

INSIDE! SPECTRUM LOOKS AHEAD TO 2007

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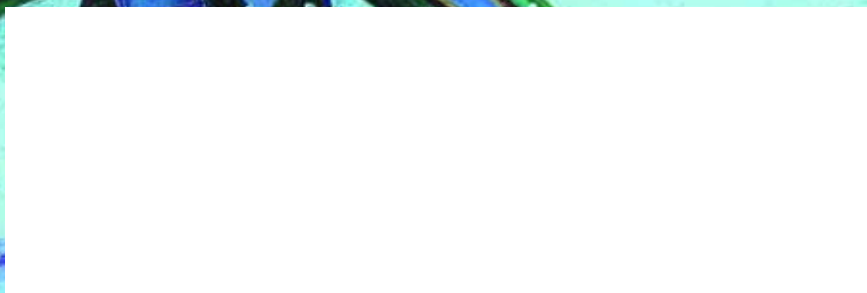
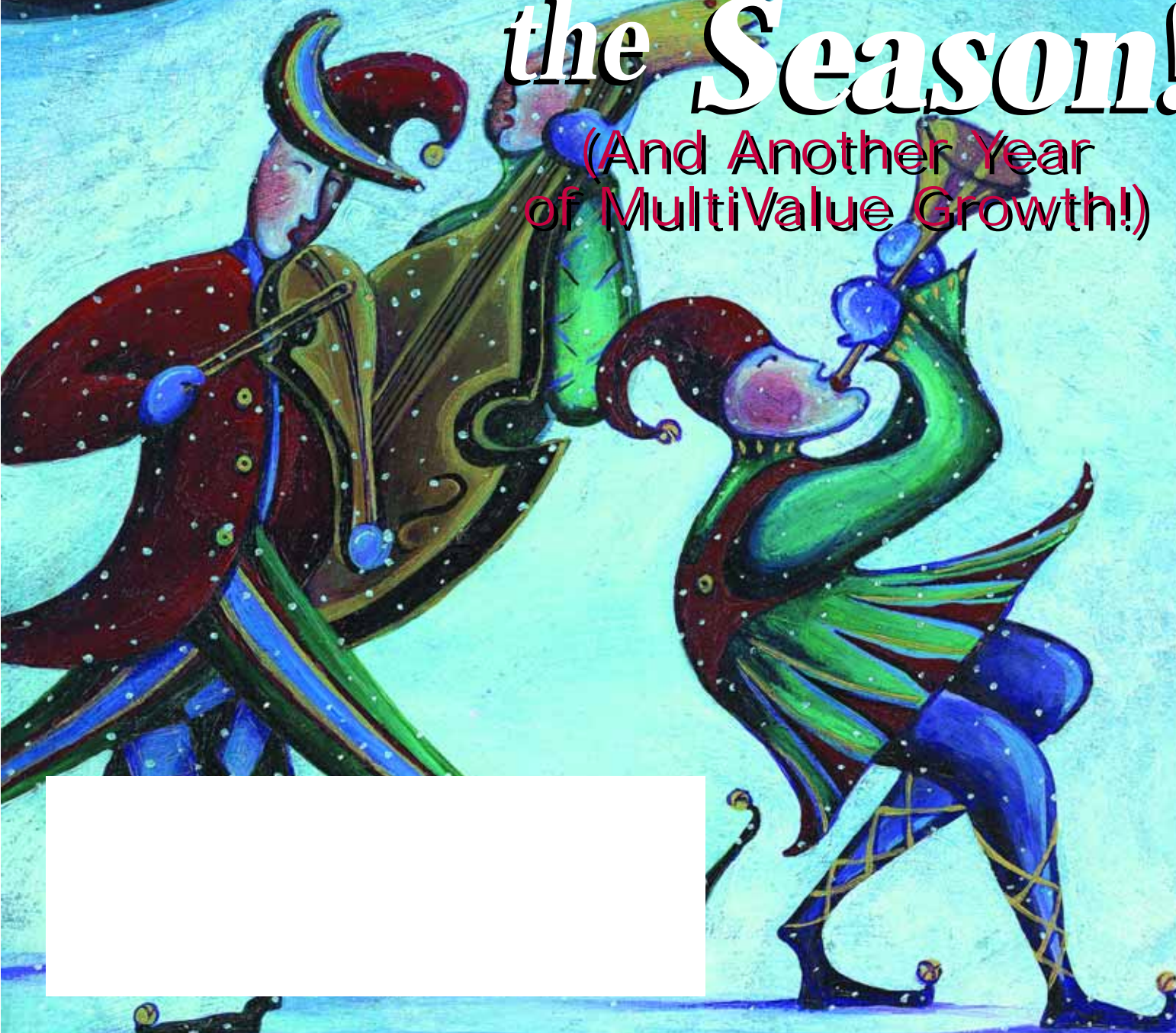
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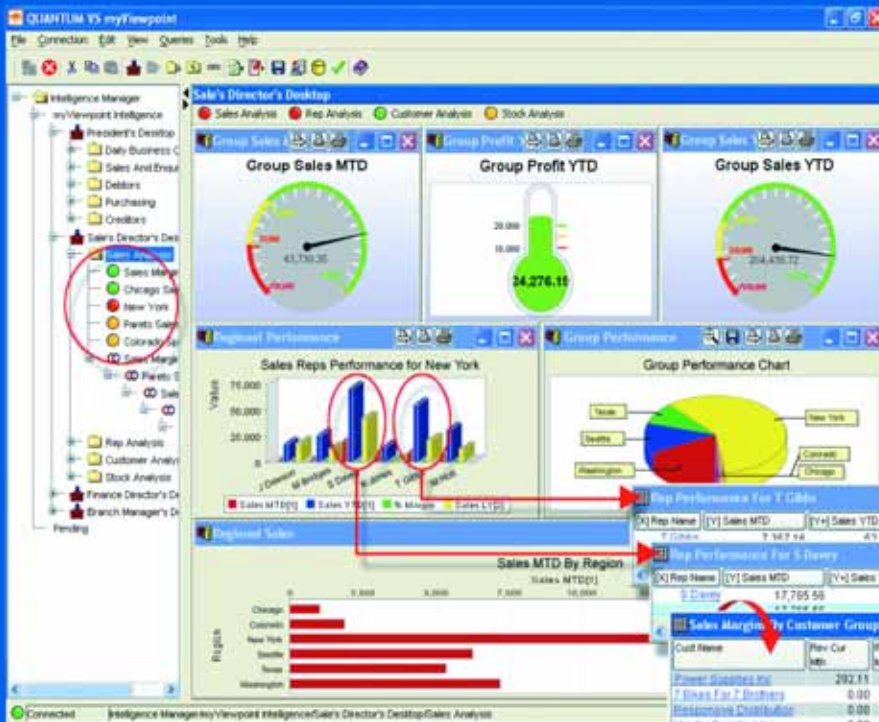
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# Celebrate the Season!

(And Another Year of MultiValue Growth!)



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[ FROM THE INSIDE ]

INTERNATIONAL SPECTRUM

NOVEMBER/DECEMBER 2006

Well, it's the end of the year, and as I look back over my first year running International Spectrum, it has gone very well.

The regional Conferences in Cincinnati, Ohio; Seattle, Washington; Iselin, New Jersey; and Sydney, Australia went very well. I've received a lot of positive feedback from the users and vendors that attended the conferences. I'd like to thank Ashwood Computer Company, Meier Business Systems, Seattle Users Group, and the U2 User Group for their sponsorships and support of these regional events.

Also, we have had a lot of good content added to the International Spectrum Magazine, both in informative articles, as well as Case Studies and Success stories. Cliff, our editor, has done an outstanding job of finding new authors and fulfilling my demands for the type of content I wanted to add to the magazine. If he hasn't contacted you yet, don't worry; he will.

The e-Xtra newsletter is has been a huge success as well. If you do not already receive the newsletter, you are likely missing out on a lot of industry information. Many of the announcements in the newsletter do make it into the magazine, but there is a lot of time critical content that you can only find in the e-Xtra newsletter. These include job postings, on-line or local demos, and User Group meetings.

We have also had a lot of success with Webinars this year. There have been several live production demos, as well as continuing education Webinars on Excel, XML, and SQL.

Now it's time to prepare for next year. With the International Spectrum 2007 Conference and Exposition coming up in March, the MultiValue Vendors have a lot to show the market. There are a lot of new tools and topics being planned for the March conference and many exciting new products and updates.

I will also be continuing to work towards my "big picture" for International Spectrum and the MultiValue market. Some of the things you will start seeing are hard copies of the magazine being distributed in Australia and the United Kingdom. You will continue to see success stories and case studies show up in the magazine, as well as more articles written by end users.

One of the new things for 2007 is International Spectrum University. This is an expansion of the Webinars we have been doing. Spectrum University will provide multi-week in-depth training on topics that your staff may need in order to maintain or advance your existing systems.

2007 will be just as exciting and busy as 2006 was. We will continue to provide great content and value to the MultiValue market, as well as increasing the support to VARs, consultants, and end users.

- Nathan Rector, President, International Spectrum - nathan@intl-spectrum.com



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# IM BY MEL SORIANO what I am

## *(And that's all that I Yam)*

**N**ow that Popeye rests in peace, for even the great Sailor-man evidently cannot withstand an onslaught of California E-coli, we can move on to other odd events of the past few weeks. From a technical perspective, nothing could overtake the likes of rancid spinach than a whiff of spying, corporate malfeasance, and board room conspiracies. Well, wait, there was one other scandal, because we also got not a mere whiff but a malodorous stench of sex, minors, and cover-up in Washington, DC. Good heavens, you just can't make this stuff up.

As the politicians, pundits, and multiple investigations churn away in our nation's capital, a basic technological issue was raised that ought to be at the top of our minds. At this time of year, with holidays reminding people that they do in fact have personal time coming to them, it's rather fitting that the concept of personal privacy be raised, although coming from the most unlikely of places.

For the controversies in California and Washington DC were caught or at least

—  
Many seem utterly oblivious to the fact that instant messaging (IM) can be used against them or their companies.  
—

abetted because of technological and communication advancements.

Most people and companies are already aware that e-mail is not necessarily private. In fact, if transmitted from a business location or on a business device or while traveling primarily for business reasons, that e-mail is not likely to be private whatsoever. That e-mail can be subpoenaed and introduced in court as evidence.

Many businesses have responded to this liability in several standard ways. They back up and audit e-mail transactions. Businesses often require staff

to include footers that explicitly state that any comments in the e-mail are personal and not representative of the business itself. Some firms label all e-mails confidential in the headers and footers, with the express notice that no part of the e-mail can be shared without prior approval of the company. And people know that they need to self-censor their e-mails, to check for appropriateness, and to be sensitized to the problems of misinterpretation of emotional content.

*Continues on page 44*

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# 2007 International Spectrum

BY SHANNON STOLTZ

"The first International Spectrum Conference and Exposition I attended was in 1988. I was there to learn how to use PICK Basic —the introductory stuff. I was there to learn how to program the MultiValue database as well as review some of the tools available. I continued going to the show after that for the classes — for the training — and for the information. Basically, I was going to the conference to see how to accomplish things and see how others were doing things," said Nathan Rector, President of International Spectrum.

Nathan Rector is no stranger to the International Spectrum conference, having attended since 1988, first as a programmer, then consultant, and in recent years as a trainer and speaker. But this year will be a first. The 2007 International Spectrum Conference and Exposition will be the first in which he is responsible for putting the conference together. With only a couple more months left until the 2007 International Spectrum Conference, we took the opportunity to pick Nathan's brain about what to expect.



**SPECTRUM:** *Let's start at the beginning. When and where is the 2007 International Spectrum Conference and Exposition?*

**NR:** The conference is March 6 - 9, 2007 at the Hilton Long Beach Hotel and Executive Meeting Center in Long Beach, California.

**SPECTRUM:** *So, who is the conference really geared for? Who benefits from attending?*

**NR:** The conference is a tools and training venue for the MultiValue market. It's designed to show the latest tools and technologies that will enhance or improve your applications. The training classes provide skill building opportunities on MultiValue related topics including .NET, web integration, reporting, business intelligence, administration, and management.

The conference is geared for programmers and IT Managers who want to enhance their skills, see what others

*Continues on page 10*





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# 2007 International Spectrum

Continued from page 8



are doing, and look the new tools and technologies available.

**SPECTRUM:** *International Spectrum puts on regional conferences and the “main” conference. What is the difference between this conference and regional conferences?*

**NR:** Regional conferences are designed to take a portion of previous years “main” conferences and bring that content to the regional areas. Regionals are two days, whereas the main conference is four days. The main conference has a wider range of vendors, a wider range of tools to select from, more training content, and more in-depth style classes. There are classes available at the main conference that are not available at regional conferences. The exhibits are open for three days at the main conference versus only one night at regional conferences, so there’s more opportunity to learn about the new tools and technologies. And, more people attend the main conference than regional conferences, so the networking opportunities are greater, and there are more

opportunities to learn what technologies others are using and how they are implementing them.

**SPECTRUM:** *So, what can we expect at the 2007 International Spectrum Conference?*

**NR:** There’s the exhibitor hall where you can look at the new tools and technologies available, plus training classes and management classes. We’ll be doing the state of the industry address and providing opportunities for networking at the various breaks and parties. And of course free food—free breakfasts and lunches.

**SPECTRUM:** *What or who can we expect in the exhibitor hall?*

**NR:** You’ll see all the big name database providers including IBM, Raining Data, InterSystems, Revelation, jBASE, Northgate, ViaSystems, and ONgroup. You’ll be able to look at reporting tools from MITS, ViaSystems, Entrinsik, and Eagle Rock Information Systems. There will be .NET tools, which includes Raining Data, IBM, FusionWare, and BlueFinity; Business Intelligence and data mining tools from ViaSystems and MITS; SQL and ODBC tools from IBM, Raining Data, and FusionWare. Terminal Emulator vendors will be there and industry VARS.

Everyday there is something going on in the exhibit hall, like an ice cream social or something. We do a raffle and raffle off prizes donated by the vendors. We’re not sure yet what will be included in the raffle, but last year one of the vendors gave away a server.

**SPECTRUM:** *What kind of training classes are you planning?*

The conference is a tools and training venue for the MultiValue market. It’s designed to show the latest tools and technologies that will enhance or improve your applications.

**NR:** There will be training content for both programmers and managers. General technical content will be available, including topics such as getting your data into Excel, SQL, connecting with ODBC, RFID, and administration classes for the various MultiValue platforms. In addition, we’re planning more management related classes, such as project estimating.

**SPECTRUM:** *Would someone who has been to the conference in the past gain new information or insights from the 2007 International Spectrum Conference?*

Continues on page 12



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- 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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# 2007 International Spectrum

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**NR:** Yes. Every year there is new content and new technologies. New tools are being displayed; new strategies are discussed.

**SPECTRUM:** *What opportunities are there for networking?*

**NR:** Most networking takes place during the breakfasts and lunches, before and after classes, and at the after-hours parties. People have the opportunity to talk with each other, learn how others

are doing things, learn the solutions others are using, and what technologies others are interested in or implementing.

**SPECTRUM:** *So, what are your top tips for getting the most out of the conference?*

**NR:** First, if you can, bring at least two people from your business to the conference. Classes often compete, that is, multiple classes run at the same time.

With two of you, one can attend one class while the other attends another class and then later you can share the information.

Second, go through the exhibit hall a couple times. In the past, I've missed tools that would have saved me time because I only stopped at the booths I thought I was interested in. Later, in talking to someone, I'd learn about some tool that could solve a problem for me, but I had missed it in the exhibit hall because I didn't stop at that vendor's booth.

Third, take advantages of the last day's in-depth education or hands-on classes that delve further into the products and topics.

And last, if possible, stay at the hotel the show is at. It's easier to attend the after-hours functions and increases your opportunities to meet and learn from others in the industry. is

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# 4 GL Briefing — Viságe

BY CHARLES BAROUCH

**Stamina Software Pty Limited** was kind enough to loan us three of their staff for a virtual sit-down in a Skype chat room. Ross Ferris (Managing Director), John Whitbread (Manager of Visage Development), and Ryan Hafey (Windows Development Manager) had quite a lot to say.

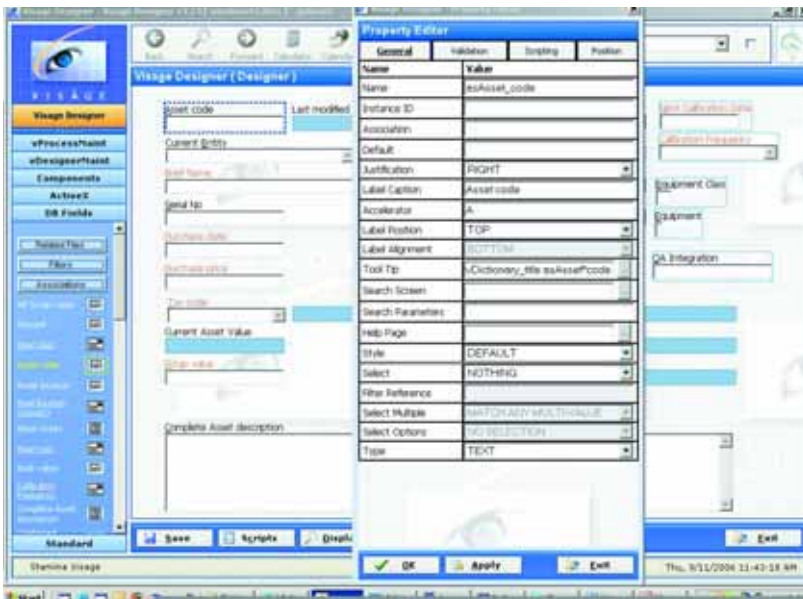
**SPECTRUM:** How did Stamina get started? What was the impetus?

**ROSS:** I kicked things off doing contract gigs and quickly got sick and tired of spending 60 hours or more a week just in commute time, so hung up the shingle in 1984 to develop our own software. The first thing we did was “fill in the gaps” within mvDBMS, so we developed SuperB—a B tree file handler for “real” indices. Whilst indexing is built into systems now, but back then it was “very useful.” Then we developed SKI—a set of routines for maintaining Soundex & Keyword Inversions. I believe both products are still in use today. Next we developed a 4GL tool, ZAPT, which was strictly green screen, and still used today. Then we finally started to develop applications! We still have our first client, a company called NoniB Fashions, which has grown from a

small three store operation to now having 200+ stores across Australia and New Zealand. We still have our second client, and third, and ... you get the picture. We still have our first employee (other than me). We develop long term relationships with people, both clients and our internal “team.”

**SPECTRUM:** *So your strategy has been “mind the gap” so to speak—look for the holes in MultiValue and write the software to smooth things out?*

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# 4 GL Briefing — Viságe

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**ROSS:** More than that. Our applications grew out from Fashion Retail to cover general wholesale/distribution. We did POS, Job Costing, General Accounting, Service, Jobbing, manufacturing. We even have some “interesting” developments in areas like bloodline management. And yes, we saw what MultiValue “lacked” and set about filling the gaps. Then we set about developing solutions for people, using the tools we had developed.

**SPECTRUM:** *Bloodline management?*

**ROSS:** [For] the Australian Stock Horse Society. We will be installing in another “breeding” organization in the new year.

**SPECTRUM:** *So, with Viságe as an extension of this ‘filling in’ process... What do you see as the holes it covers? Where do you see Visage as supplementing MultiValue and expanding it?*

**ROSS:** Back in 1994 we saw “the writing on the wall.” Windows 3.1 was capturing the imagination of people, and there was talk about the “new” Windows 95 system in the pipeline. So, we started the VISAGE (Visual Information System Application Generation Environment) project to remain “competitive.”

Originally this was going to be a “smart” terminal emulator that would allow us to create “widgets” on the screen. The initial development was done in VB (all 23 disks), but that never worked. We “discovered” Delphi (Real compiled language) for Win 95, and we actually got a product developed in Delphi 2, but the result was something that today would be called a “screen scrape.” Yes, we had graphical widgets, but it obviously looked like a “bolt on” over the top of an 80 x 24 workspace.

Whilst interviewing for one of the Delphi developer spots, one of the appli-

cants listened to what we were trying to do, and said, “Why not use HTML? It already does that stuff.” That started us down the course of leveraging internet technologies.

We also decided NOT to try and support “green screens” from our new development environment. It was a conscious decision to “break the ties.” At the same time, Viságe was always been seen as part of a “go forward” strategy. So it was important for us to be able to keep the green screens going, and add functionality incrementally to these applications.

**SPECTRUM:** *How does “go forward” jibe with “break the ties?”*

**JOHN:** One of the strengths of Viságe is the fact that you can run green-screen applications side by side with the Visage equivalents. We have clients where some users use the “new” screens, and others continue to use the “old” green screens. Features like our ability to support real READU record locking means that the two can happily co-exist, allowing people to change at their own rate. You can still use existing logic in subroutines from the Visage environment. You can even “run” green-screen applications as phantoms so that they use 100% of the existing logic if your programs are set up properly.

**ROSS:** We have tried to leverage EVERYTHING that people have by way of application assets and artifacts from the green-screen environment. This is especially true when it comes to the dictionary, which plays an active part in the development of a Viságe application. The dictionary has obviously been extended to make development as “easy” as possible.

**SPECTRUM:** *As a not-so-Multi-Value guy, Ryan, what’s your take on all this?*

**RYAN:** On the developer side of things, people actually work with an XML representation of the database, which is presented graphically. Simply dragging a dictionary element onto a screen or report links the field to the back end database. The designer was modeled after the best ideas and best Integrated Development Environments in the “windows” environment, so a developer coming into Viságe from a “mainstream” development environment will feel right at home. The designer just “feels” nice, and does a lot of “stuff” behind the scenes. You don’t need an intimate knowledge of MultiValue data structures, or even MultiValue Basic, because you can develop applications without having to write a single line of code. I’ve been here for six years now and have only ever written one MultiValue Basic program—but I’ve developed tons of Visage applications. If I get stuck, I can call one of the MultiValue guys to fill in the gaps.

**SPECTRUM:** *Does that put a big learning curve on the Multi-Value developers?*

**JOHN:** MultiValue developers feel equally at home in Viságe. They can use their knowledge of the data structures and back end programs, and using the dictionary extensions a lot of the code that traditionally had to be written, and enforced, by hand is now taken care of automatically by the dictionary. If a MultiValue developer can use a mouse, they can use Viságe, and it really makes developing fun. As people get more into it, the depth of the product, which is a function of our long development cycle, becomes apparent. We have had to deal with some “interesting” data structures over the years (like supporting “multivalued” up to 5 levels deep), or validations against multivalued lists or partial keys—you name it, we have probably already done it half a dozen different ways.

**SPECTRUM:** *What is the learning curve? How long from installation to productive use?*

**ROSS:** The development curve is very small, regardless of what direction you come into Visage from. Earlier this year we started two new graduates fresh out of University. They produced their first data entry screens on their first day, and were producing reports on day two. In this case, they started with existing dictionaries, but these can simply be imported from your existing files. It means that the “application experts” (the MultiValue guys) can concentrate on the “hard stuff” (not that anything is really that hard).

MultiValue developers usually have their first screens up within the first hour when we hold their hands, and that includes the installation time!

**SPECTRUM:** *Can you give us three good reasons to do a project in Visage?*

**ROSS:** It is hard to limit yourself to just three—depending on what you want to do, where you are starting from, then

various product strengths will come into play. For example, if you are converting an existing application, then the ability to do this at a controlled rate may be important. For a new “green fields” development then the speed at which you can roll things out, one of the traditional MultiValue strengths, comes into play. Put the time in getting the dictionary right, and the application will virtually write itself.

The fact that you have to write less code has massive implications over the lifetime of a project. Every 100 lines of code you DON'T have to write because you are using Visage equates to big savings over time, and the fact that we have an “active dictionary” means that application changes can be quick and nimble.

One of the strengths of Visage is the fact that you can run green-screen applications side by side with the Visage equivalents.

For deployed applications, then features like remote monitoring, integrated debugging, and patch management facilities mean more savings. For users, things like visual themes/skins, multiple menu types, customized keyboards and “right click” context menu access to facilities like search, enquiries, and maintenance mean that they are more productive. We have the “basics,” like multilingual support. We have the “impossible,” like the ability to use persistent locks in a non-persistent environment (and pessimistic locking for

*Continued on page 45*

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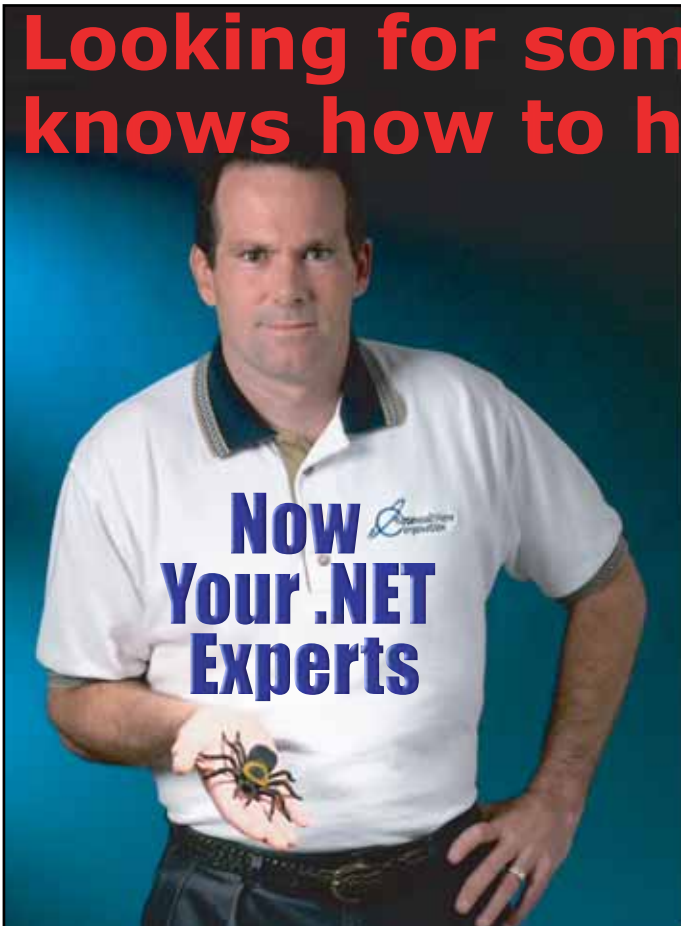
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# Order Cycle for Programmers (Part I)

BY CHARLES BAROUCH

## All Keyed Up

The Order Cycle used to be a straightforward sales and inventory function: Order, Pick, Pack, Ship. As with everything else in business and technology, the role has expanded and the lines have blurred. The Order Cycle has increasingly become a weird hybrid of Customer Service, Marketing, and Sales—can you say Customer Relationship Management? While you can still find rooms full of data entry clerks keying, heads down, from paper to green screen, those rooms are getting rarer. The concept of Order Entry is expanding into a dizzying array of options, all designed to lower the barriers between people with money and people with goods and services.

Many places that still maintain data entry rooms have now traded the paper orders of the past for telephones. Telemarketing is a big part of the new Order Entry landscape. Systems, like Telathena for example, are designed to walk the entry person through a branching script which allows them to stay on message while also being responsive to the customer on the other end. We have all made fun of telemarketing, but we

One of the big issues which slowed the initial adoption of e-commerce was that we, as technologists, did a bad job with some of the early systems.

know that a lot of businesses are using it successfully.

**Still Keyed Up**  
Although the back office data entry model is waning, data entry itself is alive and well and living in a store near you. Most registers today aren't registers; they are Point-Of-Sale terminals which automatically reduce inventory, sign the customer up for newsletters, and suggest up-selling. "Join our frequent reader's club for an immediate 10% discount?" or "Would you like fries with that?"

Transforming the order process from batch-oriented to dynamic requires us to re-think the process. Now that we can prompt the sales staff, what do you want them to do when a customer opens their wallet? How can the computer act as an agent of policy to encourage more money to flow toward the company? When did order entry require programmers to foster an "experience" and increase the "ambiance" for the customer?

Wondering why and when we became "Relationship Manager Enabling Technologists" is of limited value. Instead we should be asking ourselves how can we drive the changes forward. Let's look at some of the innovation already in play:

- **Add-on Sales:** Having real time access to data at ring up allows us to suggest an Up-sell or add-on sale. "You know, we have that same top in taupe, mauve, and puce" could pop up on the register screen, as a prompt to the cashier.
- **Targeted Coupons:** Some stores print coupons on the back of the receipts. Smart systems will pick coupons based on the purchases.
- **Frequent Shoppers:** Now that customers are getting used to carrying ID cards for stores, we can target broader buying patterns. Coupons for products they stopped buying might bring them back. Likewise, the add-on sales can use a broader base of information when picking items to mention.
- **Frequent Shoppers:** Using the same ID cards, we can offer discounts for purchase levels, birthday savings, and other deeply targeted responses. Ironically, we can use impersonal technology to personalize the shopping experience. Of course, more automation often means fewer jobs. So, as we build tools to better enable the sales clerk and the cashier, we are also building tools to make them an optional



part of the process. One of the hot new technologies is self checkout.

### THE UNSUPERVISED PLAYGROUND

Even with self checkout, many of these ideas still work. In this mode, however, the add-on, up-sell, and other messages are being read directly by the consumer. Suddenly, we have moved past the electronic equivalent of passing notes to our staff. We are now stacking up sequences of ads for customers. Our internal system is now a direct advertising tool. It makes you wonder what the words "internal system" means.

By inches, we are seeing an erosion of the idea that customers need a human layer between them and our systems. E-commerce is another prime example of removing the salesperson from the selling process. When you think about it, a customer who buys on the web has become our unpaid data entry clerk. They fill out their own credit

card forms. They fill out their own order forms. They even talk themselves into add-on sales. Our customers have gone to work for us.

Unfortunately, the customer is an untrained data entry clerk. One of the big issues which slowed the initial adoption of e-commerce was that we, as technologists, did a bad job with some of the early systems. We didn't manage complexity. We didn't understand what a user might be expecting because the users didn't know what they were expecting either. We were still expecting to produce a controlled experience for a captive audience. That isn't how the web works.

The key to any web store is ease of use. Ease of use and fostering enough trust that a person will give us their

credit card information. Ease of use, fostering trust, and good visual and textual descriptions. <insert obvious Monty Python reference here.>

When we approach the web, we need to be—or work with—designers, credit card systems, user experience modeling, and customer relationship management. In the next installment we will go deeper into ordering over the web. is



CHARLES BAROUCH is the CTO for Key Ally, Inc. and Mount Olympus Systems, Inc. He is also President of the U2UG and a regular Spectrum Magazine contributor.

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By Richard L. P. Solosky

# Who Are You



## Who, who... Who who? *Understanding the principals of an effective value proposition*

I'm sure you have heard Andy Rooney from ABC's "60 Minutes," with his high-pitched, whining voice as he asks, "You know what I hate?"

I do my fair share of surfing the Web. Prospecting, researching, looking for answers to all sorts of questions, looking for products I need, products I want and usually finding information, products, and services I don't need, or want.

In today's marketplace, the Internet is the be-all and end-all of every business. A web site is the cornerstone of every business's corporate image. It's where everyone goes to learn anything and everything about you and your business.

So, "You know what I hate?"

What I hate are companies that simply make no point whatsoever! They offer ridiculous statements that are self-aggrandizing, same-sounding, and self-serving. They simply don't answer the question: "what's in it for me, the customer?"

How about this one...

"ABC Technologies has been making life easier since 1994. Through listening and understanding our clients' technical needs and a grounded comprehension of business technology fundamentals; we are poised to deliver technology solutions that excel in value and provide long lasting results."

"ABC Technologies derives solutions by analyzing your business objectives. We focus on your daily flow of operations to formulate a scalable plan that will produce results. We use the power of new technologies combined with Internet resources and the ability to innovate, rejuvenate and enhance your procedures and daily tasks."

Now what on earth does that all mean?

What exactly have they been doing for the last 12 years to make life easier? Let's face facts, everybody that writes software has a comprehension of "business technology fundamentals." And, doesn't every new solution enhance procedures and daily tasks?

What do these statements tell us about why someone should do business with this company? What have we read that effectively positions this company against its competition? Do these statements tell us anything about what this company specializes in? Do these statements make any claims different

from every other IT professional services company out there?

No!

Have you ever found yourself reading and re-reading a message? And, after reading and reading, still not learning what a company does or understanding why you should buy a company's products or services?

Most small businesses fall short largely because they fail to effectively market themselves. They simply neglect to communicate what they are good at and why anyone should do business with them.

Following are three top reasons for failure:

Using marketing messages based upon product features rather than end-user benefits with bland statements that fail to tell a compelling story.

Promoting the business in terms of what owners and managers understand, instead of what their customers need.

Doing and saying the same things as competitors instead of differentiating themselves by creating a unique value proposition that provides a competitive advantage.

At the core of the problem is this thing called a value proposition. Most companies just don't tell a compelling story. We're faster, lighter, stronger... blah, blah, blah!

How about this one...

"XYZ is a granular cost and profitability analysis system that is used by complicated businesses to understand the profitability drivers of their business and to make decisions that boost shareholder value."

Huh? I bet you read that one that twice! Granular? Is it software? Is it some other kind of tool? Or is it just good old common sense? While these are clever words, they just don't get to the point.

There are many companies that have done an effective job of branding

themselves. IBM did such a great job promoting on demand computing that now we can get all sorts of things "on demand." You know the others: Xerox, Hewlett Packard, Amazon, and Google. As soon as you hear their name, their image appears.

What's a value proposition? It's a creative, compelling, and detailed accounting of who you are, what you are good at, and why you are better than the next guy. It defines you and positions you against the competition.

It speaks directly to your target audience, uncovers the core value that your company offers, and why your customers and prospects will want to buy. It's not a long list of features; all your competitors have the same list. Isn't every product easier, slicker, cheaper?

So how do you differentiate your business in a way that encourages more customers to buy from you? Well, it takes a lot of work.

Often it starts with that process I mentioned in the last issue called SWOT analysis, which is a method of determining your strengths, weaknesses, opportunities, and threats. It is one of the early topics I studied in college while pursuing a business degree. That was a long, long time ago, so it is pretty fundamental to business theory. To take this concept and apply it to your value proposition you need to do several things.

Define your core competencies. What unique process, way of doing business, or specific techniques do you offer? What makes what you offer superior? What makes you unique? Stay away from generic ideas, like faster, easier, or cheaper and look for key components that are very specific and clearly define what you do better than anyone else.

Know your customers and study their businesses. Learn what challenges they face every day and understand their

*Continues on page 20*

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# Who Are You

Continued from page 19



motivation to buy your products and services. What problems do you solve for them? Make sure you answer their question, "What's in it for me?"

Study the competition. Select the top competitors and determine what their position is in the market. Once you understand what the competition is up to, you can create your own unique place in the market.

Understand trends in your industry. What's going up, what's going down. Anybody doing anything new? Are their any new technologies looming around the corner that will affect your market? What about new legislation or ancillary technologies: RFID, Sarbanes-Oxley, or browser-based interfaces. Do they have a potential impact that may affect you, or your customer?

This list of guidelines can easily be expanded, but whatever components you employ in defining your posi-

Most small businesses fall short largely because they fail to effectively market themselves. They simply neglect to communicate what they are good at and why anyone should do business with them.

tioning, make sure your value proposition aligns with your vision. Where do you want to be in one, three, five, or in fifteen years? Will your new found strategy help you get there?

Defining your business and explaining your value proposition is core stuff. It is not easy; it's like writing a resume. Rarely do people do a good job of pumping themselves up and creatively expressing what they are good at. But if you want to get the job, it's something you absolutely must do!

These concepts are just a sampling of what you need to look at to define yourself and position yourself for taking that leap to the next level. Fixing client's software, solving client's problems, enhancing your own products—that day-to-day stuff is what pays the bills today. But, it won't propel your business to the next level, and it eventually dries up and goes away.

Carve out some time to address who you are, what you are good at, and what value you bring to the game, and you'll see your business grow.

So, who are you? is



**RICHARD L. P. SOLOSKY**

has been involved in the MultiValue software industry since 1986. Over these

past 20 years, he has been a principal in two software development companies and thoroughly understands the day-to-day challenges faced by the typical SMB. He is President and CEO of Questus Strategies, a business development consultancy dedicated to assisting small businesses focus their vision, allowing them to effectively work on their business, instead of simply working in their business. [www.questusstrategies.com](http://www.questusstrategies.com).

## Feedback

### What came first, the letters or the letters-to-the-editor department?

We are making another change to International Spectrum Magazine—a Feedback Department, sometimes known as Letters to the Editor.

We want to hear your comments, your reactions, your agreement or disagreement with what you see. Also, do not hesitate to let us know about things happening in the MultiValue Community we may not have heard about yet.

Please send your comments by e-mail to: [editor@intl-spectrum.com](mailto:editor@intl-spectrum.com)

## Public access to Water Quality records achieved by normalizing and storing data in Oracle tables via ONware

**Summary: ONware extends value of UniVerse applications by deploying on Oracle without reengineering.**



Faced with escalating requirements by Homeland Security, growing difficulty sharing data with the public, the Federal Government, and additional county departments, along with the need to incorporate modern technology solutions, Suffolk County, New York (SCNY) mandated a consolidation of their UniVerse system to Oracle DBMS.

Suffolk County, NY has been building highly customized, mission-critical applications with ONware and MultiValue DBMS tools, such as Prime INFORMATION and UniVerse, since the early 1990's with non-technical people. With user-friendly technology and a keen desire to meet the needs of the various agencies, "[...we have been able to develop, in-house, with non-technical people]", states Steve Costa, Civil Engineer for the County. "The applications fit nicely, like a glove. The people who use the systems developed them. Costa, and Patricia Floria, an aeronautical engineer, acted as the primary architects and developers of the county's

Water Resource, Waste Water Management, Hazardous Materials, and Pollution Control and other systems.

"Our end users are technical specialists working out in the field on waste water management projects, pollution control, hazardous materials, and such. They may access the application via laptop or the Internet. The analysts were looking for better ways to mine the data. Faced with something they did not currently have, they would say, "...if we were on Oracle..." describes Costa. However, "Once the Oracle decision was made, we were unsuccessful in getting estimates to re-write with Oracle, including applications from Oracle. Anything we did find was lacking in features and had very high costs."

"We were pleased to hear that ONgroup was able to provide ONware, the technology we needed to move from UniVerse to Oracle", stated Costa. "The easiest part of the migration from UniVerse to Oracle was moving the data. With ONware, the data converts almost instantaneously! We were much relieved with minimal modifications to program objects", said Costa. "I'd say the biggest issues that came up had nothing to do with Oracle or ONware, they were the differences in how printing is

handled by the operating systems when going from a Unix platform to Windows."

The real benefit of storing the County's data in Oracle is to be able to access it in a standard relational table space. ONware's normalization utilities and methodology eased the move from UniVerse to Oracle. ONware uses the dictionary from the MultiValue DBMS and automatically creates the Views, Functions, and DBMS Triggers required for reading and writing normalized tables from the MultiValue application logic.

ONware's normalization methodology supports the original application logic which expects to see the data in a nested MultiValue file structure. The resulting DBMS Views, Triggers, and Functions created by ONware are true DBMS objects and are accessible by any standard SQL tool. With much pressure to allow public access to the County's extensive Water Quality database, standard SQL access was imperative.

The result is that Suffolk County's end users are processing their familiar data entry screens and reports against a fully normalized database, with no impact from the change in underlying structure, and the normalized data structure is a win-win for all. ■

## Companion Technologies Begins Embedded Rollout of Entrinsik's Informer Web Reporting System



Companion Technologies of South Carolina and Entrinsik Inc. began releasing Entrinsik's popular Informer Web Reporting Software as an embedded solution into Companion's software portfolio this month. First-wave customers are already benefiting from intuitive web reporting as Informer is integrated seamlessly into Companion's functionality.

Entrinsik and Companion Technologies worked together

to integrate Informer with Companion Technologies' industry standard practice management line. Six hundred existing practice management customers will receive the embedded solution as part of a standard upgrade, and Informer will be sold as standard software to new Companion Technologies customers.

While Informer is also sold individually to IBM U2 database customers, this agreement boasts Informer's ability to seamlessly integrate with

established software products. Combining Informer's intuitive Web reporting proves to be a useful addition to any ERP system running on UniVerse or UniData databases.

"We envisioned a tool for our customers allowing them to create, access, and share reports on top of our product line. After contacting Entrinsik, we found the best way to add this functionality was to integrate their Informer product into our software. They can focus on developing quality Web-reporting

### Explic Technologies (t/a Workgroup) to distribute Entrinsik's Informer in South Africa

Explic Technologies (Pty) Ltd t/a Workgroup have agreed to distribute and support Entrinsik's popular Informer Web Reporting Software in South Africa. Workgroup is IBM's sole distributor of Universe and Unidata (U2) databases in South Africa and therefore in the perfect position to offer Informer, the U2 industry's leading reporting solution.

"Many of our customers have expressed the strong need to intuitively pull data out of their U2 databases" said Kurt Neumann, U2 Business Unit Manager @ Workgroup. "With Informer, our customers can securely access their data from anywhere using their browser. They can logically display the data in HTML format; drop it into Excel, PDF, or emails. Informer's report scheduling feature is also very popular. We expect our Independent Software Providers (ISP's) will embrace the Informer Community feature allowing them to easily distribute reports among their customer base."

The partnership extends Entrinsik's sales and support arm to a continent it would have otherwise had difficulty reaching. "With Workgroup's dominant market presence and professional support staff, we found the perfect partner to reach organizations in need of Informer in South Africa", said Doug Leupen, President and CEO of Entrinsik. "We are confident that Workgroup will be able to sell Informer into this market and provide the quality support service for the product that both our customers and their customers have grown to expect".

Informer is a web-based reporting tool allowing 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.entrinsik.com](http://www.entrinsik.com). For more information on Workgroup, visit [www.utwo.co.za](http://www.utwo.co.za). ■

software, which they do extremely well, and we can focus on our core business – developing quality practice management software,” said Dave McCord of Companion Technologies.

“We’re obviously excited to bring Informer functionality to our customers.”

“Companion Technologies customers benefit from a pre-installed and configured professional reporting solution out of the box,” said Doug Leupen, President of Entrinsik. “We are also excited this partnership will showcase Informer’s ability to be used as a privately labeled OEM reporting tool.”

Informer is a Web-based reporting tool allowing 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.entrinsik.com](http://www.entrinsik.com).

Based in Columbia, S.C., Companion Technologies develops medical practice management, electronic medical records and revenue cycle management software, and provides electronic data interchange services. Companion Technologies is also a single source provider of computer hardware and network services. For more information on Companion Technologies, visit [www.companiontechnologies.com](http://www.companiontechnologies.com). ■

## Because Not All Data Is Flat: IBM’s U2 Extended Relational DBMSs

IDC has written a white paper that compares the strengths of the extended relational approach with the more commonly used relational approach and highlights the advantages of the extended relational approach in terms of development, performance, and maintenance of the data server.

*From the paper,*

“As a new generation of software products and components is being developed for ‘real time’ and integrated enterprise, Web-based, and service oriented architecture (SOA) implementations, developers are pushing against limitations of the relational paradigm once again. While RDBMS vendors have made enhancements that extend their capabilities beyond the strict limitations of relational data management, the ‘extended relational’ approach is proving to be the right solution for some software vendors that need to manage complex data structures in an ‘on-demand’ world.”

The PDF file of the paper can be obtained by going to IBM’s web sit, [www.ibm.com](http://www.ibm.com), and entering the phrase “not all data is flat” in quotes in the search box. No registration is required. ■

## Freedomsoft Appoints Revelation Software Authorized Reseller

Freedomsoft Pty Ltd has appointed Revelation Software as the first authorized reseller of its patented Freedombase Web Ready software.

Freedombase Web Ready is a quick and easy way to add Web front ends to existing applications and databases. It provides a fast and cost effective means of rejuvenating existing or legacy systems, and retaining the investment that those systems represent.

Glenn Groves, Managing Director of Freedomsoft said, “We look forward to working with the Revelation community, and to being the software of choice for porting their applications to the Web.”

Robert Catalano, Director of Sales, Revelation Software said, “Having Freedombase as part of our product mix allows customizable Web interfaces to be added to OpenInsight applications very quickly. It can be used to port existing GUI forms and popups to the Web, and to create new Web pages, as well.”

**For more information**, go to [www.freedombase.com](http://www.freedombase.com) or [www.revelation.com](http://www.revelation.com).

About Freedomsoft  
Freedomsoft has offices in Australia and California, and

provides a rapid and affordable, Web-based, database-driven software and service.

About Revelation Software

Revelation Software has more than 1.6 million licensed users at over 80,000 sites worldwide. The company’s flagship product, OpenInsight, is the only product of its kind that provides Windows, Linux and Java-based GUI tools to develop web-based applications that support native and relational XML, SQL, and legacy data sources such as ARev, Pick, and IBM Universe. Revelation was founded in 1982, and is based in Westwood, New Jersey, with distributors in the United Kingdom and Australia. ■



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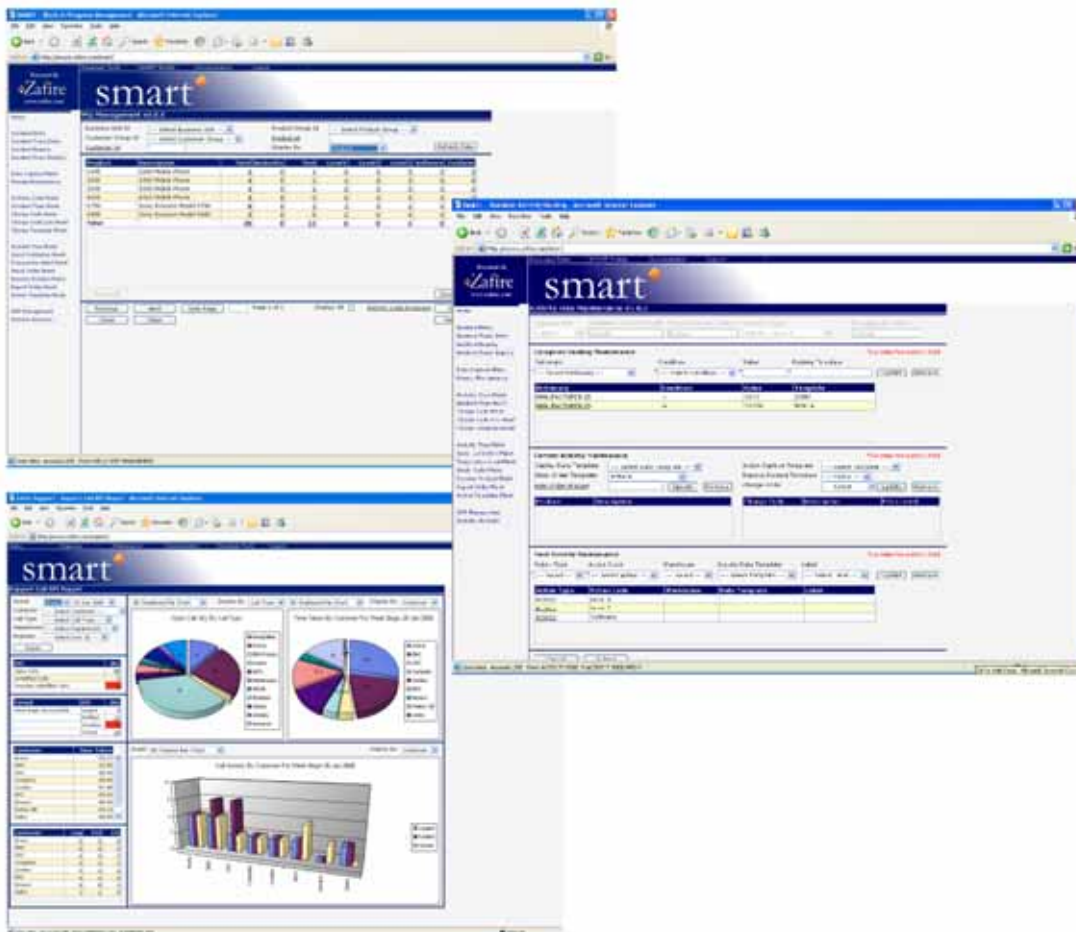


Zafire is a market leader in aftermarket service management software. After having achieved success with our Inspire product for the last six years, it was time to update the look and feel to our product. We were encouraged to look at the DesignBais product and have never looked back since. With the DesignBais product we have been able to totally rewrite our original package, from the ground up, in less than twelve months, enabling us to take full advantage of the features and benefits of DesignBais.

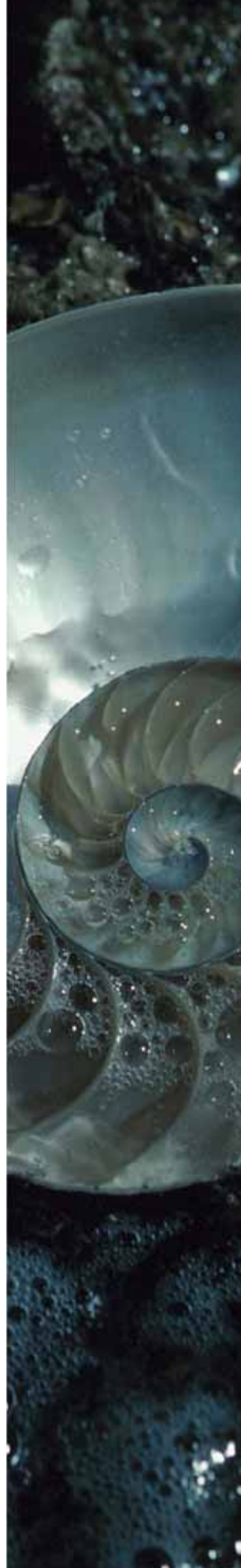
Furthermore, we were able to develop our smart™ application utilizing our existing resources and after only one week of training from DesignBais.

We now believe that we can deliver the best in class solution for aftermarket services, which has enabled us to secure business from one of the UK's leading mobile telephone repairers. Our new package smart™ has secured the future for Zafire in its quest to become the software vendor of choice for the "aftermarket services" industry.

The results speak for themselves.



[www.designbais.com](http://www.designbais.com)



Is

# SB+

## *a Viable Platform for the Future?*

Early adopters who were eager to get product to market applied their Basic development techniques and practices to their efforts with SB+, and in doing so inadvertently overlooked significant product strengths that could have saved them potentially hundreds of hours and thousands upon thousands of dollars.

B Y K E V I N K I N G

Years ago when I first started traveling around teaching people how to use SB+, I'd regularly field questions about this or that new feature, how to do something specific with another feature, those kinds of things. Lately though, it seems like there's a new question on most people's minds:

Is SB+ a viable platform for the future?

When you consider some of the changes to this product through the years, it certainly does seem to be an understandable question. For example:

Changes in ownership: SB+ was originally created by a company named Talisman, which was then renamed System Builder, then acquired by Unidata who then merged with Vmark into Ardent, acquired by Informix, and subsequently acquired by IBM.

Changes in product focus: Original versions of SB+ were character-based only, then GUI, with the current focus being integration with web technologies.

And then there's the lack of change:

The fundamental features of the product—that is, the ability to create screens, reports, menus, and updates—has remained virtually unchanged from the beginning through the current version 5.

If there are any new application vendors adopting SB+ technologies, they're being pretty silent about it. The core of SB+ empowered products from Epicor, Prelude/Activant, Paciolan, and a few others remains the same as 15 or more years ago.

Add to this the new development tools that have entered the market in the past few years, each promising to be the definitive "SB+ killer" and, with all due respect to IBM, I think we would do a disservice if we didn't at least take a few moments to explore how we arrived here and what we can expect in the future.

Since its introduction to the MultiValue community in the late 1980s, SB+ has been marketed as a toolkit for developing and maintaining applications quicker and more efficiently than handwriting everything in MultiValue Basic. With tools for creating screens, reports, updates, menus, and a plethora of companion components (called "processes"), SB+ was intended to make life a whole lot easier for Basic programmers who were ensconced in thousands of

lines of code on a daily basis. Though I can't speak directly for the inventors of SB+, it certainly seems like SB+ was designed to minimize software development costs to allow an organization to save money and therefore grow stronger. Assuming this to be true, has the product lived up to the vision?

Early adopters of SB+ were offered tools and advice for "wrapping" their applications in SB+, thus allowing decades of legacy code to continue running under an SB+ façade. In retrospect, and with the understanding that this is merely one author's opinion, this feature could quite possibly have been the genesis for the question we now explore. Several early adopters were quick to begin the transition to wrapping their applications with the hope that an effortless face-lift could quite possibly improve the sales viability of long-standing products. However, the wrapping procedure was anything but effortless, and the results were often less than anticipated. Here's why.

While a background in MultiValue Basic provides a useful foundation for beginning to use the SB+ tools, to truly leverage all of the capabilities that SB+ offers requires different skills, experience, and flexibility. By way of analogy, if given the task of cutting down a 50 foot tree and the choice of using either a chainsaw or a hand saw, which would you choose? Both do the same job, though the chainsaw with its engine and moving parts has the potential to get the job done quicker and more efficiently. But this is only potential. Until the chainsaw is fueled, lubricated, started, and used properly, it may actually be less productive than the hand saw.

The same is true with SB+. Early adopters who were eager to get product to market applied their Basic development techniques and practices to their efforts with SB+, and in doing so inadvertently overlooked significant product strengths that could have saved them potentially hundreds of

hours and thousands upon thousands of dollars. Even today it's not uncommon to hear of companies that eschew powerful features of the SB+ toolkit for whatever reason. But more concerning are the rumors that somehow using SB+ actually slows down development, which is not only untrue but discredits an otherwise very capable tool.

So has SB+ lived up to the vision of providing tools that save developers and companies time and money? In my opinion, the tools absolutely and unequivocally provide that potential. It is, however, up to the end developer to use or disregard that potential. And as the product continues to mature into web technologies and beyond, I believe the future remains very bright for this product and any company who adopts it as their platform for the future and learns to leverage its full potential.

As to those concerns:

With SB+ now an IBM product, I don't know that we could have any bigger

*Continues on page 28*

# OpenQM

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And yes, it is true that the major features in the current version are basically souped-up versions of the same features we've seen since version 1. But is this really a problem? Perhaps SB+ has simply had the right features all along.

#### *From the Author:*

As an independent consultant specializing in SB+ for more than a dozen years and the author of the SB+ Solutions book, it may seem suspiciously obvious that I would express support for the long term viability of the SB+ product line. But I am not a salesman nor is this article intended as any kind of pitch. There are no endorsement deals with IBM, and I gain nothing by the sale of the product. Rather, since the early 90s, I have been little more than an active (and vocal) user, and in this experience I have recognized an amazingly capable product that is rarely used to its full potential and yet remains poised to save someone a lot of time, money, and stress.

But rather than trust someone you might not have met, why not try it for yourself? IBM has recently released a Personal Edition of SB+ server that allows anyone running a PE version of Unidata or Universe (with Dynamic Connect, also free) to test drive SB+ before making any financial commitment. Download this and the SB+ Solutions manual (which is also free) and see for yourself if SB+ is right for you and your team. [is](http://is)



With 21 years of developing software solutions for a variety of vertical markets, Kevin King is internationally recognized as a leading application developer and educator for multidimensional database environments and IBM's SB+. His book, *SB+ Solutions*, has long been considered the authority for application development using IBM's SB+. He is also the inventor and patent holder for the Phoenix multidimensional storage technology, a private pilot, and Christian music producer... as time allows.

*Continued from page 27*

brother in the market. (I must admit that I originally predicted that IBM would sell SB+ within two years of acquiring Informix, and I couldn't be happier that they've not only kept the product, but continue to keep it updated and out in front of customers.)

As to market focus, I'm pleased that as the market has changed the product has stayed in lock step. Certainly we

would all love more features to come into the product sooner, but I believe IBM has done a good thing in implementing a non-aggressive upgrade schedule rather than forcing things to market too soon.

I do still have concerns about the number of new vendors coming on board with SB+. Perhaps it's happening, but we're just not hearing much about it.

Case Study:

# Leonard Rubin Associates makes easy transition to modern applications using CTO interface

**Change is never easy, especially when you've adopted a database system that has worked for you for 20 years.**

But both Judd Love of J Squared Software LLC and his client, Howard Rubin of New York-based Leonard Rubin Associates Inc., realized that if they could phase in the change to a GUI-based platform from a character-based one with little or no interruptions to the existing workflow, it could enhance both their businesses in the long run.

To achieve this seamless transition for his clients, Love teamed with Revelation

Software and its Character to OpenInsight product. CTO is built into OpenInsight versions 7.2 and higher and supplements the GUI interface that is tantamount to OI.

Love, who created his MultiValue business application apparel industry software product more than 25 years ago, acknowledged it is difficult to go in a new direction, but realized it was becoming necessary for his future. Love said the majority of his clients are on legacy, character-based systems. "But new people coming in are used to point-and-click," he said.

"I'm happy I've been able to maintain many clients," explained Love, "but some have left for another system. They see the ease, the glitz and glamour of point-and-click."

Love said he approached Rubin with the idea of being the first of his customers to transition into OI because his business was relatively small in that it had a limited number of database users, and the environment was flexible.

Love said he was pleased to see that going from character to graphical was possible without having to completely abandon the old system. Rather, the conversion could be phased in, beginning with GUI lookups and then migrating to an all-GUI set up.

*Continues on page 30*

## Leonard Rubin Associates makes easy transition to modern applications using CTO interface

*Continued from page 29*

"I was looking to work with someone who would be flexible in case it didn't work out," added Love. Because of their long-standing relationship, Love said Rubin was willing to invest the time and cost associated with moving to OI. For Love, the reward would be experience with OI that he could share with other customers down the road and "Howard's goodwill" for a successful undertaking.

Rubin echoed Love's sentiment about the initial reluctance to change, adding "I was not very interested in moving to something new." Still, he said, his own customers wanted quicker access to invoices and product information that wasn't always possible while using his existing character-based database format.

In deciding to go forward, Rubin said he trusted Love's judgment about transitioning to OI, and Judd, in turn, trusted Revelation to make the process easy for all parties involved. Both said when they needed support from Revelation during the implementation process, it was there. "I never found that they weren't there to help," said Rubin. "We got answers and results."

What prevented Love from making the transition for his clients sooner, he said, was the all-or-nothing aspect of most options. He had looked at various offerings, he said, "but with the other solutions out there, you had to do 100 percent of it first. That was too much of a burden." Or, he noted, the alternatives were too complex, or offered the graphical look but weren't as powerful as OI.

When he was approached by Revelation, Love said he was pleased to see that going from character to graphical was possible without having to completely abandon the old system. Rather, the conversion could be phased in, beginning with GUI lookups and then migrating to an all-GUI set up.

Rubin, an avowed layman when it comes to computer systems, said he was most interested in accessing information that would allow him to execute for his customers, such as generating reports on how many units a customer had used. Others in his office handled invoicing and payables, which would also become more functional under the CTO format.

When the first phase began in June 2006, Love said the improvements may have seemed simple to some, but for someone working on a character-based system for 20 years, the differences were huge. No longer was a code needed to access the data. Instead, customer and salesman information was available via a graphical look up table.

From there, they installed a menu-to-menu option and followed that with the ability to create reports that could be sent via e-mail.

Rubin said there are plenty of little things offered through CTO that he is happy about, such as being able to look at two screens at once, something he wasn't able to do previously.

There are also time-saving processes, such as being able to preview reports

without first having to print them out, as well as the ability to e-mail reports he previously had to print and carry home to his brother, who is partner in the business.

Transferring information among the salesman is also important, said Rubin. "These are things I saw right away that will be beneficial to my business."

In terms of seeing a return on his investment, Rubin said he recalls when he first implemented his computer system 20 years ago. The process then for aging accounts was done once every six weeks and took someone two days by hand to do it.

With a computerized system, said Rubin, the aging reports were now being updated daily. That, he said, allowed his company to get on top of its bills and save money.

"I hadn't considered it back then, but that in itself paid for the (computer) 20 years ago," Rubin pointed out.

"Now I'm anticipating that same cost-savings with this system," he said.

Rubin and Love both noted that the transition to OI is ongoing. "Soon," said Rubin, "we'll be able to e-mail invoices to customers rather than fax or mail them," which is something that his customers have been requesting. The completed installation is expected to be finished by January 2007, said Rubin.

While the transition continues, Love said Rubin and his staff have the ability at any time to run their system 100 percent character-based if they so choose. "We left him that crutch," said Love.

However, said Rubin, it's not one he needs anymore. "It took me longer than the rest (to fully adopt OI)," he said, "but to tell you the truth, I haven't touched the old system in months." *is*

# New Products

## Release of MITS Report Delivers Unprecedented Reporting Functionality



MITS has launched MITS Report, the next-generation operational reporting environment from the experts in Advanced Reporting and Business Intelligence for MultiValue databases (including IBM UniData and UniVerse, D3, and jBase). This revolutionary, web-based product stands apart from other reporting tools in the areas of ease of use, speed, and security.

In developing MITS Report, the company focused on the challenges customers were facing in reporting for MultiValue databases. MITS Report is the result of direct feedback from customers and partners as well as an investigation into customers' common reporting practices.

### Unique Architecture

The MITS Report architecture revolutionizes access to operational data by providing true "self-serve" reporting. "With MITS Report," Fred Owen, president of MITS, explains, "we have preserved all the benefit that MultiValue brings in terms of flexibility, through our unique Report Source architecture, which

solves the problems of query speed, load on the operational system, and data security." The Report Source architecture exposes all the information stored in the organization's system in a familiar, web-based format. "MITS Report is going to truly revolutionize the way people get their data," Owen states. "This is the reporting product people have been waiting for."

### Easy-to-Use Interface

The designers of MITS Report carried out extensive research on the latest advances in usability to deliver a highly intuitive, well-organized, and familiar user interface. The navigation system in MITS Report consists of drop-down menus that eliminate the need for the wizards many report generators rely on. "Using MITS Report can be as easy as selecting a predefined report from a menu. The results are displayed quickly in a familiar Internet browser setting," Owen states. Advanced users can modify reports by sorting, filtering, and totaling the transactions—all directly from the report results screen. They can then save reports under

a different name or menu, or create reports from scratch.

### Fast Access to Data

MITS Report prevents the frustrating loss of time associated with waiting for vital information to be displayed as reports. This new reporting environment gives users a way to get at their organization's data quickly and efficiently—at interactive speeds they have come to expect when browsing the Web. Reports tailored to users' precise needs are ready not within minutes or hours but within a few seconds. Having fast reporting speeds means any modifications made to reports (for example, adding and removing columns) are viewed in context, with the report changing instantly on-screen.

### Secure Data

MITS Report includes a security layer that grants each named user certain permissions corresponding to their privilege. This layer assures that users see only the data they need. Because there is no direct connection to the MultiValue system database when users view reports, they cannot gain

uncontrolled access to the database.

### Web-based Training

To learn about MITS Report, MITS will offer a variety of training opportunities through scheduled webinars. For more details on MITS Report, contact a MITS representative at [info@mits.com](mailto:info@mits.com) or visit the MITS Web site at [www.mits.com](http://www.mits.com).

### About MITS

MITS is the developer of Advanced Reporting and Business Intelligence for the MultiValue database market. The MITS product line contains both the established MITS Discover OLAP Business Intelligence suite as well as the new report tool, MITS Report. Founded in 1996 and headquartered in Seattle, Washington, the company's technologies are used by thousands of organizations, resellers, and systems integrators worldwide. MITS products are firmly entrenched in a wide range of business areas, including manufacturing, distribution, retail sales and services, education, government, healthcare, and insurance as well as in many other industries.

# New Products

## jBASE International Announces Major Enhancements in Release 4.1.5



**jBASE International** is pleased to announce the general availability of the latest version of its MultiValue database: jBASE Release 4.1.5. Major enhancements available in 4.1.5 deliver more flexibility, scalability and ease of administration.

Performance improvements top the list – many of the features have been redesigned from the ground up to speed up jBASE and improve an already best of breed performer. The thread signal handler has been reworked to ensure full thread safety, making jBASE the only thread safe MultiValue database. This functionality is ideal for the customer developing a Java application who intends to make use of the multi-threaded nature of jBASE.

A new file type has been added, jPlus, which offers the ability to use large files (greater than 2GB) without administrative headaches.

This is ideal for the customer with extra large files on a system, or who wishes to use files that are more resilient to data corruption.

Enhanced SQL, Java and XML support position jBASE on a level playing field to the mainstream DBMS. Developers win with the ability to integrate XML into their applications, to use .NET and Java more extensively and to use the multi-threading features of those languages. A number of XML statements have been added to BASIC to support construction of XML documents. In addition, it is now possible to validate XML documents against schemas, or DTDs, using a BASIC statement.

The addition of an SQL engine means that a BASIC programmer can include SQL statements in place of or in addition to jQL in their BASIC code, or at the command line to access jBASE files. It allows SQL functionality such as joining tables, ORDER BYs, GROUP BYs, HAVINGs, functions etc. For example you can use JQL-COMPILE, JQLEXECUTE & JQLFETCH with SQL as well as jQL. There are two new utilities; SQLSELECT, which runs an SQL statement and returns formatted results, and SQLSELECTL, which runs an SQL statement and returns a select list. The jBASE implementation of SQL is read only and works

natively either from the command line or from within BASIC code.

Reap the security benefits of the new Encrypted TJ and Encrypted Backup/Restore. Using the 4.x ENCRYPT/DECRYPT functions, Encrypted TJ allows a journal file to be created that cannot be read outside jBASE and cannot be decrypted without the relevant key. As with Encrypted TJ, Encrypted Backup/Restore prevents the backup of the file from being read by non-jBASE users and requires a key in order to restore.

jBASE Release 4 users can also purchase the optional Data at Rest Encryption Module (DREM), a powerful new cross-platform jEDI that supports 128-bit encryption and decryption of data at the file system level without any changes to the application code!

Using jBASE jEDI technology, DREM works seamlessly to deliver capabilities for securely and efficiently managing data at rest encryption. DREM gives access to the files by using all existing jBASE utilities, verbs, application programs and dictionaries without the need to modify them. Existing records can be encrypted and encrypted records can be decrypted as easily as creating a new file with the appropriate encryption

definitions and using the COPY verb.

Attempts at encryption solutions by other MultiValue Vendors have had the potential to significantly increase record sizes and directly impact a system's performance, introducing the need for compromise between encryption of data and application performance. But due to the techniques used in the DREM encryption process, performance is not impacted on most configurations of most applications. In fact, record sizes may even shrink because of the DREM algorithms – sometimes up to 30%!

Upgrading to Release 4.1.5 is painless and users will not need to recompile their 4.1.4 code to upgrade. Much of the work in jBASE 4.1.5 is preparatory work for making the leap to a completely 64-bit only release in jBASE 5!

For those considering a move to jBASE, migrating to jBASE has been performed successfully and quickly by many users in the past with tools being available to assist in making the migration process easy and effective. The changing, testing, and installation of migrated applications on jBASE is an exercise that normally can be completed in a few weeks rather than months. jBASE International is very price



competitive for companies migrating to jBASE as the additional expenditure in acquiring jBASE licenses to replace the incumbent database licenses is taken into consideration. Users will also find that the ongoing support rates are some of the lowest in the industry.

Talk to your jBASE representative or email [sales@jbase.com](mailto:sales@jbase.com) to learn more about how jBASE Release 4 can benefit you! More information is including a full list of 4.1.5 enhancements is available at [www.jBASE.com](http://www.jBASE.com). ■

#### About jBASE International

jBASE International is a leading supplier of database management software and web enabling tools for developing, deploying, and maintaining business applications solutions. The flagship product, jBASE, was designed from the ground up to be an open database product that would bring the strengths of MultiValue technology into the mainstream computing market. With exclusive worldwide distribution rights, jBASE International offers technologies and assistance that allow businesses to thrive into the future. Visit [www.jBASE.com](http://www.jBASE.com) for more information.

## Revelation Software releases Universal Driver Heavy (UDH)

Revelation Software is proud to announce the release of Universal Driver Heavy (UDH) release 3.1 as part of their network product suite.

The Universal Driver Heavy is client/server software designed to allow real-time mirroring of Revelation Linear Hash data. It will automatically replicate data from a primary server to a secondary server. The UDH also allow administrators to monitor active locks and users within the system, release those locks if necessary, and put the primary server into journaling mode so that the secondary can be backed up quickly. It is designed to handle intensive Revelation applications that need to scale up and have high availability.

"UDH ensures the integrity of your application and your data," said Kevin Ruane, IT Director of Revelation Software. "We have designed UDH for the business where down-time is intolerable."

The 3.1 release of The Universal Driver Heavy is for Windows-based platforms only.

For more information about Universal Driver Heavy (UDH), our Solution Partner Program, or Network Training classes at Revelation Headquarters, go to [www.revelation.com](http://www.revelation.com) or give us a call at 800-262-4747.

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, and client server platforms. The company's flagship product OpenInsight is the only database development and application environment that provides Windows, Linux, and Java-based GUI tools to develop and deploy web-based and client/server applications that support native and relational XML, SQL, and the leading legacy MultiValue data sources such as ARev, PICK, and IBM UniVerse. 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.

# New Products

## IBM UniVerse Now Available



IBM UniVerse 10.2 – generally available 29 September 2006 – protects personal data, supports U2 Web Services, strengthens and streamlines high availability, and more!

### Highlights

- Adds support for U2 Web Services
- Delivers encryption of data at rest
- Improves high availability functionality and performance
- Offers device licensing for Server Edition

### Greater interoperability

UniVerse 10.2 introduces a new graphical tool for Web Services development. The U2 Web Services Development Tool for UniData and UniVerse (U2WSD) allows developers to create Web Services quickly from existing subroutines as well as from queries. This enables disparate organizations to communicate with one another using a worldwide standard. Businesses embracing Service Oriented Architecture (SOA) with U2-based applications can provide information as a service using U2WSD.

UniVerse 10.2 introduces new XML classes for UniObjects for .NET and UniObjects for Java. These new classes allow developers to

expand client-server and Web application capabilities by utilizing the extensive XML support available in UniVerse. As XML becomes the standard for corporate communications both internally and externally, the XML classes for UniObjects for Java and UniObjects for .NET can help provide businesses the edge necessary to excel in the marketplace.

UniVerse 10.2 extends the database connectivity options with the addition of Connection Pooling for UniObjects for .NET and UniObjects for Java. This optional feature permits Web applications to connect to UniVerse using a separate pool of licenses. UniVerse 10.2 supports load balancing and monitoring capabilities, combining ease of administration with high-speed communications.

### Advanced security options

UniVerse 10.2 automates encryption of data at rest, protecting important information and meeting government standards. This advanced technology utilizes today's modern cryptology techniques to secure data at rest with little to zero changes to applications. Utilizing a new graphical interface, administrators can create the security rules needed for their organization, thus protecting sensitive information at the field or record level.

Secure Sockets Layer (SSL) support for UniVerse Windows Clients extends the ability to create secure communication channels using encryption and end-point authentication to this protocol via UniObjects, UniOLEDB, ODBC, InterCall, and the UniCall Interface (UCI). With the ever increasing demand to secure data transmissions across wide area networks as well as local intranets, U2 SSL provides organization with the tools necessary to safely deliver data between two endpoints.

A new graphical tool, the U2 SSL Configuration Editor, is provided to simplify the management of SSL property lists, which contain such information as certificates, private keys, certificate revocation lists, and more.

### Robust high availability options

UniVerse 10.2 delivers additional capabilities and the ultimate in reliability when using the enhanced Transaction Logging feature. With the new point-in-time recovery ability, systems can be recovered from and to any point in time, such as when it is required to restore a system to a point immediately before a particular transaction occurred.

Additional enhancements provide businesses with the peace of mind that data will be protected and available. File level operations are logged and can be replayed on a second host to ensure the database remains completely in synch. System downtime is reduced since these operations will be executed automatically when the database is restored either locally on the same system or remotely on a disaster recovery server.

UniVerse 10.2 introduces a new replication protocol to ensure log files transmission is acknowledged to support automatic recovery should there be a network outage.

Improved performance  
For release 10.2, UniVerse Data Replication improves the transfer speed of replication of data between two UniVerse data servers. The improved subscriber update speed provides near real-time availability of replicated data.

#### Improved licensing and authorization

For the first time, IBM UniVerse offers device licensing for Server Edition. This optional feature allows businesses to add up to 10 additional connections per user session, thus expanding user productivity.

UniVerse 10.2 includes a new license configuration and authorization process designed to offer ease of use and additional flexibility after installation. Administrators may choose to configure add-on components such as Connection Pooling at any time, including during the initial setup or upgrade of UniVerse. A 60-day evaluation period gives administrators time to obtain an authorization key with minimal downtime. An additional benefit is the improvement of asset management. ■



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#### Programming

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## OBJECT

*Orientation*

## SOUPED UP SUBROUTINES

Terms like “Object-Oriented,” “Inheritance,” “Properties,” “Methods,” and “Class Modules” scare people, so we are instead going to build upon the knowledge you have acquired in years of external subroutine development.

External subroutines have been the weapon of choice in building large MultiValue applications. Instead of having a 50,000 line mainline program with lots of GOSUBs and GOTOs, external subroutines let you divide your big application into smaller pieces. But what do you do when external routines are no longer adequate to handle greater and greater application complexity?

You create “Souped Up Subroutines!” Actually, you add a progression of features to external subroutines until you end up with “Objects.” But terms like “Object-Oriented,” “Inheritance,” “Properties,” “Methods,” and “Class Modules” scare people, so we are instead going to build upon the knowledge you have acquired in years of external subroutine development. Let’s start with the basic, lowly subroutine call as shown in Figure 1.

This is pretty simple stuff. It is a bit dated though, so let’s start adding functionality. (All the code shown here actually compiles and runs in OpenQM version 2.4-0 or later. This is not an academic exercise. You can really do this.)

## Step 1: Adding Functions

First, we would like to create something called a “Function.” A number of MultiValue providers now support functions, as does OpenQM. A function is really nothing more than a subroutine that returns a value. (See Figure 2.)

Functions are really the same thing as subroutines; there is just an extra bit of

```
DEFFUN Avg(x,y) | FUNCTION Avg(x,y)
... | RETURN (x+y)/2
PRINT Avg(3,7) | END
```

Figure 2

data that is the return value, and a more flexible usage syntax. In QMBasic, this function could have been written as shown in Figure 3.

```
CALL SUBNAME('George','Smith') | SUBROUTINE SUBNAME(p1,p2)
... |
RETURN |
END |
```

Figure 1

```
CALL FUNCTION Avg(x,y,result) | SUBROUTINE Avg(x,y,retval)
PRINT result | retval = (x+y)/2
| END
```

Figure 3

As you see, the effective result is the same. So a function is just a subroutine that returns a value and has a different calling syntax.

Step 2: Variable Argument Lists  
 When you compile a subroutine (or a function), you traditionally have to define how many parameters it takes. We want our subroutines and functions to be able to take differing numbers of parameters depending on how they are called (see Figure 4). (The current OpenQM run-time has a limit of 255 parameters on subroutine and function calls.)

```
var = object('MYOBJECT')
var->routine1
var->routine2
```

```
CLASS MYOBJECT
FUNCTION Avg VAR.ARGS
  tot = 0
  FOR i = 1 to arg.count()
    tot = tot + arg(i)
  NEXT i
  RETURN tot / arg.count()
END
*
PUBLIC SUBROUTINE routine1
  DISPLAY 'Inside of MYOBJECT routine1'
  RETURN
END
*
PUBLIC SUBROUTINE routine2
  DISPLAY 'Inside of MYOBJECT routine2'
  RETURN
END
```

Figure 5

Step 3: Multiple Entry Points

Now we are going to start breaking the subroutine syntax a bit, but you should still recognize the subroutine heritage underneath. There are two

reasons for breaking the traditional methods. The first is because we want a more fluid means of accessing the

subroutine contents than the traditional CALL expression. Ideally, we would like to be able to access those subroutines in a manner similar to simple variables. Similarly, we would like to create subroutines and functions that have more than one routine inside of a single source module. This is actually the beginnings of objects, so some new syntax will show up, but keep thinking "Souped Up Subroutines." (Figure 5)

*Continues on page 38*

```
DEFFUN Avg(x,y) VAR.ARGS
...
PRINT Avg(3,7,22,16)
```

```
FUNCTION Avg VAR.ARGS
  tot = 0
  FOR i = 1 to arg.count()
    tot = tot + arg(i)
  NEXT i
  RETURN tot / arg.count()
END
```

Figure 4

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As you will notice, both public subroutines can be directly executed simply by evoking their object and entry point.

Step 4: Calling Code on Both Sides of the Equal Sign

When we did 'var->routine1' in step 3, we were basically doing a CALL to the subroutine inside of the class that we opened (instantiated) with the object built-in function. Actually, as seen in Figure 6, we can use the -> syntax as parts of much more complicated expressions.

```
var = object('MYOBJECT')
var->print = "Hello world"
*
PRINT var->date

CLASS MYOBJECT
SET print(var)
  PRINT var
END
*
GET date
  RETURN oconv(date(), 'd2/')
END
```

Figure 6

SET and GET "methods" are blocks of code (subroutines) that are called whenever you want to set a value (SET) or retrieve a value (GET). SET and GET are actually identical to 'PUBLIC SUBROUTINE' (the same as SET) and 'PUBLIC FUNCTION' (the same as GET), but make more sense when you are thinking about setting and retrieving variables.

Step 6: Persistent local data

One thing that would be really cool would be for subroutines to preserve data across calls. You can do this with trickery and old fashioned subroutines, but these Souped Up Subroutines are designed to keep local persistent data. (Figure 8.)

Persistent data in subroutines is incredibly powerful. You can keep file variables, network connection handles, accumulated totals for an application,

or whatever makes sense in your application.

Step 7: Public Variables

People who are used to object-oriented programming will be wondering why this feature is so far down the list? Usually, public properties are the first thing you learn about objects. But with Souped Up Subroutines, public variables are almost a triviality. (Figure 9.)

Public variables can also be dimensioned arrays, and the x(n1,n2) syntax works both inside and outside of the class module.

Step 8: Soft calls

So far, everything has had hard coded names. To be really useful, you want Souped Up Subroutines to be data driven. This works as well (see Figure 10).

This is obviously a lot harder to read, so you would not usually write application code like this, but for some utility routines, it is very handy.

```
var = object('MYOBJECT')
var->print(2) = "Hello world"
PRINT var->date(10465)

CLASS MYOBJECT
SET print(n,var)
  FOR i = 1 to n
    print var
  NEXT i
END
*
GET date(val)
  RETURN oconv(val, 'd2/')
END
```

Figure 7

Step 5: Putting Parameters on Both Sides of the Equal Sign

When you write a method, the method can have parameters as shown in Figure 7.

Of course, you can use VAR.ARGS (see step 2) here as well.

```
var = object('MYOBJECT')
var->val = 3
var->val = 99
var->val = 137
PRINT 'The average is ' : var->avg

CLASS MYOBJECT

PRIVATE TotalVal
PRIVATE TotalCnt
*
PUBLIC SUBROUTINE create.object
  TotalVal = 0
  TotalCnt = 0
END
*
SET val(val)
  TotalVal = TotalVal + val
  TotalCnt = TotalCnt + 1
END
*
GET avg
  RETURN TotalVal / TotalCnt
END
```

Figure 8

```

var = object('MYOBJECT')
var->val1 = 3
var->val2 = 99
PRINT 'The average is ' : var->avg

```

```

CLASS MYOBJECT
PUBLIC val1, val2
*
GET avg
RETURN ( val1 + val2 ) / 2
END

```

Figure 9

```

t = 'MYOBJECT'
var = object(t)
*
t = 'val1'
var->(t) = 3
/ 2
t = 'val2'
var->(t) = 99
PRINT 'The average is ' : var->avg

```

```

CLASS MYOBJECT
PUBLIC val1, val2
*
GET avg
RETURN ( val1 + val2 )
END

```

Figure 10

```

var = object('FILE')
var->filename = 'CUSTOMERS'
print var->custname('000123')

```

```

CLASS FILE
PRIVATE file.var
PRIVATE dict.var
*
SET filename(file)
open filename to file.var else abort
open 'dict', filename to dict.var else abort
end
*
GET default(nm, id)
read dict.rec from dict.var , nm else abort
read data.rec from data.var , id else abort
if dict.rec<1> <> 'd' then abort
return data.rec<dict.rec<2>>
end

```

Figure 11

```

var = object('MYOBJECT')
print 'The date is ' : var->element(123)->date

```

Figure 12

### Step 9: Default handlers

When you call into a Souped Up Subroutine, you use a “method or property name.” What happens if you call a method that does not exist? Usually, you get a run-time error, and your program exits or goes to the Basic debugger. If your Souped Up Subroutine is clever, it can actually catch this and do useful things. (Figure 11.)

Look very carefully at what this 13 line routine does. It lets you query any attribute in a file based on the item ID and a dictionary name. Admittedly, there are a lot of limitations here, and there is a lot of error code that is missing, but this is amazing functionality with very little code and with a very readable and understandable syntax.

### Step 10: Object Variables and Recursion

All of the while we have been using “var = object(‘CLASS-NAME’)” to “open” the code that we want to call. ‘var’ is actually a variable, much like a file variable. You can assign it to other variables, save it in common, or pass it to a subroutine (either an old fashioned one or a Souped Up Subroutine). Even more fun is that a Souped Up Subroutine can pass an object variable back as a result. This allows nested statements like what you see in Figure 12.

Provided that the ‘element’ property returns and object variable that has a ‘date’ property, this will run.

### Step 11: Other Housekeeping Stuff

You can define code that runs when an object is created and destroyed. You saw a ‘create.object’ subroutine in one of the examples that

initialized some variables to zero (they initialize to unassigned if you don’t otherwise set them). There is also an optional ‘destroy.object’ subroutine that is called when an object is being deleted. Objects are deleted when all of the variables that point to them “go away”. Having subroutines for when an object is created and destroyed is very helpful. Objects can do complex stuff. You might want an object that makes a network connection with another server. The ‘destroy.object’ subroutine gives you a place to close network connections even if your application aborts. (The ‘destroy.object’ handler runs even if an application crashes to the debugger.)

*Continues on page 46*

# Code Versioning

B Y B R I A N L E A C H

Deploying software is one of the more stressful phases in the life of a software company, or equally of an in-house team deploying across test and live environments. Your team has worked hard, possibly through many long hours, to add all of those essential and desired facilities that make up a new software release. Hopefully, they have also spent many hours testing these facilities. Now they are faced with the often daunting prospects of creating and testing a method of installation.

Software deployment is something too often overlooked or patched together at the last minute as an afterthought. However, a poor deployment model reflects badly on your products, makes clean room installation for QA costly and time consuming, and can be the cause of many fruitless hours wasted on installation and presales support.

There are now automated deployment tools such as mvInstaller for the MultiValue sector. These can reduce the stress and cost involved in producing stable, cross platform setups for applications or patch releases. Alongside such tools there are certain techniques that can help cut down on those sleepless nights: adequate versioning, revision control, and deployment maintenance. But the starting point is knowing what to release, and that means adequate versioning.

About Versioning.

It helps to know what software you intend to release. It also helps to know what software actually has been

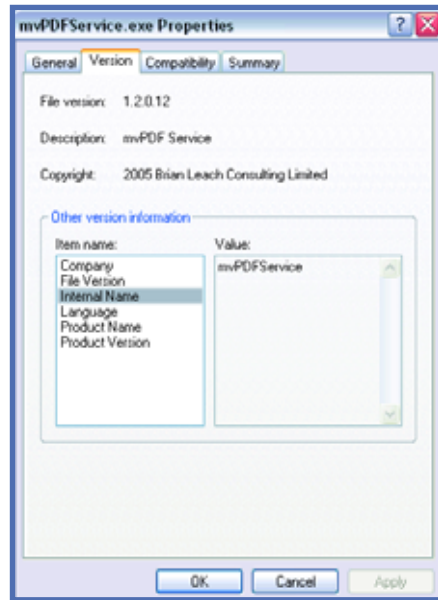


Figure 1. Version information for an executable.

released and what software has eventually been installed on to a client or internal live site. System managers have many calls upon their time, and they may not prioritize the time spent to install upgrades and patches that you believe to be essential. Whether from a support or comfort point of view, being able to quickly establish that the correct software is running, particularly in a mixed environment such as a client and server application, is essential.

Windows platforms know about versioning. Open up the properties page for any Windows executable using Windows Explorer and you should see a tab captioned Version. Here you should be able to find a version number, and possibly supporting information giving the manufacturer, products and copyrights details for that file—all essential in establishing the history of a particular file. We can emulate the same information for a MultiValue program in a way that allows us to establish the provenance and version of any particular piece of MultiValue Basic code (Figure 1).

In theory, version information is mandatory for Windows executables and libraries. It is required by well-behaved setup programs such that it should not be possible to accidentally install an earlier version of a program to overwrite a later version. This is at the heart of the Windows Installer technology and contains lessons that we in the MultiValue community can

```
PROGRAM PDF.MERGE
*
* @@Name      : PDF.MERGE
* @@Description : Create a Merge Document
* @@Product   : MVPDF
*
* Brief Description
*
* @@INFO {
*   Create an Adobe PDF Document by merging in dictionary items using a
*   LIST style syntax. Requires blstd data library.
* }
*
* Warnings
*
* @@Warn { None }
*
* Modification History
*
* @@Log 21 JUN 2006 Support for multiple servers
*
* Keywords
*
* @@Key {PDF LIST MERGE}
*
* To Do List
*
* @@ToDo {Support for Digital Signatures}
*
```

Figure 2. Standard Program Header.



```

VERDATA= "
VERDATA := 'Version=001000040;'
VERDATA := 'VerBeta=';
VERDATA := 'VerDate=14095;'
VERDATA := 'VerProd=mvPDF;'
VERDATA := 'VerTM=mvPDF;'
VERDATA := 'VerCopy=2006 Brian Leach Consulting Limited;'
VERDATA := 'VerCo=Brian Leach Consulting Limited;'
VERDATA := 'VerDesc=Command to produce a PDF by merging data;'
VERDATA := 'VerCat=PDF.MERGE;'
VERDATA := 'VerModule=GENERAL;'
VERDATA := 'VerModVer=001002004;'
VERDATA := 'VerHist=03 AUG 06 1.2.4 Release;'

```

Figure 3. Version information.

learn. The “DLL Hell” familiar to Windows developers shows what can happen when versioning goes awry.

Windows binaries hold version information in a special resource called a VERSIONINFO block. A resource is the name given to an encoded and specially identified block of stuff that is physically included inside an executable file or library. Examples of resources include icons, images, and the language-dependent strings for multi-lingual applications; in fact, a resource can wrap practically any structure that is not itself a part of the code base. A Windows Version Information structure is a specially identified block containing a series of keys and values. The content of that block can be largely user-defined, the only mandatory element being the FileVersion key that holds the actual version stamp. Convention however dictates that the version information also includes a number of common keys to identify the manufacturer and product, possibly in localized forms.

MultiValue platforms do not have a generic native version info or resource structure, but this is something that can be emulated. Creating a version information block gives you the means to identify exactly what is running; this can in turn be fed into intelligent installers, to selection routines used to build patches, and for self-awareness checks within a multi tier applications to ensure that a client and server are running the same release level.

#### Not So Good Versioning

Most development companies have some form of version identifier specified as part of their standard development practices and code templates.

These typically include layouts for well-intentioned modification histories and version counters held in their source code. Generally these are held in program headers in fixed comments that can identify the author, project, date, version number, and the history of source code amendments, something similar to the one shown in Figure 2, designed to be parsed by automated documentation routines.

Program headers like the one above hold useful documentation for programmers on the use, restrictions, and description of a code entity and can be used to build indexed documentation and code library searches. Unfortu-

was the latest source code to be catalogued (which may not be the latest source code to be amended!). Or a product may be installed by a vendor without including the source code for that platform.

A better way to do versioning.

Windows version information is held as a resource: that is, the version information is physically compiled into the executable code. This makes it possible to strip that information from the code that is actually running without reference back to source code that may or may not be present. So the version information really needs to be held in the object code.

Fortunately, this can be done quite easily. The simplest way is to ensure that it gets written to the object code string table in a format from which it can be

```

*-----*
* Usage
*-----*
Usage:

    Crt "PDF.MERGE"
    Crt "======"
    Crt

    GoSub GetVersion
    Version = Field(Field(VERDATA,"=",2,1),",",1,1)

    Crt "Version : ":(Version[1,3] + 0):".":(Version[4,3] + 0):".":(Version[7,3]+0)

    Crt "PDF merge by Brian Leach (http://www.brianleach.co.uk)"
    Crt
    Crt "Create a PDF document by merging data into a page design."
    Crt
    Crt "Syntax:"
    Crt "----"
    Crt
    Crt "PDF.MERGE template TO document FROM filename [USING DICT dictname]"
    Crt "field [AS name] [CONV code].. [/option]"

>PDF.MERGE

PDF.MERGE
=====

Version : 1.0.40
PDF merge by Brian Leach (http://www.brianleach.co.uk)

Create a PDF document by merging data into a page design.

```

Figure 4. Program displaying its information.

nately, these are inadequate for proper versioning.

On MultiValue systems where the object code is held in different locations than the source code—for example where global cataloguing is supported—there may be more than one copy of the source code sitting in various temporary or development files making it difficult to establish which

easily identified. A good way to do this is to provide the version information as a series of strings consisting of a literal set of key and value pairs, allowing you to search the object code for the key and to retrieve the value following. The value itself requires some form of string terminator. The structure reflects the key/value pairings of the Windows version content. *Continues on page 42*

# Code Versioning

Continued from page 41

Figure 3 shows a sample version resource that I use in my server code. You can, of course, adjust this to suit your requirements.

The various keys identify the critical information about the program, namely:

Version 9 digit version number major/minor/build (nnn.nnn.nnn)

- VerBeta** Used to flag a Beta version
- VerProd** Product name
- VerCopy** Copyright statement.
- VerCo** Company
- VerDesc** Short description of the program.
- VerCat** Catalog name if different than the program name.
- VerModule** Name of the module for shared libraries.
- VerModVer** Version of the module
- VerHist** Latest history, can contain multiple entries.

The version string is assigned to a dummy variable to ensure that it is compiled into the object code string table. Note however that although the assignment must be present in the source code, it is not necessary for those lines of code to actually execute, unless you want the program to display its own version information as shown in Figure 4.

Giving a program a command line argument to display the version is straight forward, but this is inconvenient for sub-routines and external functions. A better approach is to create a separate program that can read the object (or source) code and extract the version information, as demonstrated in Figure 5.

This can be called to scan source or object items, or entries in catalog directories such as the UniVerse GLOBAL.CATDIR. Because the structure of the stamp is preserved in the assignment string, it will even work with the fully compiled jBASE executables.

```

SUBROUTINE GetVersion(Value, Key, VerRec)

    EQU VERKEYS To 'Version/VerBeta/VerDate/VerProd/VerTM/VerCopy/VerCo/VerDesc/Ver-
    Cat/VerModule/VerModVer/VerHist'
    EQU VERNAMES To 'Version Number/Beta Release/Version Date/Product Name/Trade-
    mark/Copyright/Description/Catalog Name/Module/Module Version/History'
    EQU VERKEYCOUNT To 12
    EQU VERMAXKEYLEN To 20

    GoSub VerGet

    Keys = VERKEYS
    Convert "/" TO @FM In Keys
    Locate Key In Keys Setting Pos Then
        Ans = VerData<Pos>
    End
    RETURN

*-----
* VerGet: Extract version keys into a dynamic array
*-----
VerGet:
    VerData = ''
    For VerCount = 1 To VERKEYCOUNT
        VerKey = Field(VERKEYS,"/",VerCount,1):"="
        VerIx = Index(VerRec,VerKey,1)
        If VerIx Then
            VerVal = Field(Field(VerRec,VerIx,9999),' ','2,1'),' ','1,1)
            VerData<VerCount> = VerVal
        End
    Next VerCount
    Return
    
```

Figure 5. Snippet extracting version string.

Version Listing  
A useful extension of this is the ability to list version information directly from TCL. Using subroutine calls from an I Descriptor dictionary item on supporting platforms, the same scan can be performed to return a specific key on the current record, as shown in Figure 6.

As for updating the version stamps—well, there is nothing magic about source code. Version stamping programs can search for the same version info keys to update their contents as the display program above. You can find a free example version stamping pack-

```

DICT pdf.source VERSION

I
SUBR("verdict","Version");(@1[1,3]+0):".":(@1[4,3]+0):".":(@1[7,3]+0)

Version
9L
S

LIST pdf.source 12:02:20pm 14 Sep 2006 PAGE 1

pdf.source..... PDF.LISTPRINTERS
Version..... 1.0.40
Version Description. List printers installed on mvPDF Server
Module Version..... 1.2.4

pdf.source..... PDF.MERGE
Version..... 1.0.40
Version Description. Produce a PDF Document by merging data
Module Version..... 1.2.4

pdf.source..... PDF.REMOVECACHE
Version..... 1.0.40
Version Description. Remove an image from the mvPDF Fast Cache
Module Version..... 1.2.4

pdf.source..... PDF.SPOOL
Version..... 1.0.40
Version Description. mvPDF Spooler Capture Phantom
Module Version..... 1.2.4

pdf.source..... SET.PDF
Version..... 1.0.40
Version Description. Initiate mvPDF Spooler Capture
Module Version..... 1.2.4
    
```

Figure 6. Listing version information.

age named mvStamp on my web site at [www.brianleach.co.uk](http://www.brianleach.co.uk).

### Safe Installation

Armed with a working version information structure, you can create safe deployments and safe cataloguing routines that can prevent accidentally

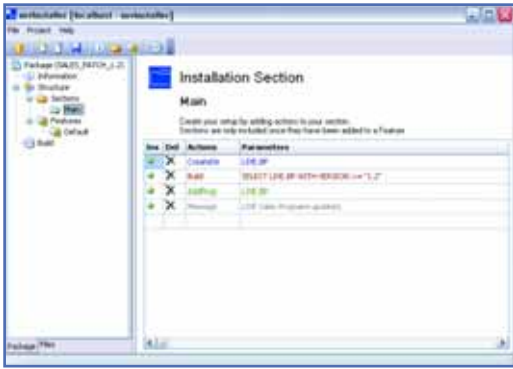


Figure 6. Building a patch release in mvInstaller

regressing code or cataloguing an older version over a newer version.

mvInstaller, for example, includes options for version sensitive installations that will automatically check the version stamps of source items being installed. By default, this uses the same version keys maintained by the mvStamp package above, but it can also support a custom version checker provided as a simple subroutine to accommodate other version structures for compatibility with existing release procedures. Of course, on rare occa-

sions it may be desirable to regress, so the mvInstaller deployment tools allow forcible overwriting if required.

You are not restricted to Basic code either. By including the same key and value pairings in non-compiled items, such as comments in PROCs and paragraphs, you can have a single standard means of identifying and binding together the versions of all parts of your code, whether source, object, or job control based.

If you consistently apply version stamps on saving items, this can also go a long way to building your releases. Patch releases, for example, can be created by selecting items with a particular stamp or version date to include within your setup. Once again, mvInstaller accommodates this by supporting Build statements that can select and

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process data whilst an installation package is being assembled (Figure 7).

The Build action selects the updated versions only. The AddProg automatically applies version checking as a safeguard when adding a BASIC program. is

**B R I A N L E A C H** is an independent MultiValue consultant and contractor, and Vice President of the IBM U2 User Group. You can find more tools and free utilities on his website at: <http://www.brianleach.co.uk>

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# IM [ Webonomics 101 ] what I am

Continued from page 6

But apparently, there are many who haven't caught on. Moreover, many seem utterly oblivious to the fact that instant messaging (IM) also can be used against them or their companies.

Instant messaging is extremely popular and extant. It allows you to instantly transmit a message to someone almost anywhere on the planet, without waiting for e-mail queues to be downloaded. Many communication devices, including cell phones that have SMS text messaging, can interact with instant messaging software, allowing you to always chat with your family, friends, and co-workers.

We at Eagle Rock Information Systems, for example, depend on its ability to

keep our central office staff, remote staff, and a rather mobile yours-truly in casual, comfortable communication with each other. IM allows us to ask questions as easily as if we slipped a note to someone while they were talking on the phone.

Just as with e-mail, companies can examine your IMs. Typically, companies should be backing up PCs, which then archives logged IMs. Some IM logs are stored remotely, which then allows for more direct review. Modern firewalls (as though there are any pre-modern firewalls) and port management software can monitor the actual IM messages for enforced logging as well as intervention, blocking keywords or certain individuals from using

the communication ports. This monitoring can be conducted by the company, bandwidth provider or government, depending upon your location.

It's because of this tracking that Hewlett-Packard got caught in the California and US governments' line of fire. HP's board authorized the use of perhaps illegal investigations that included possibly fraudulent procurement of phone records of board members and journalists. HP logged IM chats between its spokesperson and various reporters. These IMs will play a role in upcoming criminal investigations, as five people have been charged with conspiracy, including the former Chairperson Patricia Dunn.

What happened in Washington DC with Rep. Mark Foley (R-FL) could have occurred anywhere. He used his AOL account to send inappropriate e-mails. Here, it appears that he used some self-censorship, for the e-mails, as

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	Part Number: 60794				
	Description: Ruggedized PicoDot. Convergent Laser				
2	PD4VP6LLP W/30'	\$345.00		\$345.00	182
	Part Number: 68528				
	Description: Ruggedized PicoDot. Polarized Retro Laser				
3		\$0.00		\$0.00	YES

have been released at the time I'm writing this column, can be at best described as inappropriate and lacking in decorum. They are unlikely to be considered inflammatory by themselves. The outlandish communication that was trapped, however, came across on instant messages. Here, apparently, the Congressman failed to exercise the same restraint and thoughtfulness. In fact, it appears as though he failed to exercise any restraint and thoughtfulness whatsoever. And, not to just one individual minor, but to several. I would suspect that he used AOL Instant Messenger (AIM), but technically he could have used AIM with Trillian, iChat and other software products as well.

While most people enjoy the power of instant messaging, companies haven't fully realized the ramifications of its extensive use. By some estimates, one-third billion people are using instant messaging on a regular basis, with perhaps 1.5 trillion messages transmitted DAILY. It does not take much imagination to take this popularity and translate it into potential misuse and misbehavior. Hey, 350 million people are just people.

Perhaps one-third of US employees use instant messaging at a workplace. I find this figure surprising, as many people don't have PCs in the regular course of their work. It suggests that most everyone who indeed has a PC uses instant messaging at work. Most companies, though, have no established policies regarding instant messaging, either in use or in content.

Some industries, though, are paying attention. Those who deal in stocks and securities will soon be required to track instant messaging as they would written documents and e-mail. These companies will thus be required to maintain logs for at least three years.

Depending on the chat software in use, different logging techniques are available. If your company is interested in a comprehensive, unified approach,

it should consider the "pro" versions of the chat software in order to get the corporate administration and management tools that come up such upgrades. Companies from Microsoft to WebEx offer various advanced versions of the software to facilitate such centralized tracking. The software market for all sorts of messaging has exploded in the past several years. According to one study, the global value of such software has reached \$2.5 billion annually.

Centralized auditing, however, can lead to more government and legal action. It has not been established as of yet that IMs logged on individual PCs can be subpoenaed. Until or when the legal system accepts such electronic files on individual PCs, these files will be retrievable only when they were saved on the corporate server.

Of course, labor lawyers are helping drive the market and the changes in legal interpretation. Inappropriate behavior includes things like I described with HP and Congress, but also covers areas such as discrimination, harassment, and corporate espionage. Depending on your place in the company, this can be good, or it can be bad. My take is that it ought to at least be consistent with the treatment of e-mail.

So, watch what you're saying to me. IM watching... is



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Wizard/MultiValue Developer. ERIS has deployed enterprise-wide solutions on most MultiValue platforms and operating systems. HTM-Mel can be contacted at [mel@eriscorp.com](mailto:mel@eriscorp.com) and visited at [www.eriscorp.com](http://www.eriscorp.com). You can always call him directly at **ERIS's Pasadena, Calif., offices: (626) 535-9658.**

## 4 GL Briefing — Viságe

*Continued from page 15*

those new green-screen developments with field level changes). I don't think there would be too many "problems" that we haven't already tackled, and solved, years ago.

All of this is backed by a dedicated team of professionals, who not only have a hand in the evolution of the Viságe environment, but also use it on a daily basis to develop real applications, real quick! We support our product 1000%, and using tools like remote desktop can help diagnose problems, or run training sessions, anywhere in the world.

Our clients and VARs are also an extension of our team. Whilst in the early days most of the "good ideas" came from us, we have responded to their needs to take the product in new directions.

### **SPECTRUM: Last thoughts?**

Ross: As we already said, we can take people on a guided tour any time; all they need is access to the Internet. Our test-drive facilities allow people to have a sandbox for their development, whilst still allowing us to inter-actively guide and advise to fast track their development efforts and to get them productive ASAP.

Full evaluation versions are available free of charge, but we prefer people to "graduate" from the test-drive first, with a full knowledge of how to use the system to its full potential. We can also remotely help people to develop their app. It is all just part of our standard "red carpet" service. is



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(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"/> Contoller/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 12/06

## Object Orientation

*Continued from page 39*

Object code can use other objects and can also call regular subroutines, execute TCL commands, or any other operation that you desire. The code that runs inside of an object is still QMBasic.

Objects can be defined to “inherit” each other. This is actually a pretty advanced feature of OO languages, but think of it as an “include on steroids.” It allows you to write a class module that inherits all of the functionality of an existing object and then extend it with new functionality.

### Conclusion

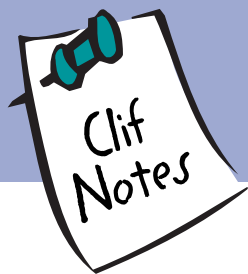
So we have created a superset of subroutines called Souped Up Subroutines. Actually, we have created Objects, or more precisely, added object oriented programming support to the existing QMBasic language. Once you have these programming structures, you can start creating really useful, reusable, programming modules that have functionality that far exceeds what can be done with old fashioned subroutines. The syntax to call them is more concise and tends to better self-document what is going on. Your subroutines get multiple entry points and local, persistent, storage and variables.

And you thought objects were hard.

The next article in this series will look at MultiValue based Object Orientation in greater depth. [IS](#)

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# We Wouldn't Snow You

BY CLIFTON OLIVER

It seemed like such a simple request. Traditionally, International Spectrum Magazine has used a Holiday theme for the cover art of the November/December issue. That seemed easy enough. Of course, here in the United States, we have been beaten up so badly in the last couple of years by the Political Correctness Goons that it is difficult for anyone thinking of printing anything remotely acknowledging the Holiday Season not to cringe. Last year the silliness got so bad that some folks were, only partly in jest, suggesting we just send out legal notices on all Holiday Greeting cards.

Okay. I can go along with part of this. Those who know me will confirm that I have a low tolerance for political correctness taken to extremes. But I agree with avoiding strong religious alignments in publications that go to such a diverse group of people as the Spectrum readership. A non-religious Holiday Theme magazine cover it shall be. Then I made my mistake.

Until now, International Spectrum Magazine has been distributed by print primarily in the United States. Our non-USA readers have either had to pay a subscription fee to cover international mailing, or download their copy in PDF format. As announced by Nathan in his From the Inside column in this issue, this is changing. The hard copy version of the magazine will now also be distributed in Australia and the United Kingdom. So we come to the "holiday" issue and I'm thinking, why don't we acknowledge the "International" part of the magazine's name. Recognizing that our readers in the Southern hemisphere will, in many cases, be reading this issue while sitting outside in shorts with temperatures in the 30 to 40

degree range (that's 86° to 104° F for us yanks), I made my request to Chay, our designer.

Secular Holiday Theme, but no snow.

No snow. How hard could that be? Apparently, very hard, unless you want to go with the tired, old Holiday Wreath thing (yawn). Besides, we've used that already. So here we are trying to find Seasonal cover art that will be easily recognized as "holiday" theme yet doesn't look like it came from Northern Europe or the Northeastern United States. This turns out to be extremely difficult to do. I mean, we could use a picture of the browning bodies of Bondi Beach, Sydney. But that is not going to invoke thoughts of Christmas Day to anyone here in the United States. (Well, maybe to some of us in San Diego who occasionally do get a chance to have a Christmas beach party—but don't go in the water!) I'd also get static from the Northeast US group who might accuse me of simply rubbing it in that they may make it to 6° C today, tonight is predicted to be -3° C. Meanwhile, like in Sydney, I'm sitting in the Southwest

in 30° C temperatures. So I don't even have to go outside the US borders to run into the same problem.

This is somewhat reminiscent of my first philosophical crisis when, as a young child, I realized that none of the houses in our area of San Diego had chimneys. Or my confusion with Christmas carols like "Over the River and Through the Woods." San Diego has dry river beds and desert chaparral. I was in my 30s before I spent a holiday season in New York and even found out what a chestnut was, let alone why you would want to roast the thing. The fact that the poor kids over in the sand, cactus, and Gila monster desert area of Phoenix had it worse didn't do much to solve my quandary.

So here I am again, struggling with the cultural baggage of the Holidays. Trees? Not used in all cultures. A picture of brightly wrapped gift packages with bows? Offensive in some cultures. Snowmen? Sand kangaroos? Nothing seemed to work across the board. This International thing was turning out to be much more difficult than I anticipated. So with deadline looming, I did the only thing an editor can do.

I gave up.

Hope you like the cover art. We're trying emphasize the Celebration aspect of things and ignoring all that white stuff. We'll try again next year. Maybe we can get the snow off the cover by the time That Place freezes over.

Best wishes for a great Holiday Season, however you celebrate them. is



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