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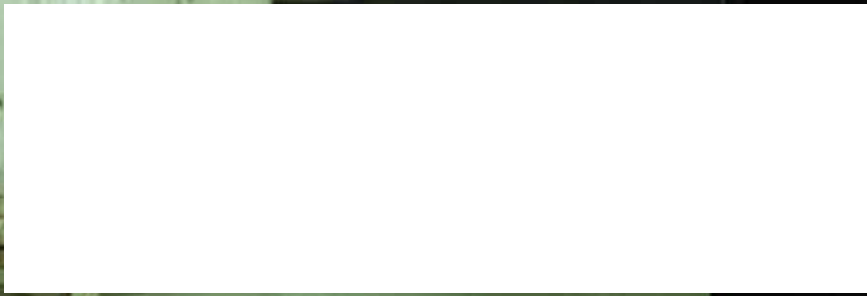
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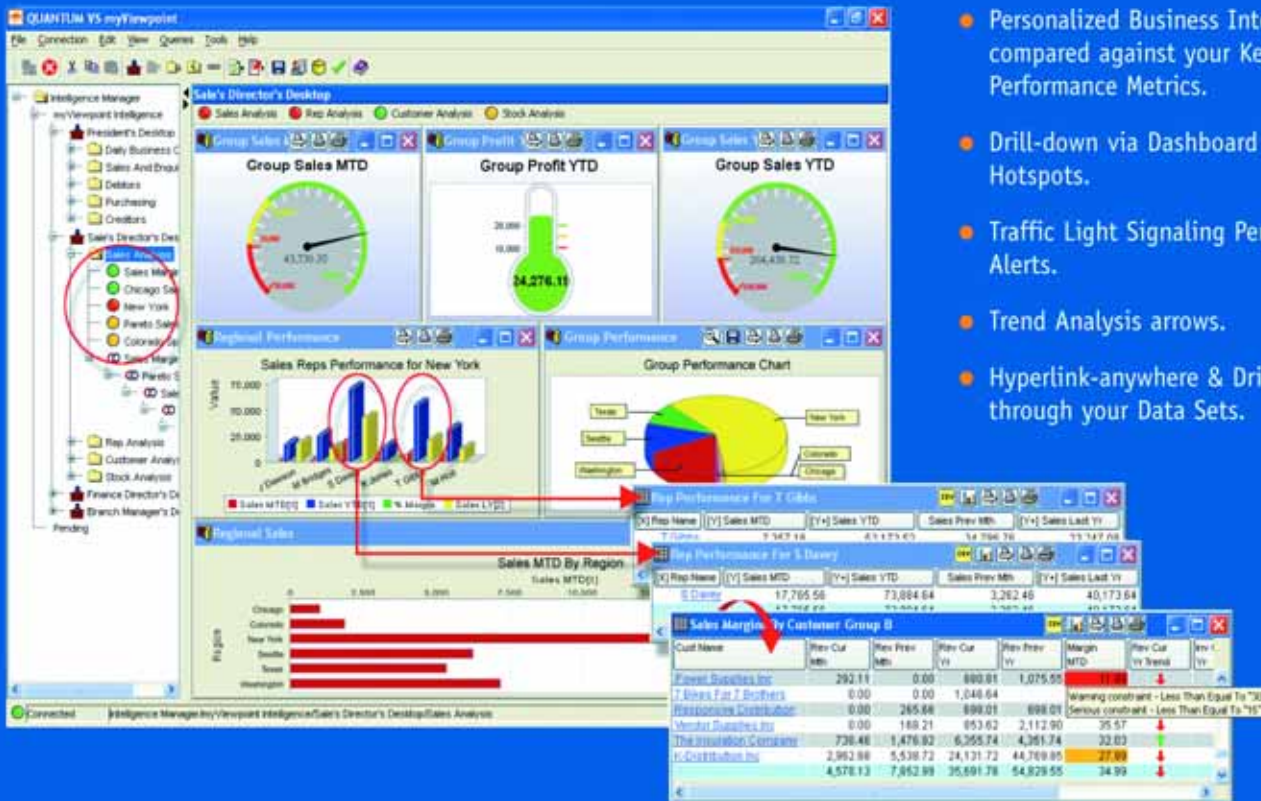
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We have recently changed the Spectrum University Webinars to better provide training and continuing education to your employees or yourself. Spectrum University is a specifically formatted webinar that spans two or more weeks with a single one to two hour webinar each week.

This webinar format allows us to provide you more in-depth educational materials and information on how to solve or evolve your business systems, without disrupting your work day. This concept originated from talking to attendees at the International Spectrum Regional Conferences. One complaint about the webinars was that an hour was not enough time to really train someone on a new concept in MultiValue, but any longer and you start losing people to day-to-day work.

The solution seemed fairly simple: create the webinars so that they can be used as lunchtime educational classes. Span the classes across more than one week like community colleges night classes do, and you can still keep your day to day productivity up but get the additional training that you or your employees need.

I have been working with Lee Burstin from Dynamic Systems for the last three months on developing this program for the MultiValue market. Many of you know Lee from his training business as well as being a presenter at the International Spectrum Conferences for many years.

We have worked out 26 different webinars that fit into the following series.

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The Back-To-Basics courses offer fundamental MultiValue knowledge comprising the backbone of the environment. This is a great place to start if you are new to MultiValue or have been working in MultiValue for a while but need a refresher of the fundamentals.

This includes topics like:

MultiValue Retrieval Syntax; MultiValue Dictionaries; MultiValue Command Scripts; MultiValue Programming Series

The MultiValue Programming courses are targeted to beginners and experienced programmers. This is where you can get started if you are new to programming in the MultiValue environment. Experienced programmers will find advanced topics of interest.

This includes topics like:

Introduction To MultiValue Basic Programming; Advanced MultiValue Basic Programming; MultiValue Basic Programming For GUI Developers; Supporting Your MultiValue Basic Applications

MultiValue Administration Series

The MultiValue Administration Series is aimed at those who are involved with day-to-day administration of the MultiValue database environment. Each course will be four weeks long and will include

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MultiValue Reporting Series

The MultiValue Reporting Series focuses on getting information from your MultiValue application to other reporting environments. There are a variety of tools available to offer better ways of looking at the information contained in your MultiValue application if we can get this information to them or expose your information to them.

Beyond MultiValue Series

The Beyond MultiValue Series takes you into the world of the Web, .NET, integration environments, and more.

This includes topics like:

- .NET Programming For MultiValue
- Not Just For MultiValue Series
- The Not Just For MultiValue Series presents topics of general interest regardless of your computing environment.

This includes topics like:

- SQL Queries

Keep a watch in the magazine and on the website for dates and additional topics.

- Nathan Rector, President, International Spectrum -
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Arev32: The Future *for* Arev Users

BY MIKE RUANE, REVELATION SOFTWARE

First, a quick note to thank Nathan Rector, the International Spectrum staff, and all the others who made the recent International Spectrum Conference in Long Beach a success. We at Revelation Software wish to congratulate International Spectrum on a great show and wish them continued success.

Advanced Revelation, commonly known as Arev, was introduced in 1987 as a successor to Revelation version G. In fact, it was scheduled to be called Revelation H, but since there were so many new features in the product, Revelation Software decided to change the name. There was active development on the Arev product for many years, but the last release was completed in 1995. Though it's been twelve years since the code was last touched, there are still thousands of users running on Arev systems, some since the late

1980s! Revelation Software has been continually improving the networking components so that the systems could continue working on the evolving network technologies (if the reader recalls, in 1995 the Local Area Network arena was seeing a battle between Microsoft NT version 3.5.1 and Novell, which was only thinking about offering TCP/IP support in addition to its IPX, and there was a Linux, but not for the masses yet) however a nearly insurmountable obstacle has now appeared in the path of Arev users: Microsoft Vista.

Most Arev systems will not run on Vista machines in a satisfactory manner. We at Revelation have had some success in running Arev on Vista standalone PCs, but the CPU usage stays at about 100%, and when we try to run when on a network, it does not work at all. We've heard of sites where it seems to work for a while, and others where it does not work at all. To eliminate any fear, uncertainty, or doubt, we at Revelation Software have created Arev32.

Arev32 is a port of all the Arev source code to OpenInsight, where it has been recompiled. The presentation of the Arev screens is handled through an OCX control that allows the display of the screens in all their 80 by 24 character glory. This article will cover in some detail the steps that an Arev developer will need to go through in order to move their application from Advanced Revelation to Arev32.

Arev32: How to Install and Configure

The Arev32 console is included with OpenInsight release 8.0, and is based upon the same technology as used by Revelation's CTO, which has been discussed in this magazine in earlier issues. It can be launched easily from OpenInsight, but there are a few steps that need to be performed and a few

Continues on page 8

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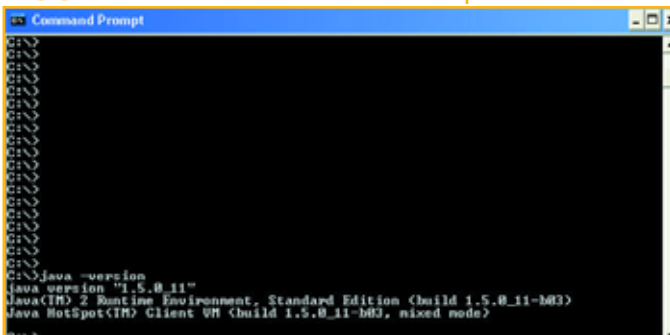
Arev32

Continued from page 6

design considerations that need to be understood before it can be run successfully. The first step in running Arev32 is to have OpenInsight 8.0 running. Whether a new installation or the upgrade, the correct OpenInsight components are installed when OpenInsight is installed.

Arev32 communicates with OpenEngine in one of two ways—either via a running service named OEngineServer, or via the Osocketsserver.jar file. In either case, the system requires that the workstation be loaded with the Java Runtime Environment (JRE) version 1.5 or higher. This can be downloaded free of charge from www.java.sun.com. To determine whether your system already has the correct runtime engine, simply get to a command line on the PC and type in the command: `java -version`, as seen in figure 1.

FIGURE 1



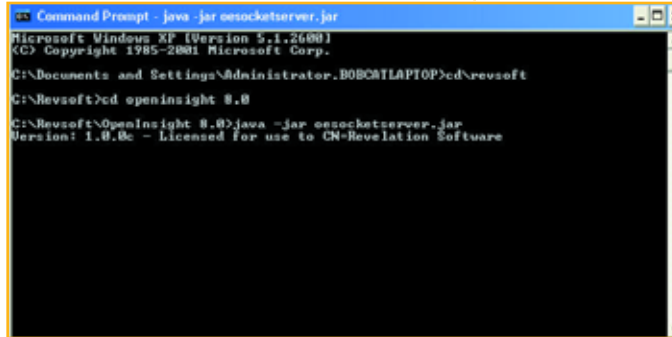
Once the correct version of the JRE is installed, it is then up to the developer to decide whether or not a service or jar is used to run the socket server. If using the jar method, the user simply types in the command

```
java -jar osocketsserver.jar
```

from the directory in which OpenInsight 8.0 is installed. If everything is done correctly, a screen similar to figure 2 should appear:

At this point, the communication is ready to commence. The user should

FIGURE 2



then launch OpenInsight (if it is not running already), log into the SYSPROG application, and launch the Arev32_Standalone_Form. This form launches the Arev32 screen, calling the correct login and startup parameters. The form can be launched in two ways; the easier way is to get to OpenInsight's System Monitor (from the Application Manager Main Menu: Tools-Advanced-System Monitor) and type in the command:

```
EXEC AREV32_STANDALONE_FORM
```

After pressing the Return key, if all goes well, the following screen shown in figure 3 should appear.

Those readers who are familiar with Arev will recognize and be familiar with this screen.

Moving from Arev to Arev32

Now that the Arev32 screen has been launched successfully, and if it has then the SYSPROG account is working correctly, it's time to migrate the existing application from Arev to Arev32. The process begins in OpenInsight.

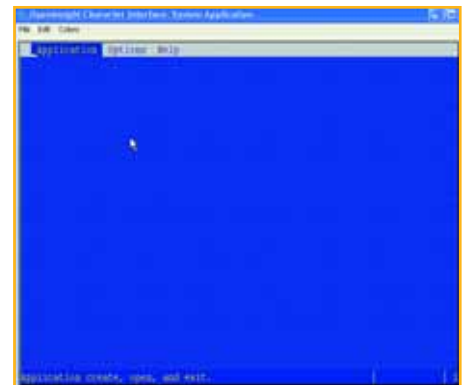
Revelation Software has created a screen and process that will allow a user or developer to move an application from Arev to Arev32, but there are a number of processes and actions that

need to happen behind the scenes—it is not merely a case of copying files.

First, the new system must be created in OpenInsight. An application (the OpenInsight equivalent of an account) can be made by logging into the

SYSPROG application, and then choosing File-New Application. A screen will appear, as seen in figure 4. The user

FIGURE 3

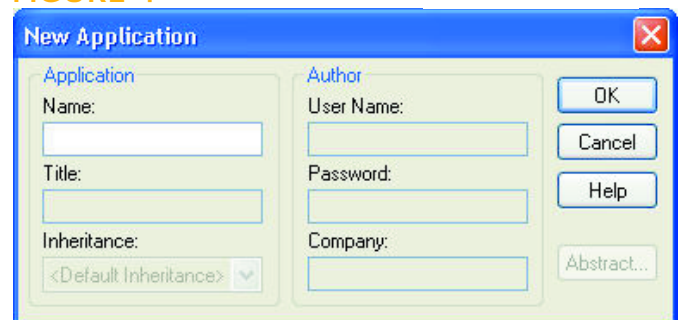


should enter the Name of the new application, and then a User Name for the new application. In the OpenInsight world, a convention is to create a user with the same name as the application.

Second, the original system must have its source code. There is a binary-level incompatibility between Arev and Arev32. There were a number of special "@" variables in Arev that did not exist

Continues on page 10

FIGURE 4





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Arev32

Continued from page 8

FIGURE 5



options chosen by the user when running the Wizard, the system will convert dictionary items, copy tables at the OS level, compile programs, duplicate users and environment settings, and finally complete. During this process, which takes a few minutes, a number of messages and gas gauges appear on the screen, indicating progress.

in OpenInsight. In the OpenInsight compiler, the @ variables are referred to by their position in a system common list. The @ variables have been added back into OpenInsight, but they are now in different positions, so the existing compiled code will not work.

Third, the original system should not have been built in the SYSPROG account. If it has been built in SYSPROG, it should be moved to a new application name in Arev32.

To make the migration process easier, Revelation Software made use of OpenInsight's own Wizard Wizard (a wizard process used to make your own wizard) to create the Arev32 Conversion Wizard. It can be launched from the System Monitor by typing in the command EXEC AREV32_CONVERSION_WIZARD. The first screen of the wizard should appear, as seen in figure 5.

By clicking on the Next button, and providing the information while navigating through the Wizard, the user will supply the necessary information required to convert the application.

After the Finish button has been pressed, the user is then directed to a screen where they need to click on the 'Create App' button which will create the new application. Based upon

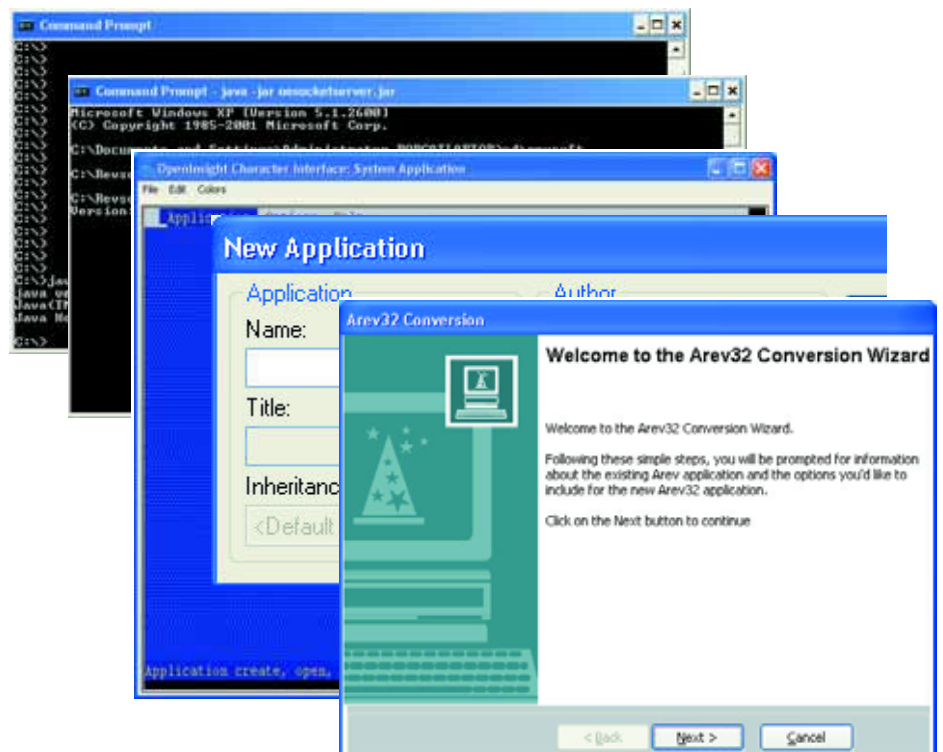
When the process is complete a list of files that have programs in them are displayed. The user then has to decide which programs need to be recompiled. A list of every program in the system is presented, and once the user has selected the programs to be recompiled and clicked on the 'Recompile' button, the recompilation process begins.

Once all the programs have been recompiled, the system is available for use. By going to the System Monitor and typing in the EXEC AREV32_STANDALONE_FORM command, the user is then presented with the newly converted application in Arev32. There will likely be a few items that will need to be tweaked and modified, because no conversion is one hundred percent effective, but the vast majority of the application will have been completed.

Once the application has been converted to Arev32, the developer can then begin working on creating graphical components for their application, but that's already been covered in other articles.

We are convinced that Arev32 will enable those users of Advanced Revelation systems to continue to run their existing systems, move forward to a graphical interface, and take advantage of the many features found in Windows. We look forward to continuing to support our customers who have been with us for so long. is

FIGURE 6



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Industry Standard MultiValue Reporting

BY ROBERT HOUBEN, FUSIONWARE

The History of Data Integration Technology ODBC – The First Data Standard

History of ODBC

FusionWare Corporation was founded in December 2003 and acquired a set of technologies that originated in 1992 with a company named Liberty ODBC Software. Liberty began after its founders had spent several years writing data connectors to allow various products from large vendors to communicate with SQL databases. As a result of this involvement, they became aware of discussions that several vendors and other large software developers were involved in regarding the SQL Access Group (SAG), then formed by the X/Open standards group. This resulted in their development of a Call Level Interface (CLI) and adoption of the ANSI SQL specification (shortly after release, they adopted the ANSI 92 SQL syntax as their standard). ODBC was first released by Microsoft as a reference implementation of this specification and rapidly became both a current and de facto standard for database access.

Some of Liberty's founders partnered with Microsoft to provide the implementation of most of their ISAM-based ODBC drivers. Liberty's ODBC driver for the MultiValue market was the first ODBC driver released outside of Microsoft.

Problems with ODBC and MultiValue

An interesting issue affecting the ODBC/MultiValue interface was that tools that worked with ODBC required the provision of something called "Core Conformance." Part of Core Conformance

was a subset of ANSI 92 syntax and a few extensions to allow things like dates and other data types or structures that were non-standard across the industry to interoperate at a client level.

The problem with this was that MultiValue data was very difficult to force into a true relational form. First, MultiValue systems did not provide the mechanism to define sufficient metadata to automatically extract a complete and reliable relational view. Second, in any real-world application, the dictionaries were typically incomplete, and sometimes had entries that were just wrong.

Additionally, developers often used fields in ways that defied simple one-to-one mapping, creating a complex situation. We have all seen date fields that allowed you to either store the date as the traditional "number of days since 31 Dec 1967" or as text strings like "BEFORE NOON." In a relational world, a column is either a date or text, but it cannot change its mind mid-stream!

As a result of this, there was no way to access data that was non-relational without going through some kind of mapping. This mapping exercise often required a convergence of expertise that was difficult to find, and expensive to acquire.

Attempted Hacks

A number of MultiValue middleware products have attempted to bypass or over-simplify the mapping process. They typically create interesting

problems as data is lost due to inability to convert, or multivalued data creates inconsistent data results depending on which fields you access. For example, presumably, in a situation where the fields are mandatory (i.e.: cannot be "null") "select count(f) from table1" would yield the same count, regardless which field you selected. But, if you combine multivalued and single-valued fields, you could get a very different number back. In short, attempts to short-circuit the mapping process always cost more than proper mapping would have, in lost functionality and time wasted in attempts to work around problems.

Microsoft Acknowledged This Early On

This need to view all data sources as relational was an issue that affected many data sources, not just the MultiValue world. Mainframes, Mumps, lots of specialized ISAM databases and many other sources also had data that was non first-normal-form, let alone non-relational.

At one of the very early Microsoft ODBC conferences, Microsoft representatives spoke of their vision for the future. In these discussions they started by pointing out that over 80% of all corporate data did not reside in a relational source. With the advent of the Internet, XML, and many consumer based and enterprise desktop products, this problem has been exacerbated.

For a Long Time They Didn't Really Deal With It

Their earliest attempts to deal with this simply build new syntax on top of the

Without Mapping

existing SQL syntax. They did a pretty good job of letting you represent non-relational views of data with the Shape Provider syntax, but this was still layered on ANSI 92 SQL syntax. Applications tended not to work unless you provided this level of access.

JDBC – Java’s Equivalent to ODBC

Sun implemented the SAGs CLI, and made it as compatible as they could to the ODBC specification, in recognition of ODBC’s wide acceptance and the number of developers comfortable with it. This implementation was called

JDBC. Like ODBC, JDBC demanded ANSI 92 SQL syntax as a Core Conformance requirement, and it suffered from the same limitations.

Finally, a Way Out

With the advent of OLE DB and legacy ADO, Microsoft began to acknowledge that a result set was not required first to be in normal form. They finally acknowledged that you might have a result set that was comprised of nested sets of data. This concept was called a “Hierarchical Recordset” (also referred to as a “Chaptered Recordset”). It was

possible to create such a result set from any ODBC driver using a layered provider called the Microsoft Shape Provider. If you used this method however, you were limited to a combination of the Shape provider syntax plus ANSI 92 SQL. This limit, then, enforced yet another mapping exercise.

However, OLE DB drivers could natively return a Hierarchical Recordset.

FusionWare immediately implemented a strategy, known as the FusionWare Direct Data Access Server (Direct DAS), that would allow you to map your MultiValue data into a Hierarchical view. While this still required a mapping step, it enabled you to map a single view of a MultiValue file. ANSI 92 SQL required that you map each multivalued or subvalued set as a separate table and created a foreign key relationship between subvalues and their parent multivalues and parent item, and between multivalues and

Continues on page 45

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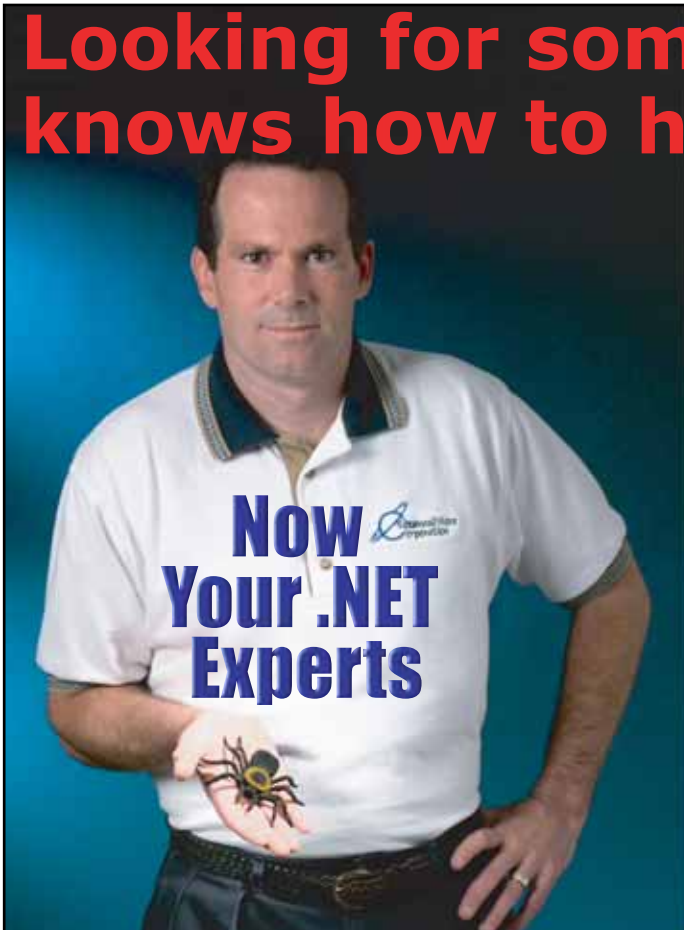
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Migrating the Value of Your MultiValue Applications to Relational Technology

B Y U S H A P . R A I K A R

MultiValue applications that have evolved over the years are extremely robust, have imbibed niche functionality in the areas they operate, and enjoy continued customer satisfaction. So can an organization rest easy on these laurels? In today's competitive world, there are emerging technologies that throw up many challenges—connectivity, ease of maintenance, integration with the outside world, data security, and so on. What happens when business demands a “modern” application, written perhaps in JAVA or Microsoft .NET technologies, from the functionality that is embedded into a MultiValue application?

A migration project is essentially mapping where you are today, deciding where you want to go, and how you are going to travel the distance.

Faced with such a situation, each organization has four choices:

- Replace with a commercially available off-the-shelf product
- Migrate to a new technology
- Re-engineer the application
- Do nothing

If a custom-built application could be easily replaced with a suitable product, then this situation would not have come about. If doing nothing was an option, then probably the business would not remain viable for very long. So this only allows migration or reengineering as the viable strategy for growth. Re-engineering an application

manually has all the challenges of a software development project and is out of scope of this discussion.

This article really focuses on how an application can be migrated, the important decisions in the planning phase, and some of the best practices to adopt in a migration project. A migration project is essentially mapping where you are today, deciding where you want to go, and how you are going to travel the distance.

When you embark on such a journey, each organization needs to answer some fundamental questions.

Why migrate? Different organizations have different reasons to migrate. Some may want to take their applications to the Internet, some may want to integrate their applications with other departments, some may want to utilize emerging technologies, and so on. The demand for change will set the expectation and will drive the right architecture and technologies. Each organization should plan for the skills they need to develop. Knowing why will also ensure that the overall migration criteria are clearly known and published upfront.

What to migrate? Surprisingly, many organizations start out thinking they know what to migrate, but only when they delve deep do they discover the

true scope of their migration. It might be useful to do this exercise even before the full journey of migration is mapped. It will help organizations get an idea of the budget and better time lines and resources can be mapped.

When do I migrate? Ensure you have complied with some basic criteria before you start migration. Your application needs to be relatively stable. If there are still too many changes happening in the application then creating a baseline for the MultiValue application will be hard. Find the business cycle in which you can rollout a new version of the application, then work backward and decide the timelines for starting the migration.

How do I migrate? Get professional help. Amidst the chaos of deadlines to meet, deliveries to make, and numerous other operational issues, it is always a good idea to get a team that is clearly responsible for this activity.

Once you decide to migrate, there are some best practices that you must adopt.

Give yourself enough time to plan: A migration project requires multiple phases like data synchronization, source management, new technology initiation, and review of business process. Hence, good planning is an essential success criterion. In migration, the choice of the target technology, the training, and the upskilling this imposes on the organization, supporting infrastructure and processes mean that there must be adequate planning beforehand.

Take a first bite: Before you start migration, take a small piece (usually a 5 to 8% sampling) of your application and test-drive the entire migration process, tools, vendor, migration, acceptance, and deployment. This will reduce your risk of migration as you learn many useful lessons of migration which you can apply in the full migration project and gear up for the final journey.

It's all about the data: This will be the single most crucial piece of your migration project. The mapping of a MultiValue database to a relational database system,

the levels of normalization you apply, and the resulting complexity on the application code will define the complexity metrics of the resulting migration project. It is important to manage this correctly, as every change will impact code revision multifold. The recommended approach would be to convert the MultiValue database to a RDBMS with a similar model and then add in database schema optimization techniques after the migration project is completed (fig. 1).

One shoe does not fit all: Don't be surprised if you figure out that your migration needs are quite different from what the other MultiValue organizations might want. This is perhaps the biggest technical challenge in the migration space. Every organization has a different need; solutions will therefore need to be tailored correctly.

No big-bang: The world might have been created in one loud big bang, but

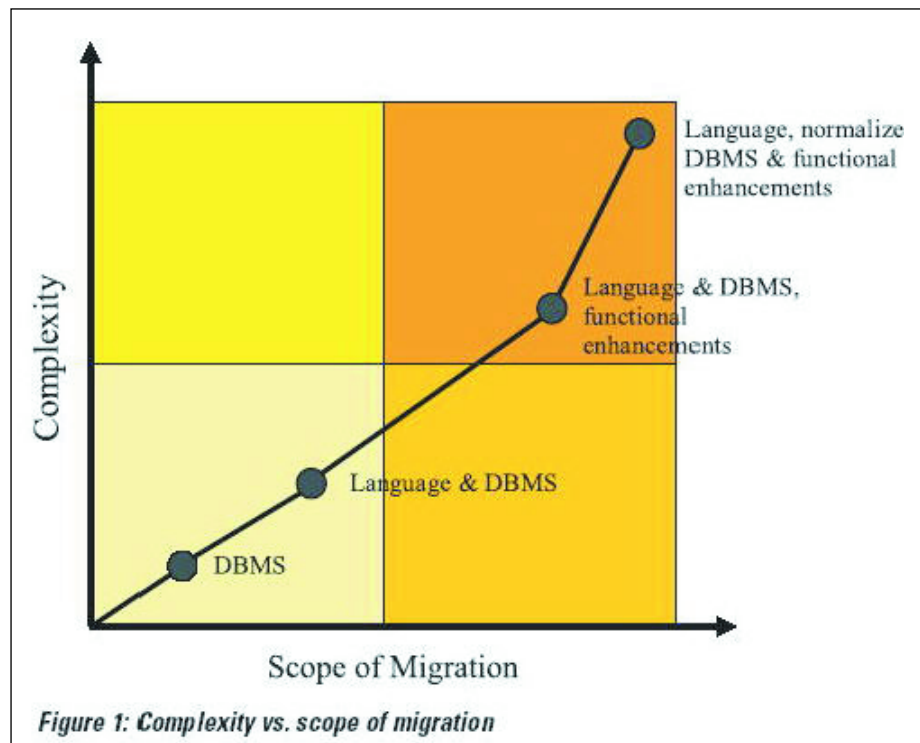
the migrated application should surely not be. The clean approach is to break the application into smaller manageable units, in which each unit is migrated, tested, and accepted. Beware that too many units will also bring in more interactions between the units which

make it tough to migrate and test each unit. You will need to judiciously manage the units such that migration of the units, testing and the overall management can all happen reasonably well.

Test, test and then test some more: Your MultiValue application might have taken many years to mature, but the migrated application has only limited time in which the new application must reach the same level of maturity and stability as the older one. In the project, as each unit gets migrated and tested, you will need to factor in time and effort to test previously migrated units again. There may be

The biggest challenge to a migrated application lies outside the technology; it lies in the eyes of the users.

Continues on page 16





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Migrating the Value of Your MultiValue Applications to Relational Technology

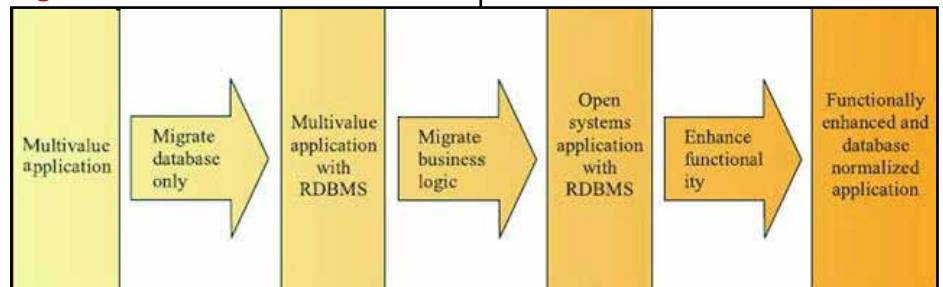
Continued from page 15

some difference in behavior due to the change of technology; this will be more evident if you try to take the MultiValue application to the Internet.

Don't under-estimate the resistance to change: The biggest challenge to a migrated application lies outside the technology; it lies in the eyes of the users. Change management needs to be planned for all teams—the users, the infrastructure team, the development and maintenance teams. It is a good idea to involve a set of veteran users who are engaged with the migrated application from the day the migration starts. This allows the migration project to know clearly what the users expect, and this interaction also helps the organization to have a positive and smoother rollout of the migrated applications.

The most stable path of migration that balances risk with automation is figure 2:

Figure 2



• Migrate the database first, to a relational database system. Since your business intelligence rests on your data, the more open it becomes, the better the benefits of migration will be.

- Test and stabilize.
- Then migrate the application to an open technology on .NET or JAVA. Choose each module that needs to be migrated and plan to go live. Since the MultiValue application and the migrated open application both work with the

same database, this transition can be planned and managed well.

- Test and stabilize.
- Introduce functional enhancements and database optimizations.
- Test and continue maintenance.

This approach maximizes the value of the MultiValue application and minimizes risk by managing the entire migration project in small deliverables. is



USHA P RAIKAR

is Technical Director,
Bangalore Softsell Ltd.

Usha holds an Engineering degree from

Mysore University, India. Among her many technical projects, she has successfully lead a migration, for a major insurance company, from a PICK/BASIC SB+ platform to JAVA on DB2.

She is responsible for the direction and implementation of a suite of products with techniques, methods, and processes, to deliver full migration solutions. Usha regularly speaks on managing software projects & software processes. Usha and her team work directly with ONgroup (www.ONgroup.com).

4GL Briefing— OpenInsight

BY CHARLES BAROUCH

Mike Ruane, President of Revelation Software, gave us some good information on using OpenInsight as a 4GL. Here's what he told us.

SPECTRUM: *Mike, we all know that OpenInsight stands on its own as a powerful multiuser database. What would you say are its biggest strengths as a 4GL?*

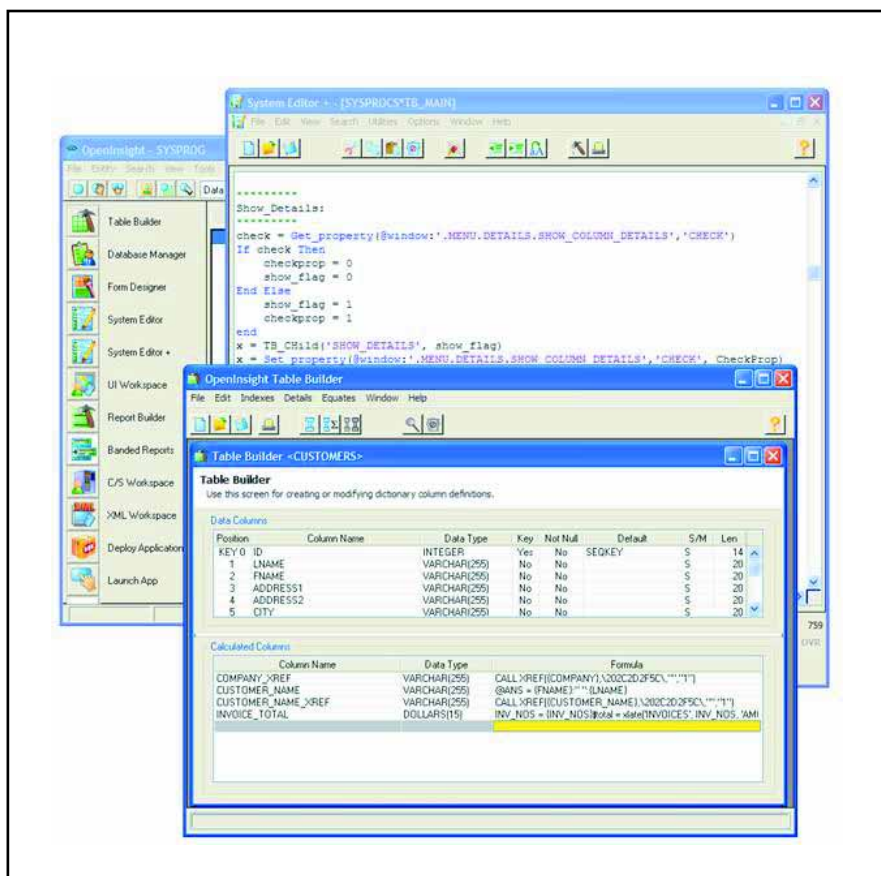
MIKE: As a 4GL? Ease of use, flexibility, scalability, and consistency.

SPECTRUM: *Can you expand on that? Let's start with ease of use.*

MIKE: Each tool has its own wizard that will actually take you by the hand and help you to create whatever entity you're after—a table, a popup, a report, etc. However, if you're an experienced developer, you can go right to the tool and modify the entity directly.

SPECTRUM: *Flexibility?*

MIKE: In OpenInsight, pretty much everything is a record in a file. As a developer, you can modify the record as it is about to be used—for example, modifying the SELECT criteria for a report or popup, or the required fields in a data entry form. It can be done either by modifying the base record but more routinely (and safer too) is the ability to pass modifying parameters to whatever routine is used to call the entity you're working with—the POPUP function for a popup, RUN_REPORT for a report, etc.



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4GL Briefing— OpenInsight

Continued from page 17

SPECTRUM: *So it flexes the way MultiValue people are used to flexing software? We can manipulate the aspects of the 4GL much like we do with a green screen application?*

MIKE: Correct. We fit the MultiValue paradigm. OpenInsight is a GUI tool, written as a GUI tool by MultiValue developers for MultiValue developers, as well as for developers in general. Everything in the tool understands MultiValue—our reporting language, the Form designer, the reporting tools. We're not an add-on or piece of middleware.

SPECTRUM: *Scalability?*

MIKE: We scale two ways. One, for size. We can easily support up to 250 concurrent users on a basic Windows, Novell, or Linux server with nothing more than one of our network products. For more concurrent users, you just get more hardware, memory, and licenses. You can also have a single-user system, either developer or runtime, for networked or standalone machines.

We also scale for flexibility. We are very cognizant of the fact that we build software, not hardware. On some systems (especially in the normalized world) adding new fields to a table is almost like trying to forge new parts for your car and get them bolted on. In OpenInsight, users can add fields to a table, and then to a form, reports, popups, whatever, and everyone gets them. They can be added while the system is running—no need to shut down the system, lock out users, rebuild relationships, etc. It just works.

The OpenInsight development staff all do work as OpenInsight consultants as well, so we don't have an "ivory tower mentality." They have to use the product in the real world, with the customer sitting at your side or looking over your shoulder.

SPECTRUM: *As a developer I can release single-user versions of the software, with the 4GL features, without a runtime fee?*

MIKE: Yes. The user gets all the runtime components in the system for free, but they do not get the development tools for free. They can modify their reports, or create new ones, but they cannot compile programs, make new data entry forms, etc. They run existing apps.

SPECTRUM: *So I can make powerful, multi-user, fully graphical applications, and release working, single-user copies to allow people to try what I'm offering. How about consistency?*

MIKE: In our tools, we go for a common look and feel throughout the system. Ok and Cancel buttons in the same places on different screens, options, etc. We make sure our tools make it easy for the developer to do the same as well. We also are consistent in our development language, Basic+, a superset of Basic. The same language is used in our stored procedures, windows scripts, calculated columns, everywhere; the developer only needs to remember one command set and language throughout the product.

For the most part, OpenInsight is written in itself, so as developers, you know we're going to get the tool right, if for no other reason than we need to use it ourselves.

SPECTRUM: *How long has OpenInsight had its 4GL?*

MIKE: OpenInsight was written as a windows-based 4GL in 1992. There was never just a database. The GUI tools were always a part of it. Even in the DOS days, Revelation and Advanced Revelation had tools—editors, dictionary builders, screen and form generators, so if you want to go way back, I'd say since 1982. 25 years.

SPECTRUM: *Do you have an estimate as to how many applications out there are using these tools?*

MIKE: Hundreds. We cover such a wide swath of markets. Most of our repeat sales come from VARs who have an application that they sell to end users. We have many, many developers who do custom systems for their end users and continue to write new ones all the time. We have one client that just converted a client's Access system to OpenInsight and another that's writing a water billing system for a few counties. And we keep selling seats to both of these groups. In the last 18 months we've sold over 18,500 new seats.

SPECTRUM: ***Congratulations! Now, I know that OpenInsight has the ability to talk to other databases. Which ones?***

MIKE: We talk to our own linear hash database. We have native connections to Lotus Notes, MSSQL, Oracle, and IBM's U2. Using our Client/Server Workspace, we can set up connections to any ODBC compliant database. We also have XML, Java, and CGI capabilities, so we can basically work with any database that is out there nowadays.

SPECTRUM: ***How much of the 4GL toolset is usable with these third-party databases?***

MIKE: All of it. Each of our tools works with whatever the data is. Some work with no changes to the code whatsoever. For example, our regular READ and WRITE statements require no changes whatsoever when changing databases to IBM's U2 products. However, with ODBC databases, we use Connection Objects and Datasets to work with the data. In most cases this is transparent to the developer, unless they are writing their own code to do the I/O work. Many developers do handle the I/O themselves, so we've made this as easy as we can. We also make sure that we handle and respect locking when using these other databases and make it as easy as possible for developers to decide where the work should be done.

SPECTRUM: ***Can you give us an example?***

MIKE: OpenInsight does most of its processing on the workstation. Some work gets done on the server and some on the client workstation. When using a UniData database, and running a select statement, it probably makes more sense for the select to take place on the server side. So we make sure that the developer can specify that.

SPECTRUM: ***It sounds like a lot of careful thought has gone into all this.***

MIKE: It has, but we're not omniscient. We don't know what we don't know, but we try real hard to think things out before we do them, and then we try even harder to fix things we've either broken or forgotten. We believe that effort erases mistakes.

SPECTRUM: ***So, your relationship with your developers helps you target the things which need doing?***

MIKE: Absolutely. We ask our developers all the time what other features they want and need, and quite a few tell us without us having to ask. The OpenInsight development staff all do work as OpenInsight consultants as well, so we don't have an "ivory tower mentality." They have to use the product in the real world, with the customer sitting at your side or looking over your shoulder.

SPECTRUM: ***Sounds very pro-active.***

MIKE: We also watch for and review industry changes and decide what technologies we should incorporate into the products as well, and we react when there is a change in technology. Our OpenINSight for Linux is an example of this, with the increased popularity and requests for Linux. Also our Arev32 product is a good example. We still have thousands of sites running DOS versions of our software. If they upgrade to Microsoft Vista, these DOS apps will not run. So we've ported the entire Arev code base into OpenInsight, provided a migration path, and made OpenInsight run the apps as they exist in DOS, but in a console window under OpenInsight. So now these applications can keep running while the developers get

ready to move them to the next level, which is hopefully a GUI solutions using OpenInsight.

SPECTRUM: ***When using non-MultiValue, like MySQL, what are the limitations?***

MIKE: We have no limitations from a toolset point of view. It does make design a little more interesting, since in the MultiValue world it's so easy to design a single table that would be represented by multiple tables in the normalized world, but the tools handle the data just fine.

SPECTRUM: ***If I develop a 4GL application set in OpenInsight, using for example MSSQL, and I want to migrate the back end to MySQL, or Linear Hash, or UniVerse, how hard is it to change out the back end?***

MIKE: For an SQL to SQL change, given that the tables and columns remain the same, all you'd have to do is change the Connection Object to point to the new server with the correct credentials. For OpenInsight to U2, you'd just set up the U2 connection to point to the U2 server, and away you'd go. We even have tools that will copy all your files and dictionaries from one platform to the other. When going from SQL to a MultiValue flavor, or the reverse, you'd have to change the access methods—as mentioned before, change READ statements to a XOQUERY commands, etc.

SPECTRUM: ***So, with OpenInsight, I could write one code base, with the I/O in subroutines, and redeploy by swapping I/O methods? And for same to same, I don't even need to do that?***

MIKE: Correct. is

Brian Leach Consulting Appointed Reseller for SpoolerPlus



Sysmark Information Systems, Inc, author of print spooler and migration software for the U2 community, is proud to announce the appointment of Brian Leach Consulting Limited as a Reseller of SpoolerPlus for UniVerse and UniData in the British Isles.

Brian Leach has compiled an envious record of design, development, customization, and support of software products in the MultiValue community over the past 17 years.

Brian is personally known throughout the MultiValue community as a technical leader, trainer, IBM Certified Solutions Expert, and Vice President of the International U2 User Group.

"A generic Pick print spooler for UniVerse and UniData will be a huge step forward in improving expected Pick-like functionality and lowering conversion costs for end users moving their software onto UniVerse and UniData from any generic Pick database," Mr. Leach said.

"Best of all, they can continue to use their generic Pick spooler. No more converting all the STARTPTR and SP-ASSIGN commands in your generic Pick software to SETPTR commands."

SpoolerPlus allows you to run your generic Pick software on UniVerse and UniData® using the generic Pick printer commands that are embedded in your software or that you use at TCL - e.g. :STARTSPOOLER, STARTPTR, SP-ASSIGN, SP-EDIT, LISTPTR, LISTPEQS, etc.

SpoolerPlus will hold, print, hold-and-print, and spool on-hold print jobs from designated print queues to designated printers or files when those jobs are generated and/or when those printers are available. It will also leave spooler entries open for additional print jobs and it will suppress all printing.

And (adding a feature to the generic Pick spooler) you can configure each printer to the print characteristics of the assigned print queue automatically when the printer is assigned to that queue, using printer drivers that we supply and/or that you may write - which is the "Plus" in "SpoolerPlus".

"Migrating generic Pick software to UniVerse and UniData has never been easier", says Dave Taylor, CEO of Sysmark.

"You no longer have to overcome the FILE-SAVE and ACCOUNT-SAVE tape format incompatibilities between UniVerse/UniData and most generic Pick databases when transferring your software. Our FileCaddy programs,

TAPE.DUMP and TAPE.LOAD, quickly and reliably transfer all the software and data files in each account from most generic Pick databases to UniVerse and UniData in just two steps, automatically creating new files on the fly if they don't already exist."

"The last barriers to moving your software to UniVerse and UniData have been removed. Using the migration package of both SpoolerPlus and FileCaddy, you can migrate your software yourself, we can migrate it for you, or we can work with you as a member of your migration team."

To find out how inexpensive it is to migrate your generic Pick software to a database that's adding tomorrow's features today, and that's supported by IBM, contact:

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Sanderson chosen for new Nutri-Care venture



Situation: Carson-Newman, a four-year college with an enrollment of 2,200 students, needed to deploy a Reporting Solution to support their new back office implementation of Datatel, an ERP system built on UniData designed to manage campus operational needs.

IT Staff required a Reporting Solution able to satisfy and exceed the needs and expectations of eventual report consumers — one providing fast, secure access to real-time information.

Challenge: **Provide real-time data access campus-wide**

Greg Bailey and his staff at Carson-Newman College are responsible for, among other things, the day-to-day operation of the campus-wide ERP implementation of Datatel, a software package designed to manage universities and community colleges, including everything from student enrollment, financial aid, and marketing operations. Essentially the backbone of the University insofar as software is concerned.

Datatel is a relatively new package for Carson-Newman, having only completed the rollout campus-wide in 2004. Prior to the rollover, Greg and his staff relied on a heavily modified legacy reporting system to retrieve

data from their previous system. But with a new state-of-the-art back office installed campus-wide, Carson-Newman quickly realized the need for a strong reporting environment to complement

it. They entered the marketplace seeking a cost-effective solution supporting their MultiValue UniData database.

Solution: **Implement Informer Web Reporting**

Continues next page

SJ+ Systems, Intellisol Form Alliance

SJ+ SYSTEMS ASSOCIATES, INC., a global MultiValue software developer, has formed a strategic partnership with Intellisol Corp. to market, install, and support PRC, the industry's leading software configuration management and compliance tool.

This new alliance allows SJ+ to extend the level of professional services offered to new and existing PRC users.

Intellisol, founded by Mario Barrenechea, brings software programming services, web development, enterprise application integration, data migration, reporting, and business intelligence services to the partnership. As part of the agreement, Barrenechea is an "Authorized Consultant" for PRC products.

"We are very excited to have Mario and his company working with us", says Susan Joslyn, President of SJ+. "He brings a wealth of experience, with more than two decades creating and operating software companies, and a high level of enthusiasm for this marketplace."

The alliance will continue to help companies deal with compliance and governance issues — areas in which the PRC tool has excelled, Barrenechea notes.

"Corporate compliance directly affects IT departments. PRC is a mature product that has been enriched through many years of experience on application development in the most complex and sophisticated environments. Rather than taking a restrictive approach, PRC actually improves developer productivity," he says.

"This product is a must for serious application developers, who care about streamlining and controlling all aspects of the life cycle of application software development."

About Intellisol

Intellisol Corp., based in Westborough, MA, resells database and tools products and provides technical and professional services. The staff is proficient in MultiValue and relational database technologies, including U2, D3, ONware, Oracle, SQLServer, IBM DB2 and MySQL, and provides custom application development on a wide range of platforms.

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

About SJ+ Systems Associates

SJ+ Systems Associates, Inc., with over two decades of MultiValue development experience has the experience, training and education to help customers implement a complete life-cycle management strategy to improve their products, delivery, support and data integrity — whether the goal is compliance or just in-house control.

For more information, please visit <http://www.sjplus.com> ■

Sanderson chosen for new Nutri-Care venture *Continued from page 23*

Ultimately, the IT staff at Carson-Newman needed to provide a gateway to operational information for their end users. To be successful, they required a system easy to maintain, intuitive for end users, secure, fast, powerful, and most importantly, cost-effective. After reviewing available options, Greg and his staff chose Informer Web Reporting.

Results: **Intuitive, personalized view into administrative data**

Within a week of purchase, Carson-Newman delivered critical reports to end users and trained report consumers to create and modify their own reports. A customer of Entrinsik since only the summer of 2005, Carson-Newman operational staff now bases much of their daily operations on Informer functionality, relying both on standard features such as report scheduling as well as new-found creative ways of manipulating

Informer reports, such as automating call-lists to their Telecommunications counselors.

"Informer has been the best investment we've made since we converted our administrative software to a UniData platform. With its easy, web-based, real-time, point and click interface, Informer delivers a powerful reporting solution that is affordable and would be almost impossible to be without now," said Kevin Houk, Application Systems Analyst, Carson-Newman College. ■

F.W. Davison and Entrinsik Provide Integrated Payroll and HR Reporting Solution



F.W. Davison & Company, a payroll and human resource

software provider, and Entrinsik, producers of Informer Web Reporting Software have worked together to complete the integration of their respective software packages. Customers of F.W. Davison's popular HRPyramid software now have access to an embedded version of Informer utilizing HRPyramid's sophisticated security settings to manage reporting access. The two companies have also entered into a joint marketing agreement for the integrated software.

"The integration of these two packages provide HRPyramid

users the intuitive reporting functionality of Informer without any fear of accessing unauthorized data," said Scott Hastings, CEO of F.W. Davison. "We are excited to have this secure, user intuitive web reporting solution available to our customers."

Brad Leupen, CTO of Entrinsik added, "During the integration project, we learned from F.W. Davison and some of their customers the important need of allowing some of the HRPyramid advance security settings to translate into reporting access through Informer. We worked together to include a suite of technical enablers into our standard VAR Informer package to assist the implementation of

the more advanced custom features required."

"We are delighted to form yet another partnership with a software company in the IBM U2 space," said Doug Leupen, President of Entrinsik. "We believe this will provide a win-win-win situation in which Entrinsik, F.W. Davison, and F.W. Davison's customers all benefit."

Informer is a web-based reporting tool that allows end users to intuitively and securely access data directly from IBM U2 databases and view the data in HTML, Excel, or PDF formats. For more information on Entrinsik and Informer, visit www.entricsik.com. For more information on F.W. Davison & Company, visit www.fwdco.com

C-7 Reporting Solutions LLC Sees a Need

About C-7 Reporting Solutions, LLC
C-7 Reporting Solutions leverages "Best of Breed" solutions and matches their strengths to solve customer reporting problems. C-7 Reporting Solutions is a full time Reporting Solutions company dedicated to their customers reporting requirements. We assist managers wanting to effectively increase sales and profits while reducing costs.

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C-7 Reporting Solutions
Larry Christensen
President
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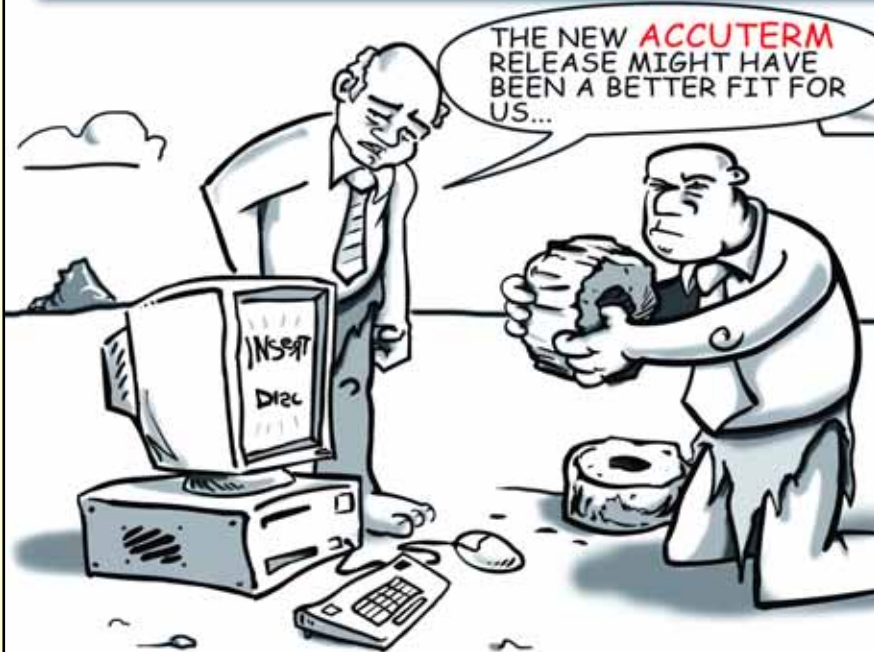
C-7 Reporting Solutions announced that it will begin working with the MultiValue Database community offering Business Intelligence, Executive Dashboards and Report Writing Solutions that

are based on a "Right Solution" philosophy. "The current available technology is quite good and many years have been expended to develop the applications being offered." said, Larry Christensen, President of C-7 Reporting Solutions. "I have been working with reporting solutions for many years and know, not all companies can use the same software to handle their reporting needs." "C-7 will fit the best

technology to solve a reporting problem."

The future looks good and we plan to offer more than the basic BI and Reporting technology. We will also offer solutions expanding the limited Extract Translate and Load (ETL) currently available and offer access to multiple database sources as well as adding report distribution solutions.

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A man in a dark suit and tie stands on a porch, pointing his right index finger at a door handle. He is holding a vacuum cleaner in his left hand. The porch has white columns and a railing. Two lantern-style light fixtures are mounted on the wall above the door.

How to Sell Stuff

You have undoubtedly seen articles about this subject before, but I bet you haven't seen one like this. I have planned four articles to cover the entire sales process — prospecting, discovery, negotiation, and closing the sale.

Informer Web Reporting for U2

<http://www.entrinsik.com/informer>



MultiValue Friendly, Intuitive Web Reporting. People Are Talking . . .

"... intuitive enough for technically inclined users to be able to set up their own reports without my IT staff."

- Lori Murray-Hawkins, University of New Brunswick

"Informer was a really quick way to get at data nobody could ever reach before. We found no other tool provided the graphical view into our multi-value database."

- Jordan McCall, Bratrud Middleton Insurance

"People in departments that we haven't introduced it to yet have seen other people using it and have approached us asking to get access to it."

- Joan Anderson, Gustavus Adolphus College

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How to Sell Stuff

Continued from page 25

You have undoubtedly seen articles about this subject before, but I bet you haven't seen one like this. I have planned four articles to cover the entire sales process – prospecting, discovery, negotiation, and closing the sale.

In this article, I will discuss prospecting. I'll reveal the secret that works for the top 10% of sales people everywhere in every industry—and it is not what you think.

If you have read anything about sales, or perhaps attended a sales training seminar or class, you have heard about various closing techniques, door openers, getting past the gatekeeper, overcoming objections, and the like. If you have used these techniques, you have probably made some sales; however, the techniques are not the cause of your sales. They are an impediment. You would have made more sales without the slick, manipulative “techniques.” All those slick sales techniques you learned from countless books and tapes and seminars are actually slimy sales stoppers. The top 10% of sales people don't use them.

Want to know what they do use? Let's look deeper at prospecting process. There are several ways to find prospects. Phone, mail, e-mail, networking, and door-knocking are a few. In the traditional model of prospecting, you have probably learned that the objective of prospecting is merely to get an appointment.

“Sell the appointment,” sales people are told. “Once you get in front of the prospect, then you can sell the product.”

That may sound good, especially to the sales manager who likes to see busy sales people, but in truth it does not work very well. It generates a lot of appointments

The
objective
of sales
activities
is to sell your
product or
service to
someone
who already
wants and
can
afford it.

and activity and mileage on salesmen's cars. It leaves sales people tired, rejected, and burned out—ready to move on to become computer programmers or auto mechanics. Furthermore, it doesn't make nearly as many sales as could have been made with a different approach.

I'm going to make a short detour here to differentiate between “sales” and “marketing.” We hear the words spoken together so much that most people think “sales and marketing” go together like ham and eggs. They don't. “Sales” and “marketing” are, in fact, completely different activities. Marketing is activity directed at the largest audience you can find, with the aim being to tell those people everything you can imagine that is good about your stuff. Advertising (radio, TV, newspapers, magazines) is a form of marketing. Mass mail or e-mail is marketing. Your web site is a marketing tool. Your business card is a marketing tool.

Sales activities involve only one person at a time. The objective of sales activities is to sell your product or service to someone who already wants and can afford it. That's so important to understand that I'll say it again. The objective of sales activities is to sell your product or service to someone who already wants and can afford it. Notice that marketing people don't care if their audience wants or can afford your stuff. Marketing wants to get in front of everybody and tell them everything good about your product or service. If the marketing department has done its job, there will be plenty of people who already want and can afford your stuff. Your job as a salesman is to find them. That's why you prospect. The purpose of prospecting is to find people who already want and can afford what you are selling. It is not to make an appointment, or to persuade someone to buy your stuff, or to educate people about your company or products. Once again, the purpose of prospecting is to find people who already want and can afford what you are selling.

With that attitude in mind, your prospecting calls (cold calls) take on an

entirely new look and sound. Instead of begging for an appointment, you are in the mode of finding out if the prospect already wants your product, or not.

Here's the old prospecting call: "Hi, this is Bill Slick. I work with Countem Up Software. We're the number one accounting software company in the far-flung industry. Our software is used by three out of four far-flung companies in this state. I'll be in your area next week, and I just wanted to ask you if it would be OK for me to drop by and share a few ideas with you and see if you are interested. No obligation, of course. Would Tuesday or Wednesday be better for you?"

If you are like most people, you instantly go to "red alert" when you get a call like that. Your sales resistance meter pegs at 1000 mega-no's, and if you are feeling at all charitable you say, "That sounds interesting. Could you send me something in the mail? Do you have a web site I could check out?"

As the salesman making such a call, you dutifully agree to send him something and give him your web site URL. Then you follow up three more times, maybe even get an appointment, and you make a sale to perhaps one out of a hundred people like this. All-in-all, you will spend 10 or 20 or 40 hours to make a single sale.

The new call: "This is Bill from Countem Up Software. Do you want an accounting system that is used by three out of four of your competitors and costs about \$10,000?"

If the prospect says, "That sounds interesting...etc.," as above, you say, "I can give you details later. Right now, I need to know if you want an accounting system that is used by three out of four of your competitors and costs about \$10,000."

The prospect will probably say, "No." You say, "OK, goodbye." You don't waste your time trying to "build a need," probing for his "pain points," or any other such nonsense. He said he doesn't want what you are selling. That's all you need to know. You disqualify him and move on. Remember that your job is to find people who already want and can afford what you sell.

If the prospect says, "Yes," you can go forward with the sale. You will still only sell to only about two out of a hundred prospects (depending on your industry), but you will not waste hundreds of hours sending information, making appointments, following up, persuading, educating, and begging people to buy from you. You will spend only a fraction of the time you did before making a sale. And most important of all, you will go home at the end of the day feeling energized and happy.

Next time, we'll continue the discussion with the "discovery process." We'll explore how to find out if you have what the prospect really wants, and if it is likely that he will go through with the purchase. is

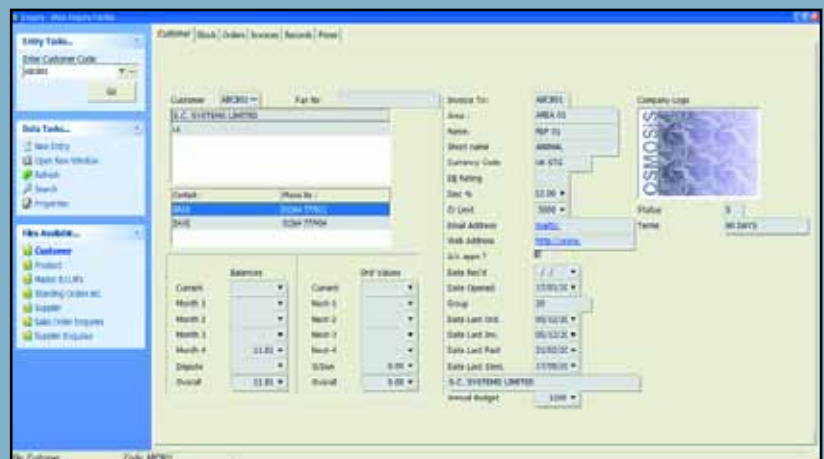


Steve has been a salesman for over 20 years. Having lived in several foreign countries and most of

the states, he is now settled in Corona, California, with his wife and two kids. Steve has sold computer software and hardware, professional services, insurance, stocks and bonds, cars, books—you get the idea. He is now semi-retired, though he occasionally takes on a contract involving training and coaching sales people. You can reach Steve at sanado@san.rr.com or 619-435-6789.

CORRECTIONS

In the January/February issue an incorrect screenshot was used on the article "4 GL Briefing – Osmosis." The correct image is this one. We apologize for the error.



Revelation Software *and* IBM Partner to Create More Options for MultiValue Developers

B Y S H A N N O N S T O L T Z

In January, Revelation Software announced they would market and sell the IBM UniVerse and UniData Servers along with their OpenInsight 4GL application development environment.

Marketed as OpenInsight for U2, the new product offers Revelation Software's current customers a natural upgrade path to IBM's U2 databases and IBM's U2 developers another application development tool to choose from.

"OpenInsight is a complete package," said Mike Ruane, president and CEO of Revelation Software. "It's a full 4GL with tables and maintenance tools, a forms designer, full GUI, a very nice debugger, user helps like pop-ups, XML, and client/server; it's not a piece of middleware, [it is] a direct connect between the back end and the front-end."

"We have customers who are coming to us that have applications now, but they

are green screen. It's getting tough for them to market their applications," said Mike Ruane, "With our tools, it is very easy for them to put that GUI front-end on, and our screens are very, very fast."

"This allows a Revelation customer who has a growing business or concerns on what is happening on the server a path," said Susie Siegesmund, director of IBM's U2 data services. "We've kept the U2 databases very much up-to-date with modern standards and technology."

Susie feels this partnership is for customers who want the XML capabilities, built-in web server development environment, and data-in-flight encryption capabilities available with the U2

databases. For those needing the extra security for social security numbers and credit card data, UniVerse 10.2 offers encryption of data-at-rest at the dictionary level, which, according to Susie, helps meet SOX requirements.

Existing Revelation users do not have to upgrade to U2. "They don't have to port it [to a U2 database], but they can if they want to," said Mike. "We have tools to move dictionary items and data back to the U2 database. Then

they'll see some speed. On a database level, those systems are fast."

The Driving Force

While OpenInsight for U2 came about

OpenInsight for U2 provides another option as a front-end development tool for IBM's UniVerse and UniData platforms and allows existing Revelation customers to expand their database functionality.

from a Revelation Software customer's need for an upgrade path to a U2 database, the roots of the partnership began fourteen years ago, when UniVerse was still associated with VMARK.

Mike Ruane explained, "In 1993, VMARK approached Revelation, some development was done, but the project was put aside. Then three to four years ago, one of our users, who used to be with Revelation, asked 'what about that thing with VMARK'. So we went back and found the original code, it was still

there. We updated it from 16 bit to 32 bit and added some functionality and called it U2 Connector.

"Then one of our clients who had a solution connecting OpenInsight to a U2 back end got some attention. We started talking and found that IBM had done a ton of work on the database in the last couple years and we had done a ton of work on the front-end in the last couple years. We realized it would be a pretty good match."

A Boost in Credibility

With over six million licensed users between them, Susie Siegesmund feels that both of IBM U2 and Revelation customers could benefit from the new partnership. "My customers could decide to use [OpenInsight] to enhance their applications. On the OpenInsight side, all their customers have a path forward."

In addition, Revelation Software customers benefit from the boost in credibility that the IBM name provides.

"[The relationship with IBM] gives us a credibility to take the package to other markets where MultiValue is not well known," said Mike Ruane. "We do well at Linux shows, but now with an IBM back end – it makes it more enticing."

OpenInsight vs. SystemBuilder

At first glance, it appears that OpenInsight is in direct competition with IBM's SystemBuilder application development tool. "The development tools could be said to compete," said Susie Siegesmund, "but there's been plenty of room in the world for OpenInsight and SystemBuilder to co-exist. Our markets are enough diverse; there's little overlap where we compete."

Revelation Software's OpenInsight product has historically been Windows and Linux-based. According to Susie, IBM has a "lot of customers on UNIX systems." The two companies have also historically covered different vertical industries.

IBM is still marketing SystemBuilder and will not be selling OpenInsight. In addition, IBM is working on a new version of the SystemBuilder client, which they will roll out in Alpha format for feedback this Spring.

"The current version of SystemBuilder client is built for older technology, and it has the ability to be character-based or GUI. But it has some limitations, like Internationalization," Susie explained. "It doesn't make sense dollar-wise to retro-fit, so we're building a completely new [SystemBuilder] client based on Microsoft Vista. What you can do with Vista, you can do with the new client.

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It automatically has Internationalization because of Vista."

"When we deliver the new client, it'll be the most cutting edge," said Susie. But she also points out that the most of the development has taken place on the client as a GUI, not as much on the development tool.

"OpenInsight is a development product on its own," said Susie. "There's been plenty of room in the world for OpenInsight and SystemBuilder to co-exist."

More choices

This synergistic new partnership allows the MultiValue community more choices to enhance existing applica-

tions, build new applications, and expand the use of MultiValue databases in today's business. OpenInsight for U2 provides another option as front-end development tool for IBM's UniVerse and UniData platforms and allows existing Revelation customers to expand their database functionality.

For users and developers interested in either OpenInsight or IBM's U2 database, both companies offer trial editions of their software from their web sites. Revelation provides a 30 day evaluation copy of OpenInsight for U2, while IBM's U2 databases are available for personal use only (not commercial) for Windows, Linux, and Unix operating systems. is

SHANNON STOLTZ is a freelance writer specializing in business and technology. Have you solved a business problem with your MultiValue system?

Let us share your solution with our readers. To be featured in a future case study, contact Shannon at Shannon_Stoltz@hotmail.com.

Order Cycle

BY CHARLES BAROUCH

for Programmers (Part 3)

When you sell services or rent products, your real product is time and availability. This is very different than the product based concepts we've been discussing in the previous articles. Take consulting as an example.

Tonya is a consultant. Every morning, she gets a fresh shipment of 24 hours which can be sold. Unlike a normal product, she cannot rationally sell all twenty four hours, but she can sell any eight or ten or twelve from this fresh batch. Unlike a product, every hour she gets has an expiration date. She can't sell January 2007 hours in March 2007. So, she has an automatically replenishing supply of hours, which cost her nothing, but they can't all be sold, and they become unavailable as the day continues. This is not a normal product model and we are remiss if we try to stuff a service business into an order entry system which only understands products.

If Dwayne rents chairs, he faces exactly the same challenge as the consultant. He can't book the same chair into two different places at the same time. He can't book chairs for yesterday. He has the additional issue that products will get ruined at a higher frequency than

consultants, so he can't expect that every chair will return in a usable state every time.

So, what do we require from an order entry system that handles time and availability? The first thing we need is overview data: the ability to see the flow of used and unused time regardless of which orders generate the use.

The typical form for this overview is, unsurprisingly, a calendar. We need to see which hours, on which days, each of my consultants (or lawn chairs, or freshly laundered sheets), is occupied before I can sell more.

The second thing we need to consider is travel time. How long will it take for a rental item to get picked up? Are we sending it directly to the next site or bringing it back for inspection, cleaning, and repair. In the case of a 'live asset' we may need to consider arranging hotel time as well. In the case of a 'product asset' we may need to stock spares in case of excessive damage.

The third thing we need to consider is down time. With people, we need to consider vacations, holidays, sick days, and the like. With things, we need to think about maintenance cycles, parts replacement, and other quality issues. We'll go back to Tonya and Dwayne to make all this concrete.

Tonya's order entry system is tightly integrated with her payroll system. When someone in her employ plans a day off, she needs to know about it in both places, so we'll unify the entry. Likewise, she has a travel expense module which also ties in to order entry, so she can match hotel and car rental expenses to specific projects and bill the client for related charges. For closer trips, she has a mileage reimbursement system attached as well. All of the hours connect back to a project management screen for tracking consulting days back to the client's longer term goals. None of these are traditional order entry additions, but all of them make sense in Tonya's service-oriented world.

When mapping out an order entry system, we need to consider how it is used and how the end results—billing and completion of work—are to be organized and accomplished.

Her order entry does not start with products. It starts with a service list. Once you choose a service, it shows staff and outside consultants who can provide that service. Once you choose a staffer, it shows a calendar with only the available days highlighted. Once you move past the calendar, and attach a project, the rest looks like traditional order entry: price (rate), quantity (of hours), shipping (traveling) charges, and the like.

Dwayne's set up is very different. While, at a broad overview level, they have the same needs, the move from people to things changes a lot. Dwayne's order entry starts with a calendar. He can rent you chairs without caring about purpose, but a good order entry system promotes suggestive selling, so he has an analogy to the project on Tonya's system—activity. Knowing that you are renting chairs for a wedding, he or his staff, can suggest other rental items you might want. If it's an outdoor dinner party, he might offer to rent you tables, a tent, or perhaps some bug repelling torches. So, he starts with a calendar, continues to activity, and then the rest looks even more like traditional order entry than Tonya's did.

Now, the fact is, both of these systems will probably have to sell some products as well. This is where life gets very complex. When the consultant rents his time and sells the Mac you run the software on, the order entry system must flex both ways. When the rental place rents the Tiki torches, but sells you the citronella that burns inside to chase off the bugs, the system needs to flex in other ways.

Instinctively, the technical minded will think about alternate starting points. When you buy the Mac, you start from a traditional screen, but when you buy hours, you start from the service-staff-calendar-project. This idea dies on the altar of reality. Most customers want one bill for one activity. They don't want Tonya or Dwayne generating multiple bills based on how their sys-

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tem wants entry done. Worse yet, if they take orders by phone, forcing that data entry clerk to flip between screens is a bad idea. Even worse, if they push the order entry onto the web and expect customers to flip between screens constantly to create an order.... Let's just say that the goal is to encourage sales.

When mapping out an order entry system, we need to consider how it is used and how the end results—billing

and completion of work—are to be organized and accomplished. Since we are on the subject of how the real world works, I want to end this third and final part with a few words about non-real orders.

All of our order entry models, across all three parts of this series, are subject to the need to create non-binding orders. These proto-orders, typically called quotations, allow customers to

Continues on page 44

New Products

BlueFinity Announces mv.NET for IBM U2



BlueFinity International, Limited has announced an agreement with IBM that will allow IBM to market and sell BlueFinity's flagship product, mv.NET.

Under the agreement, IBM will develop, market and sell an IBM version of mv.NET through its sales force, as well as offer the product through its widely established network of VARs and OEM partners. The agreement enables IBM to receive mv.NET source code for integration with its UniData and UniVerse (U2) data server environments, develop an IBM version of the product, and fully support its customer base.

"Customers will immediately benefit from our ability to leverage mv.NET technology to deliver a tool that will facilitate development of .NET-based solutions for the U2 data servers," said Susie Siegesmund, Director of U2 Data Services for IBM. "This will open up opportunities for existing U2 customers to cre-

ate .NET-based interfaces to their extended-relational data servers and help facilitate development of new innovative business applications."

mv.NET is a comprehensive solution for accessing MultiValue databases from within Microsoft's .NET environment. It enables software designers to combine the power and flexibility of proven MultiValue technology with the feature rich .NET environment.

IBM UniVerse is an extended relational data server designed for embedding in a variety of solutions. UniVerse offers configurable internationalization capabilities, high-end security and encryption features, standards-based interfaces with Web services support, and high-availability options used as part of a variety of top-shelf solutions. UniVerse is a mainstay in a variety of industry solutions such as automotive, banking, ERP, and insurance.

IBM UniData is a nested relational data server

designed for embedding in a variety of solutions. UniData excels in data server interoperability, offers robust high-availability, with proven stability, scalability and performance. UniData is the foundation for many best-of-breed solutions in such industries as higher education, finance, and emergency services. UniData offers low total cost of ownership by remaining easy to administer and maintain.

"The mv.NET products from BlueFinity are currently attracting considerable attention as they are introduced to markets around the world. This partnership will help accelerate the introduction of mv.NET, particularly into IBM's established customer base and distribution channels," said Pete Loveless, General Manager of BlueFinity. "The synergy between our respective product lines and target markets makes this relationship a natural fit." ■

Revel
O

Revelation Software has introduced OpenInsight for IBM U2 and announced that under an agreement with IBM, Revelation Software will market and sell the IBM UniVerse and UniData Servers as part of its OpenInsight offering.

"OpenInsight for IBM U2 enables our innovative GUI technology to seamlessly work with IBM's high performing U2 data servers," said Robert Catalano, Director of Sales, Revelation Software. "This new offering provides customers a highly scaleable and flexible solution for their mission critical applications."

OpenInsight is a repository-based applications development environment that enables development teams to work collaboratively to design, develop, deploy, and scale high-performance business solutions. OpenInsight's complete tool set (including a Form Designer, Editor/Debugger, UI Workspace, XML Workspace and more), advanced BASIC+ scripting language and powerful client/server

ation Software Announces penInsight for IBM U2

development combine to deliver a complete environment for deploying and evolving network applications.

IBM UniVerse is an extended relational data server designed for embedding in a variety of solutions. UniVerse offers configurable internationalization capabilities, high-end security and encryption features, standards-based interfaces with Web services support, and high-availability options used as part of a variety of top-shelf solutions. UniVerse is a mainstay in a variety of industry solutions such as automotive, banking, ERP, and insurance.

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"Increasingly companies are turning to IBM and Revelation Software for MultiValue solutions," said Susie Siegesmund, director, IBM U2 data services. "This partnership consolidates our MultiValue communities, enabling us to offer our customers a unified suite of industry leading software."

For more information about IBM U2, visit www.ibm.com/software/data/u2/

About Revelation Software

Founded in 1982, Revelation Software delivers a suite of application development tools and companion services that take full advantage of leading network computing architectures, messaging, groupware, and client server platforms. There are more than 1.6 million licensed users of Revelation products across 80,000 deployed sites worldwide. The company has offices in Westwood, New Jersey, as well as a European distributor in the United Kingdom, and an Asia Pacific subsidiary in Australia. For more information, visit www.revelation.com. ■

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Report

BY MITS

August 2006 saw the launch of MITS Report, the groundbreaking reporting environment from the long-time experts in Advanced Reporting and Business Intelligence. Nearly a decade earlier, MITS released MITS Discover, its flagship OLAP Business Intelligence tool, bringing MultiValue data stored in people's systems into a more accessible format.

At that time, having access to large volumes of data in a summary format was a real benefit to users. MITS Discover Hypercubes, the model used to organize information, gave users the ability to compare data in one time period to another, start at a high-level summary of data and easily drill down to more details, and sort summarized totals.

Focusing in on Customer Reporting Practices

Observing how customers were using MITS Discover, the MITS team discovered something interesting. Fred Owen, MITS president, notes, "Some customers were using the initial flash screen explorations in MITS Discover as a filter for the resulting detail rows." "What they really wanted," he explains, "were the transactions for a particular person or time period." Therefore, they were using those parameters in MITS Discover to drill down and then view the detailed transactions supporting those numbers.

The ease with which users received results in MITS Discover was so impressive that they were using the software as a transactional reporting

system. This reporting practice inspired the MITS engineering team to consider creating a solution tailored to transactional reporting. The solution would maintain MITS core benefits—ease of use, quick access to transactional data, and security—but with a focus on getting detailed transactions and handling very large transaction sets. The engineering team at MITS set out to develop an entirely new reporting environment, MITS Report.

A Note About Report Writers in ERP Systems

Why create a brand new way to do transactional reporting when the ERP systems that organizations rely on come with their own report writers? While it is true that most ERP systems have built-in reporting tools, many customers struggle to use them. The benefits provided by most ERP system providers today relate to the core business process. For example, an ERP system may be good at tracking manufacturing processes, managing a warehouse full of inventory, or producing medical billing transactions. However, reporting on that data is not the pri-

mary purpose of the system, and in many cases, the ERP system provider has added the reporting capability as an afterthought.

With MITS, the situation is different. "We are specialists in reporting software," Owen points out. "So we can focus our full attention on what it takes to provide successful solutions for reporting. It's our core business." An ERP system, including the database that it resides on, is optimized for transactional processing, but doing that type of processing requires a very flexible data structure and an easy-to-modify system that can accommodate changing business needs. When it comes to operational reporting, those strengths quickly turn to weaknesses. Rapid, effective reporting requires an architecture that, when imposed on a transactional system, would rob it of its flexibility and responsiveness.

Owen explains, "With MITS Report we created a system that is specifically optimized for transactional reporting. The architecture that we used provides the benefit of interactive reporting against an organization's own data but outside the ERP system."

Addressing Customer Challenges through a Unique Architecture

"We've heard that some reporting tools are not designed to reinvent the query process of the database," Owen states. "We disagree. We think that in order to make a compelling and complete user experience, the

interactive queries need to be handled in an optimized way. MITS Report is truly revolutionary in this regard.”

MITS Report solves common reporting problems in the areas of speed, load on the system, and security. The key is its unique Report Source architecture, which makes it possible to expose the data stored in the system by presenting it in a familiar web-based format, while preserving the flexibility that MultiValue offers.

Using an extraction engine proven at thousands of MITS Discover sites, MITS Report caches reports in a Java environment optimized for sorting and filtering thousands of transactions.

This process leaves the original data untouched, requiring no changes to the ERP’s operational system or database. Owen emphasizes this point: “You’ll never have to slow down the ERP system by creating an index to optimize reporting. You’ll never have to modify a data dictionary. You’ll never have to worry about our product changing anything in the functional system and thereby breaking something.”

Because it uses Java technology, MITS Report can be added to an existing system or it can be hosted on a different server, moving the load to another system if necessary. The Report Source architecture makes MITS Report a true software reporting solution, with all the benefits of a dedicated report server.

On the MultiValue front, MITS is fully familiar with the database model and has gone to great lengths to preserve it in MITS Report. The same features available in the MultiValue query engine—

like nested multivalues and the ability to navigate those multivalues easily—are present in MITS Report. This means MITS Report will understand and navigate those MultiValue structures automatically and effortlessly.

Ensuring a Fast and Intuitive User Experience

MITS has devoted much time and attention to ensuring that MITS Report is both fast and easy to use. When a user requests a specific view of the information, the results are returned back to the browser within just a few seconds—the kind of quick response that is expected from a web-based solution.

Using MITS Report can be as easy as selecting predefined reports from a menu: the results are displayed quickly in a familiar Internet browser setting. Users with no technical training can select user-friendly options from drop-down lists viewed within their web browsers to run reports, manipulate them, and then save them.

More advanced users can modify reports by sorting, filtering, and totaling the transactions — all

directly from the report results screen. Power users can save that report under a different name or menu, or they can create reports from scratch using a buffet-style selection from choices made available by someone knowledgeable in the database structure.


System database administrators or systems architects can create Report Sources, using all the power of the underlying database, including manipulating data programmatically, to provide precisely the information a user needs.

Continues on page 36

Because it uses Java technology, MITS Report can be added to an existing system or it can be hosted on a different server, moving the load to another system if necessary.

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mits

Report

Continued from page 35

MITS Report makes full use of the MultiValue dictionary including I-descriptors, subroutines, and file translates. Additionally, MITS Report searches through existing dictionary items looking for references to related files. The software system then uses these references to automatically allow access to all the data in these "joined" files.

Protecting Important Information

One of the primary concerns an organization has is protecting its data. MITS Report includes a security layer giving each named user certain permissions corresponding to their privilege. This layer assures that users see the data they need and only that data. A primary benefit of MITS Report is that

when the user is viewing reports, there is no direct connection to the ERP system database. This separation helps ensure that the user cannot have unfettered access to the database.

Promoting Expertise through Online Demos and Training

MITS offers live online seminars and training classes to help users get the most out of MITS Report. Taught by the people who helped develop MITS Report, these educational programs give users a genuine feel for what it is like to use MITS software. The seminars and classes incorporate the newest technology for online presentations to make it easy for you to both view and participate. Ongoing training courses include: "Accessing Information using MITS Report" and "Creating Report Sources and Administration Basics."

Summary

In developing MITS Report, the MITS team took a hard look at the challenges customers were facing when reporting for MultiValue databases, and the engineers did not compromise in creating a solution. Owen puts it this way: "When we saw a barrier in an end user's experience, we solved it. When we saw a barrier to reporting the way it should be, we did not rest until we had completely solved it. That's why we have the architecture we do, and that's why MITS Report is going to truly revolutionize the way people get their data. We think this is the reporting product people have been waiting for."

For More Information

To learn more about MITS Report, visit the company Web site at <http://www.mits.com>. For more information about seminars and classes, contact us at info@mits.com. [is](#)

International Spectrum University WEBINAR SERIES

Back-To-Basics Series

The Back-To-Basics courses offer fundamental MultiValue knowledge comprising the backbone of the environment. This is a great place to start if you are new to MultiValue or have been working in MultiValue for a while but need a refresher of the fundamentals.

MultiValue Programming Series

The MultiValue Programming courses are targeted to beginner and experienced programmers. This is where you can get started if you are new to programming in the MultiValue environment. Experienced programmers will find advanced topics of interest.

MultiValue Administration Series

The MultiValue Administration Series is aimed at those who are involved with day-to-day administration of the MultiValue database environment. Each course will include the following key topics: file maintenance (creation, sizing and resizing), managing users, managing printers, managing foreground and background processes, backup, locking, working with persistent and non-persistent connections.

MultiValue Reporting Series

The MultiValue Reporting Series focuses on getting information from your MultiValue application to other report-

ing environments. There are a variety of tools available to offer better ways of looking at the information contained in your MultiValue application if we can get this information to them or expose your information to them.

Beyond MultiValue Series

The Beyond MultiValue Series takes you into the world of the Web, .NET, integration environments and more.

Not Just For MultiValue Series

The Not Just For MultiValue Series presents topics of general interest regardless of your computing environment.



Visit www.intl-spectrum.com to find dates and times of available webinars

26th Annual International Spectrum
MultiValue Conference and Exhibition



Highlights *from* Spectrum



We came to Spectrum this year in the hopes of getting a better understanding of the some of the vendor production in the MultiValue industry.

It had been some time since we attended Spectrum (12 years). We found it very helpful in discussing the product offerings face to face.

— JAMES ROGALSKI
Odyssey America Reinsurance Corp

The longest running computer trade show in the United States, the International Spectrum MultiValue Conference and Exhibition, held its 26th annual conference in Long Beach, California March 6th through the 9th, 2007.

Although the format was much the same as last year, Nathan Rector's vision of the direction of International Spectrum was visible in the additions to this year's content.

All of the database vendors were there, regardless of size, from the largest to the not-yet-large. Of course, they had their booths and exhibits, the very visible part of their participation. In addition to being opportunities to prospect for new customers, these vendor booths quickly become meeting places for the vendor's existing customers. For many customers, this is a golden opportunity to meet your vendor representatives face-to-face, ask

Continues on page 36

Highlights **'07** *from* **Spectrum**

Continued from page 37

specific questions, find out their future plans for product enhancements, and see demonstrations of the capabilities and new functionality of the latest release. (For some folks, make that the latest three releases.)



The Exhibit Hall is a major source of information...

But the information does not move in only one direction. One attendee's goal might be to find the one vendor representative that can answer the question, "When will a SNOBOL to MultiValue data API be released, and what will be the licensing structure?" (Keep the "SNOBOL's chance" jokes to yourselves, please.) But another attendee might feel a need to make an impassioned plea to have a particular technical problem



The sessions and exhibition hall are not the only places where information flows. The sponsored MultiValue Breakfasts with speakers are also a big hit.

escalated. So the vendors have the opportunity to hear directly from the people using their products.

The booth also becomes an oasis of information from fellow users of that particular product, and it is common to hear users talking among themselves exchanging descriptions of solutions they have found to a tricky programming problem.

The tool vendors are always well represented. Drowning in requests for special reports, with color charts, viewable in a web browser? Several of the vendors would love to describe their solutions and give you a demonstration of their tool's abilities.

Has your boss informed you that it is pronounced "dot Net," not "dot Nyet," and it is now a requirement? There are

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several options to explore within steps. Business Intelligence, dashboards, presentation tools, etc. that understand the MultiValue data structures? No problem; walk over to the next aisle with us. We'll make the introductions.

Of course, there's also the "swag," which Wikipedia defines as

"In popular culture, the term swag now usually refers to promotional items or gifts that are given away by companies or organizations."

Whether looking to delight your children by taking home tote bags or action figures or looking to torment your children by sending microprocessor stuffed balls that flash and make shrill noises home with your grandchildren, there a number of items that add to the fun.

(Oh, come on. Admit it. First thing you did was grab your Spectrum tote bag [thanks Ladybridge], lanyard [thanks Northgate], pads and pens [thanks jBASE], and made the rounds, didn't you?)

But another thing that is great about our Vendors is they do not just set up a booth, demonstrate products, and give away swag. In addition to the information exchange already mentioned, the 25 vendors were an integral part of the sessions content as well. Giving presentations on new features, case studies and success stories, product "road maps" of upcoming releases, their sessions were well attended. In several cases, there was standing room only.

Sessions. Now those do present a challenge (pun not intended). With 70 different sessions to select from, there is something for everyone, sometimes more than enough. We are aware of some companies that send several people with different session schedules so that they collectively gather a wide variety of knowledge to bring home, pool, and share with their colleagues. Now that's an indication of how much knowledge there is to partake from.



... and, of course, the center for receptions and socializing.

This was my second Spectrum, however RAM has participated for many years. This year we came looking for U2 information. Transaction logging and high availability, U2 backup solutions, System Builder, and U2 Web solutions—all of which had sessions within the conference schedule! We were able to bring back information to help us decide which direction we should go with Web development.

I attended Steve O'Neal's Transaction Logging and High Availability session, and this morning we started Transaction Logging in Universe.

I also received my IBM Certification for UniVerse 10.1 Administrator. Thank you for arranging the free testing at the conference.

The U2 sessions were the most informative to us. Of course there are speakers like Kevin King and Lee Burnstein who are just worth attending no matter what the topic.

— TIM PELESKI
RAM Mutual Insurance Company

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So we tried to make it even better.

One of Spectrum's goals is to increase the educational value of our conferences, magazines, newsletters, and the new Spectrum University webinar courses. Of course, in addition to the vendor sessions, we had a wide range of technical presentations. Then, we added sessions with a business knowledge and project management orientation. We want to provide you not only with product and technical knowledge that helps you use MultiValue better and in a wider arena, but also business knowledge, software engineering techniques, and project management skills that help you and your staff grow as your business grows. Just a few examples were the sessions "Programming Inventory for MultiValue Professionals," "Programming With Style," "Electronic Medical Records—Opportunities and Pitfalls," "Estimating Projects," and others.



Lee Burnstein (a popular instructor with Spectrum University) conducts a technical session.

Highlights *from* Spectrum

Continued from page 39

But a conference is not just sessions and exhibits. The networking is also important. We're not talking about the exchange of electrons form of networking (although depending on the humidity and how far you walk across the carpet to shake someone's hand, that may also be involved). We refer to the social events that our sponsors make possible that allow you to just mingle with vendors, speakers, and other attendees to exchange thoughts, ideas, renew acquaintances, and make new ones.

This year's socials included the Welcome Reception hosted by Ashwood Computers, the Ice Cream Social pro-



New to the conference agenda were a series of business-oriented sessions such as this one conducted by Charles Barouch, author of Spectrum Magazine's "Business for Programmers" series.

vided by InterSystems, and the Multi-Value Breakfasts courtesy of Raining Data and Entrinsik. And, caffeine addicts that most computer folks are,



... demonstrations of a wide range of products that can help you increase the value of your investment ...

our thanks to Revelation for the day-long access to Real Coffee and full-leaf teas in net tea bags (not just fannings wrapped in paper—hey! We notice these details).

So from all of us—Nathan, the staff of International Spectrum, our vendors, authors, and instructors—Thank You. We look forward to seeing you at the 27th Annual International Spectrum Conference and Exhibition in 2008!

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FINDING THE Value of Training

BY SHANNON STOLTZ

Training is an investment. Not a tangible investment like information technology, but nonetheless, an investment. It is an investment in the future of your company, in your department, and in your employees. The trick is finding the value of the training investment in a tangible, quantifiable manner.

What is training?

First, what is your perception of training? What is training? For some, “training” brings up government regulations for discrimination and cultural diversity training. For others, the word training conjures up negativity like “expensive,” “boring,” and “unproductive.” Some of us think of training with glee, an opportunity to grow and learn.

Simply speaking, training is any opportunity to improve skills and knowledge, an opportunity to learn. This magazine, *International Spectrum*, is a training tool in itself. Albeit a free one, but education, learning, and skill building can come from reading its pages. Training also comes in the form of informal gatherings of programmers sharing knowledge and ideas, brown bag lunch sessions, user group meetings, webinars such as those offered from *International Spectrum* or others, customized on-site training from database and tools vendors, off-site training or “boot camps” from your database providers, and conferences and trade shows like the *International Spectrum* conference or your vertical market conferences. Even mentoring programs, either internally-based or from vendors, provide a training component.

For the IT professional, training encompasses more than just technical topics, but also interpersonal commu-

nication, leadership, business analysis, project management, customer service, and even conflict management. Why? Because training improves the bottom line—if it is provided in a focused, results-oriented manner.

Focusing your Training Efforts

Training costs can add up. So how do you ensure you are providing the right training for your employees (or yourself)? By providing training that increases the business’ ability to grow, adapt, and change in its marketplace and grows the employee’s skills in a manner that enables and equips them to perform well, you can increase the effectiveness of your training dollars.

Choose training opportunities that allow your employees (or yourself) to grow in knowledge and skills that further the business. If you know that RFID is in your company’s future, ensure that your employees have had the opportunity to read about or learn about RFID technology and the business impacts of RFID. If your company is looking at international growth, then your technology team should understand the technological impacts of international commerce and infrastructure.

For most companies, cutting costs and boosting revenues are important goals. Your employees should be trained to

look for opportunities to increase productivity, lower technology related costs, and be on the look out for tools that will improve efficiency and/or quality. If you are in the software business, programmers need to understand the importance of quality and testing; programming bugs (or undesirable features) cost time and money in support, programming patches, and customer service relations.

Another approach is to build employee skills based on performance and personal development needs and interests. Employees who are engaged in the training process and are growing also tend to be engaged in the business process and look for ways to enhance the business. By growing your employee skills, you create a more flexible, adaptable workforce to meet business needs and a more satisfied workforce.

Identifying the Value

When looking at training’s potential value or measuring its effectiveness, ask yourself, “Will the training...

- be used in the workplace?”
- reduce costs?”
- improve productivity?”
- improve business processes?”
- improve system, network, application, or database performance?”
- increase the quality of our service, application, or business?”
- reduce wasted assets, time, or opportunities?”
- expand our ability to produce new products or services?”
- give us more flexibility to adapt, produce, or develop?”
- increase employee or team productivity?”
- allow us to maximize the use of a product or service we have now or will have in the near future?”
- improve our internal or external customer satisfaction?”
- improve our employee satisfaction?”
- cut our cycle time or improve our schedule performance?”
- be useful to others in our organization?”

Continues on page 46

For me, it's difficult to recall the exact moment when desktop computing started disappearing around the country. It wasn't sudden, like the explosive deployment of iPods. No, desktops seemingly began to disappear off the desks first of executives, then from management and technical. I admit, I haven't personally used a desktop extensively in over 15 years, but I always considered my nomadic life to be an exception.

Did it happen the day when the country began expanding its wireless network? Or was it a slow fade, caused more by the declining cost of the laptop, notebook, and sub-notebook? Or, perhaps, it was the implementation of many functions into portable devices like the cell phone, Treo, Blackberry, and other types of PDA. Whatever the cause, there seems little doubt that the desktop, once an office and living room staple, is fast turning into a back office gadget.

I think the trend will only continue. Consumer use of computers seems to be driving much of the change. One recent survey last fall found that of incoming freshman arriving on campus with computers, only 3% had desktop computers. That is a big drop from the preceding year when 6% brought the big machines with them, and from the year before that when 12% freshmen came laden with desktops. In fact, merely five years ago, it was practically 50-50 whether or not a student would have a bulky desktop or a lithe laptop. Amazingly, then, we now see 33 laptop users for every freshman with a desktop machine.

Interestingly and noticeably, Macs are on the comeback. At its worst, in 2000, Mac computers were an awfully hard sell. Apparently, at that same college, only about one of 35 students owned one. Since the Apple's resurgence, about one in five students has a Mac. Will we see this effect make its way in the office marketplace?

And those iPods? Two of three freshman seem to be armed with iPods.

Whatever the cause, there seems little doubt that the desktop, once an office and living room staple, is fast turning into a back office gadget.

Speaking of education, a few months ago I came across a website (turnitin.com) that is one of several that are used by institutions across the country. Apparently, there are students who submit term papers that they did not write themselves. Or, with sections that had been lifted entirely from external documents. Moreover, they also are using term papers that had been previously used.

The amazing collective power of the web and the data analysis available has encouraged faculty across the nation to use the tools available to discourage outright plagiarism. I recall about five years ago having breakfast with a faculty member, at a local prestigious Pasadena university no less, who said that he used Internet search engines to see if his students were plagiarizing.

He would look for questionable statements in the submitted document and then type those phrases into his browser. Perusing the results, he would sometimes stumble upon similar documents, upon which he would decide if sufficient citation was given.

To me, the formation of web companies that facilitate such searches makes perfect sense. The database of documents out there is huge and if there are ways of organizing them, then what better way than through the Internet?

Speaking of organization, if you haven't played with Gmail, I think that you're missing out. It is quite unusual in that it doesn't use folders and subfolders.

Egads!

In my mind, I couldn't imagine how I could sort through hundreds of weekly e-mails without filtering them into appropriate folders. But Google mail offers something different. You can attach tags or labels to any e-mail. And you can attach as many tags and labels to that e-mail as you wish.

Hmmm. So MultiValue!

So, I have a label for every major product we sell and attach / filter that to incoming e-mails. I have labels for prospects and for consulting clients. I also have them for the personal e-mail. But the best part is that I don't have to sit and decide which folder someone should be filed under because I just add as many labels as I want.

Maybe Google is a MultiValue shop. is



MELVIN M. SORIANO works at Eagle Rock Information Systems (ERIS), an Internet Application Service Provider and WebWizard/MultiValue Developer. ERIS has deployed enterprise-wide solutions on most MultiValue platforms and operating systems. HTM-Mel can be contacted at mel@eriscorp.com and visited at www.eriscorp.com. You can always call him directly at ERIS's Pasadena, Calif., offices: (626) 535-9658.

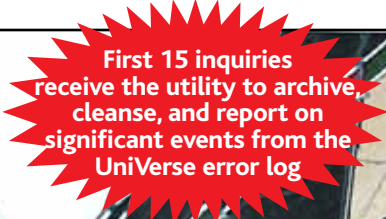
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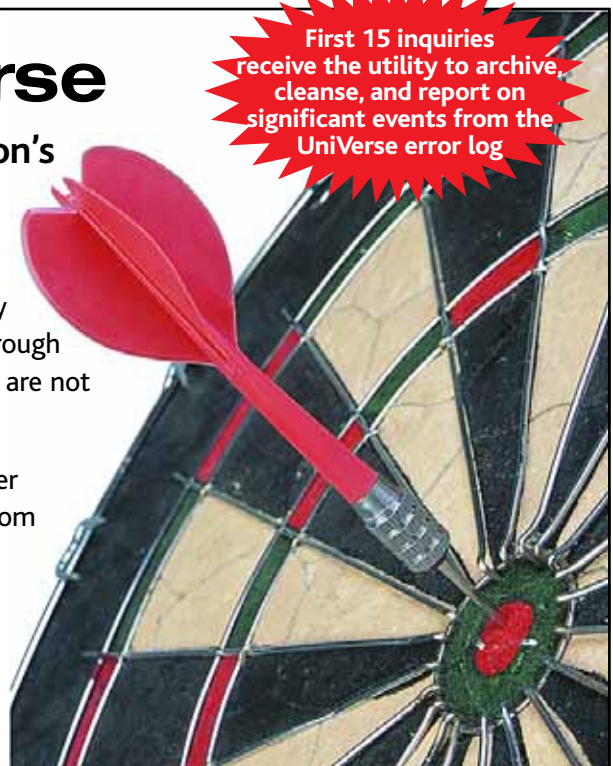
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Order Cycle

Continued from page 31

have a held price, understand all the costs, and still not be bound to paying and receiving as yet. For example, a customer of mine recently required me to purchase some additional insurance before starting work for them. Now, I don't want to buy the insurance until they sign the contract, but I must know exactly what it will cost. My agent wrote a quote.

While we've all gotten quotes or estimates before, we often overlook them in the order cycle when we write systems. Most computer systems treat quotes like orders and then build elaborate logic to protect accounts payable from trying to collect on them. It is better, in my opinion, to keep them separate.

If we are going to keep quote separate from orders, we need to extend the

concept and keep prospects separate from customers. As with everything, there are trade offs. Keeping everything separate means that you need a set of conversion processes: Quote-To-Order and Prospect-to-Customer. You can make the conversions simpler by keeping the file structures identical.

We need to remember that all the secondary functions, like product price, are handled correctly. We also have to decide if quotations will reserve real stock. The process of reserving stock without a finalized order is called allocation. And the use of allocation implies the need to create a de-allocation method for returning allocated stock to general availability.

The biggest challenge comes from reporting. If a prospect has an identifier of 1235 and they convert to customer identifier 1730, you need to provide a way for reporting to work with

both identities. Typically, I add the prospect ID and the conversion date to the Customer file in fields which I leave blank in the Prospect file. The same idea applies to quotes. While this does not completely solve the reporting issue, it give you the hooks you will need in order to connect the two identities.

Quotation, service sales, and product rentals, they all represent real world cases which have to be considered when we develop order cycle programs. As with all programming, knowing the process the way a user knows it—that's where we find the best value. is



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|--|---------------------|----------|----------|-----------|-----------|
| 1 | PD43VP6C2000-68794 | \$399.00 | 1 | \$399.00 | 182 |
| Part Number: 68794 | | Update | Delete | | |
| Description: Ruggedized PicoDot, Convergent Laser | | | | | |
| 2 | PD43VP6LLP W/30' | \$345.00 | 1 | \$345.00 | 182 |
| Part Number: 68528 | | Update | Delete | | |
| Description: Ruggedized PicoDot, Polarized Retin Laser | | | | | |
| 3 | | \$0.00 | | \$0.00 | YES |

Industry Standard MultiValue Reporting

Continued from page 13

their parent item. The Direct DAS allowed you to map a single view of a table that preserved the relationships of multivalued data.

You still had to determine these relationships on your own, because in most real-world databases the dictionaries didn't give you enough information to figure it out. Still, this approach succeeded in lowering the bar and allowed for much faster performance.

ADO.NET Continues the Tradition
Finally, with the advent of ADO.NET in .NET 1.0, Microsoft released a technology in which they replaced the concept of a Hierarchical Recordset with the concept of a DataSet in which nested data would be retained as nested XML, but could be viewed as separate tables.

With this approach you had the same capabilities in a much more flexible environment, but you still had to map your data.

JavaAdapter takes it to Java
FusionWare and several of their customers saw the need for a Java-based client solution that allowed Java developers to reap the benefits of the Direct DAS. With this in mind, FusionWare developed the JavaAdapter, which represents the non-relational data using XML. This allows you to use the W3C DOM and XPath standards to access the output of the FusionWare Direct DAS.

What about Dictionaries?

There was one limitation in the way that the Direct DAS mapping worked: you had to map the raw data. Dictionaries were not really accessible.

Almost every MultiValue customer would tell you that a huge portion of their critical and most valuable intel-

lectual property is in their MultiValue Dictionaries.

FusionWare has now released a new set of technologies that include a breakthrough technology called DictionaryCall. DictionaryCall allows you to issue a statement to the Direct DAS that includes a MultiValue command that generates a select list (possibly a SSELECT or GET-LIST, but it could also be a BASIC program, PROC or Paragraph.) You also include a list of dictionaries. In the simple case, the output of the dictionaries is returned as text, but you can decorate the dictionary names with metadata specifying the data type in which to return the data. You can start by running a preview of, for example, 100 rows of output, and see what is returned. Then, you can add the data type information and run the query again. You can repeat this exercise in an interactive manner until you are happy with the results. This syntax is available to OLE DB, ADO.NET and JavaAdapter clients.

What Does This Mean?
Data Warehousing

FusionWare mv2SQL can be used to transfer data, based on your dictionaries, from your MultiValue system directly to SQL Server, Oracle, DB2 or MySQL. No mapping required.

Reporting Solutions

A customer who wants to use Crystal Reports, Cognos, or Microsoft Reporting Services can now use their dictionaries to import the raw data into state-of-the-art reporting solutions from industry leaders.

Web Development

Customers building web sites can retrieve data from their systems based on their Dictionaries without having to map anything. All FusionWare middleware strategies have included a stored procedure mechanism allowing you to call a Basic program to do the updates

for you. FusionWare allows you to build these web solutions using Microsoft Visual Studio (version 6.0 and .NET versions 1.1 and 2.0), JDeveloper, JCreator, NetBeans, JBuilder, WebSphere Developer Studio and many other platforms. Customers can select Microsoft Internet Information Server, Apache, Domino, and other web servers.

Rich Client Development

Customers building rich clients can also retrieve data from their systems based on their dictionaries without mapping. You can do this development using Microsoft Visual Studio (version 6.0 and .NET versions 1.1 and 2.0), JDeveloper, JCreator, NetBeans, JBuilder, WebSphere Developer Studio and many other platforms.

And We Support SSL!

For those customers who need to process sensitive data over a network, we now support SSL connectivity to MultiValue systems where a Secure Telnet listener can be installed or where a secure wrapper can be placed around the plain text telnet listener.

In Summary

Securing sensitive data that is accessed quickly and easily with mainstream technologies is necessary to be competitive in today's market place. With some careful thought and planning, and especially in the light of new product offerings from FusionWare Corporation, it is very possible to leverage your MultiValue business data with newer technologies.

The FusionWare Data Access Product Group is built on robust proven technology to deliver MultiValue data to Windows and Java environments. [is](#)

**FOR MORE INFORMATION,
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| COMPANY | | |
| ADDRESS | | |
| CITY | STATE | ZIP |
| PHONE | FAX | |
| E-MAIL | WEB SITE | |
| SIGNATURE | DATE | |

(All questions must be answered. Incomplete forms will not be processed. Complimentary subscriptions are limited to U.S. addresses.)

1. What is your job function/title?

- | | |
|---|---|
| <input type="checkbox"/> Principal/Owner | <input type="checkbox"/> Sales/Marketing |
| <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 |

IS 4/07

Finding the Value of Training Continued from page 41

Factor in the value of your answers and compare it to the cost of the training. One training session may provide the insight or knowledge needed to save hours of labor each week. That cost savings may pay for the training.

Maximizing your Training Investment
One way to cut the cost of training is to leverage it. Teleseminars, webinars, and online training seminars usually allow you to pay one fee for the entire site, allowing the training cost to be split across as many employees as you can fit in the same room in front of the computer and a speaker phone. The same leveraging concept can be applied other training venues as well.

If a training session would be helpful to more than one employee, it may be more cost-effective to arrange an on-site training session, bringing the trainer to you. For employees who participate in off-site training sessions, including conferences and trade shows, arrange for the employee to prepare a series of short (one hour or less) sessions with their co-workers to share the knowledge. Arrange for optional brown-bag training sessions at lunch times, where an employee shares a skill, or tips and tricks with others. This technique not only spreads the knowledge, but also builds your employee's presentation and communication skills as well.

Encourage your senior staff members to share their knowledge with others, creating mentoring opportunities and enhancing your employees' skills. If you have a project but don't have the skill set on hand to do it, consider creating a mentoring relationships between consultants and your staff, so the project gets done and your staff gain new skills for future projects.

The true value of training investment comes when the knowledge and skills compound and grow among your staff. After all, a company's intellectual capital is often what gives it the competitive advantage it needs to succeed. is

I Will Try Not To Sing Out Of Key

BY CLIFTON OLIVER



A FEW WEEKS AGO, I was staying in a hotel in a tourist-oriented town. This particular hotel was not geared towards the business traveler as most hotels I stay at are. Instead of the usual array of suits, slacks and blazers, and golf attire you usually see while out on the road for business, instead, I was treated to a gaggle of shorts, flip-flops, gaudy shirts, and hooting children. That, in and of itself, is enough to disturb one's sense of balance and harmony.

This particular evening was the end of a good, intense, productive, but long and tiring day. I was beat to, well, a frazzle. I did not feel like going out to a restaurant, waiting for a table, and spending two and a half hours just to take on fuel. Room service sounded appealing in principle, but I have an aversion to cold, congealed, soggy food and being billed a 20% "service" fee for the privilege. So I made the somewhat ill-advised decision to go down to the hotel restaurant to eat. I figured that at least the food would still be warm when delivered. One should be careful about making assumptions.

Most business-oriented hotels will have a restaurant and a separate lounge, aka "the bar." This "lounge," a dark, tropical themed room with some silly topical name like the Bongo Bongo Lounge, or some such thing, was right next to the restaurant, I mean, the café. Sound has the odd property of not respecting imaginary, open air boundaries, and it carries. This did not bode well.

I settle in, look over the menu, and order something that I think might be safe—

the Kobe Burger. Now look, we all know it's just a name. There is no way a place like this is going to be serving Kobe beef. Although if they did, they would probably do something vile like grind it up, fry it, and use it as a hamburger. But I guarantee you, at prices that can exceed \$300 per pound, Kobe beef this burger is not—at least not at \$9.95 including fries and a dill pickle. (I told you this was not a high class hotel.) But I don't begrudge someone their marketing ploy. After all, "Kobe Burger" has a better ring to it than "Commercial 60% Lean Just Above Pet Food Burger."

I had just pried off a bite of my Whatever Burger when the hairs on the back of my neck stood on end. The sound emanating from the Tiki Room Bar (or whatever it was called) sounded like a block of ice being carved with a band saw. Or a poor cat having its fur plucked out with tweezers. Or an out of tune bagpipe, though it is a rare ear that can tell the difference between an out of tune bagpipe and one that is in tune. It was the summoning of demons, the calling of chaos, the invocation of idiocy, it was...

...Karaoke Night.

Please understand, I am one of those cursed with perfect pitch. I can't listen to the Mamas and the Papas "Monday, Monday" without the fillings in my teeth hurting, the singers are so out of key. And my fillings aren't even metal. As someone classically trained and having opera experience (in youth), karaoke just makes me want to shove an ice pick

through my ear drums. In fact, hearing it has much the same painful effect.

In an effort to sublimate my agony, or at least to get an 800 to 1,000 word column out of it, I found myself mulling on the characteristics of most karaoke singers:

They don't have much talent.

They are unaware that they don't have much talent.

They make it through the song, but they are out of tune most of the time. In other words, they "kind of" get the job done, but not very well.

They have no formal training.

They're not interested in getting any formal training.

Their audience can't tell the difference between good singing and bad, so they applaud anyway.

It then occurred to me that this has a lot in common with a variety of programmers I have come in contact with over the years. They have no training and are not interested in getting any, or in reading about new techniques within their field. When they need to do a program, they just jump in with little planning (or practice) and kind of hack around until the thing kind of works—most of the time, except it misses a few "notes" every so often. And they carry it off with such bravado, their managers, not being programmers and unable to judge technical skills, applaud. And so, my friends, I give you a new IT personnel classification:

The Karaoke Programmer. ■



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