raining Data and has a depth of experience in the MultiValue database market. TRG and Datafaction are part of Softline Limited, a leading global information technology group.

For more information, visit www.picktrg.com, www.hartleyandassociates.com or www.roverdata.com.

▶ Partners Health Care Goes Live with Web-based Physician Order Entry System Built on InterSystems' CACHE

InterSystems Corp. announced that a new Web-based physician order entry (POE) system is making a substantial contribution to the quality of care delivered in the Neonatal Intensive Care Unit (NICU) at Partners HealthCare's Brigham and Women's Hospital in Boston. Built on the CACHE post-relational database, the application increases protection against human error in the NICU, which provides intensive care for approximately 1,400 infants annually.

In October, the Web-based POE went live in the NICU, where infants are under 24-hour care. Many of the babies in the unit are very small — typically between 2.5 and 5.5 pounds in weight — and slight variations in medications make a huge difference. The Web-based POE automatically calculates prescription dosages based on each baby's weight before placing the order directly to the hospital's pharmacy, eliminating errors that could occur when calculations are performed manually or prescriptions are written by hand. The system also enables physicians and nurses to order X-rays, lab tests and other procedures across a secure Web connection.

"Taking our existing POE to the Web was the next logical step for us, as we develop applications that raise the level of care for patients," says Partners CTO Steve Flammini. "Initial rollout of our client/server network-based POE resulted in a 17 percent reduction in adverse drug reactions throughout the hospital, saving us as much as \$10 million annually. We expect to see a major impact from the Web-based POE. Web-enabling the system further demonstrates Partners' commitment to providing the highest possible level of care for our patients."

▶ Technical Resource Group Announces Expanded Support Desk Services

Technical Resource Group (TRG) is now offering expanded support desk services. With the implementation of new internal procedures, a dedicated support manager, and a call handling software package named Resolve, TRG can now provide support for new customers on an as-needed basis. Previously, TRG only provided support to existing TRG customers

"TRG is known for outstanding customer service; however, we were concerned as a result of our growth, that it was important to put in place the necessary foundation to enable support calls to be handled as efficiently as possible," stated Kevin Marshall, president of TRG. "The initial response from our customers with our new procedures in place has been very positive and we see this as allowing our company to grow, while still providing excellent support to our customers."

The new customers can be end users or software companies that would like TRG to provide first-call support to their customers. Support problems may be submitted to TRG via email, phone, fax or the TRG Web site. At any time, TRG can provide a customer with status on their support call and a complete log of their support activity. TRG will still provide the personal touch that it is so well known and respected for in the business technology arena.

TRG's support desk staff can assist customers with the following:

- ◆ Problems with Operating Systems (Windows, AIX & UNIX/Linux)
- ◆ Problems with Database Environments (Pick/MultiValue, SQL Server & Access)
- ◆ Problems with Application Software
- ◆ General System Failures
- ◆ Poor application, Web site, Email or printing performance
- ◆ Virus Attacks
- ◆ LAN & WAN Networking Issues

Any organizations interested in having TRG support their organization on any information technology problems can contact TRG via phone: (714) 708-8112 email: support@picktrg.com or the Web site: www.picktrg.com.

Approximately 200 nurses, nine attending physicians and 11 resident physicians inside the NICU are using the system extensively, placing about 400 new orders during each 12-hour shift for the floor's 50 patients. For added convenience and mobility for caregivers, wireless access to Partners' POE also is available.

"The Web environment offers the potential for much faster order input," says Linda Winfield, a nurse and corporate team leader in clinical systems management at Partners. "Less time at the

computer screen means more time for patient care."

"Partners HealthCare is setting new standards with the implementation of the CACHE-based POE in the NICU," says Paul Grabscheid, InterSystems' vice president of Strategic Planning. "We're proud to have the opportunity to work with them as technology partners in making this initiative a reality."

For more information, visit www.InterSystems.com.

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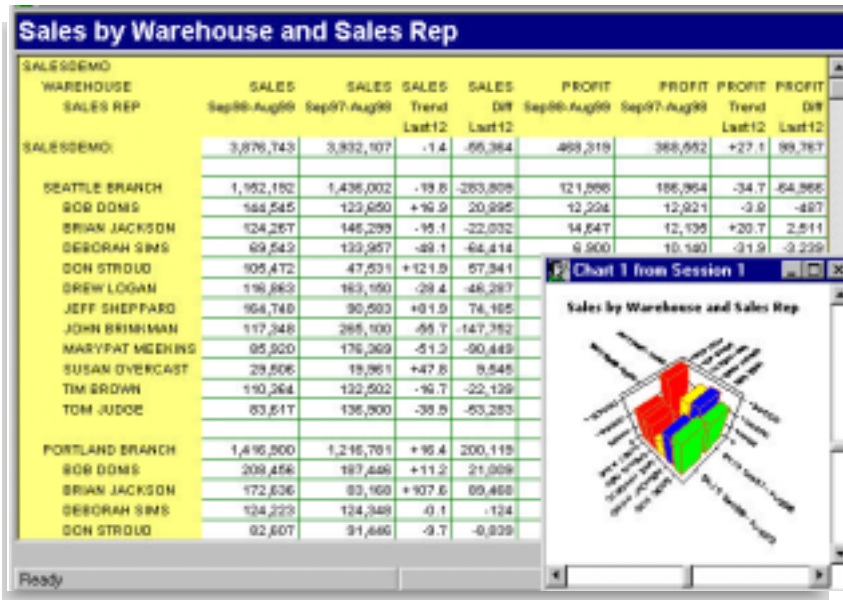
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