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**8 GOALS, STRATEGIES,
AND TACTICS** If you run
a business, are starting one, or
working on marketing You, Inc.,
you have to plan and execute.
BY RICHARD L. P. SOLOSKY

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[FROM THE INSIDE]

In our market, Business and Programming go hand-in-hand. Many of you are not consultants, but IT managers, or Small to Medium-sized Business professionals. The magazine has always contained good technical content and information on how to use technology to improve your business. But sometimes you may have questions on how other businesses do things, or you are not sure how to do something specific within your business.

To help out with this, I have asked the magazine staff (Clif Oliver and Shannon Stoltz) to seek out content that would be of interest from more of a business perspective. As a result of this, the last four issues have had Charles Barouch's "Inventory for Programmers" Series. This series has received a lot of positive feedback.

In this issue you will see two articles relating to business that I hope you will enjoy: Finding the Right Fit (page 20) about hiring programmers and Goals, Strategies, and Tactics (page 8) about business planning. In including this kind of article in the magazine, my goal is to help enhance the technical content that we have always had. For those Geeks out there (like myself and Clif, our editor), don't worry; I don't plan on dropping the technical content from the magazine. The new business related articles were added for you SMB sector people who not only have to maintain your systems, but also run your business.

You will also be seeing more of this type of content at the International Spectrum Conferences. By adding this content to the Spectrum Conferences, I hope to provide more Value to the Conferences for the MIS managers and Small to Medium-sized Business professionals. You can get a taste of these sessions at the Regional Conferences by attending the "Marketing for IT Personnel" and "Hiring Programmers" sessions.

I would enjoy hearing from you, our readers, with suggestions of articles and conference sessions you would like to see, both technical as well as business related.

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

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NATHAN RECTOR
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CLIFTON OLIVER
Managing Editor

SHANNON STOLTZ
Associate Writer

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Revelation Offices - Global

Revelation Software, Inc.
Corporate Headquarters
99 Kinderkamack Road, 1st Floor
Westwood, NJ 07675
Toll Free: (800) 262-4747
Phone: (201) 594-1422
Fax: (201) 722-9815
Email: info@revelation.com
Web: www.revelation.com

Revelation Software Ltd.
45 St. Mary's Road
3rd Floor
Ealing
London, W5 5RG, UK
Phone: +44(0)208 912 1000
Fax: +44(0)208 912 1001
Email: info@revsoft.co.uk
Web: www.revsoft.co.uk

Revelation Software Australia Pty Ltd.
Suite 105
20 Dale Street
Brookvale, NSW 2100
Australia
Phone: +61-2-9939-6399
Fax: +61-2-9939-6366
Email: info@revelationsoftware.com.au
Web: www.revelationsoftware.com.au

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Web Ramblings

B Y M E L S O R I A N O

you
cannot
deploy
Ajax in a
haphazard
fashion

Hijaxed

It was bound to happen sooner or later. The reports that Ajax was a helpful and robust approach to creating interactive web sites has drawn the interest of those who play on the Dark Side. So, whereas Ajax-driven applications make it easy for programmers to build sites, it is also an opportunity for the virally-minded to attack a PC.

Internet security companies are reporting that Ajax has security problems that can make it vulnerable to an attack. The blend of JavaScript and XML has been called the Web 2.0, but it's also fertile compost for malicious code writers. So, while one used to worry about Microsoft's next stand against the hacker posse, we now see MySpace and Google trying to fend off attacks from desktop as well as web-based software.

It's all due to the transportability and ease of intermingling. Let's take Google for example. You can work on its online spreadsheets and share calendars, manage your photos and e-mail somewhat comparably to some of Microsoft Office; you merely access Google services through a browser, from any PC. Moreover, you can blend

blogs, news feeds and community-based web sites with these services, the data mixing into an intoxicating online cocktail. But this lends itself, unfortunately, to those more interested in identity theft and viral attacks.

Yahoo mail was struck earlier this summer. Someone sent an email with JavaScript embedded in the body. The JavaScript executed the AJAX XML requests and forwarded itself to everyone on the recipient's address list. The worm then was able to keep on propagating with any email reader that allowed JavaScript/Ajax execution to occur. The spam lists created by this worm were probably enormous.

Google's RSS news feed was hijacked this summer as well. It was shown that by twisting Google's news feed address request, you can redirect the browser to a different site. Since most web users make exceptions on their pop-up blocker software to places such as Yahoo and Google, the redirected sites can circumvent such safety measures.

This type of cross-site scripting was blown open late last year on MySpace. See, Samy (yup, some kid in L.A.) wrote a lovely worm that had a sole intention of making him the most popular person on MySpace. You see, on MySpace, you can add someone to your list of heroes. By exploiting a little Ajax code, the worm was able to add a person to Samy's list without getting that person's approval. Moreover, anyone viewing that person's profile would be infected and run the Ajax code. In

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Innovations by InterSystems



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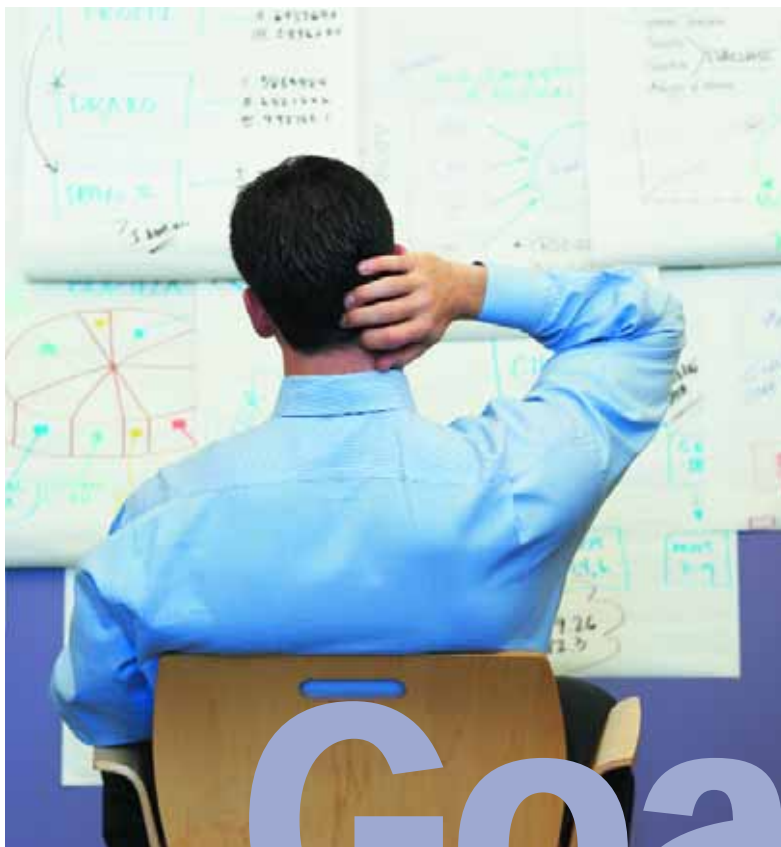
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'06 is over,
what you need
to do to have a
killer 2007!

Goals, Strategies and Tactics

By Richard L. P. Solosky

Some 25 years ago, I got my first job selling office equipment. I was fortunate to have the top salesperson in the company take me under his wing. Perhaps he saw a hidden talent, or maybe I just reminded him of his little brother. Nevertheless, I still remember a thing or two he taught me.

Like, "smile when you're talking on the telephone, it will come across in your voice." Plus little time management things like, "When is the best time to make a phone call?" "Right Now!" And one really important thing, "plan your work and work your plan."

To that, I'd like to add, "Any plan is better than no plan!"

I'm guessing many of you are technicians, were once, or are at least technicians at heart. Remember when you were first starting out? Maybe you had a great idea that you just had to








run with. Maybe you developed a killer application for a client and knew that everyone would want it. Or perhaps you just realized you could do it better than your boss. No matter the circumstance, you did one of two things. You just started, flying by the seat of your pants, or you created a business plan, because that's what was expected.

Maybe that business plan is in your head, or maybe it's gathering dust on the shelf. If I were a betting man, I'd wager you haven't looked at, or thought about it, in years. There are three things that every successful busi-

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Goals Strategies and Tactics

Continued from page 8

ness does: Spend less money than they earn, learn from their mistakes, and plan for the future.

Every business needs a game plan. Not that formal thing you wrote when you first started out, with lots of statistics talking about the market, but a basic game plan of what you want to do for each year. It's a living, breathing document, one that you revise and tweak all the time.

It's never too late to get started, and with '07 just around the corner, today is a great day to plan for tomorrow. In writing a plan the most important thing to do is to write! Don't fool yourself, because until you do, you don't have a plan. Don't worry about format or whether you're a good writer. It's your plan. Who cares how it looks?

In order to develop this plan, you first need to look at the big picture—the big picture through the eyes of a thing called SWOT Analysis.

SWOT Analysis

This core business development tool is where you determine your strengths and weaknesses, which are internal to your company, and uncover opportuni-

ties and identify threats which are external to your business.

Let's take a quick look at each category:

Strengths: What do you do better than anyone else? Can you identify what is

unique to your application? Exactly what advantages does your company or product have? Do you know what people in your market see as your strengths?

In determining your strengths, think about what unique resources to which you have access and then play them up.

Weaknesses: Take a hard look at your business and identify where you can improve. Poll your customers and vendors and find out what people in your market see

as your weaknesses. Then, think about what you should avoid. Are you really ready to introduce that new software module?

Opportunities: What's your market doing? Are you aware of any interesting trends in your market or field? Useful opportunities can come from such things as changes in technology and

markets, or changes in government policies related to your field; does Sarbanes Oxley come to mind? What about changes in social patterns, population profiles, and lifestyles? Do you have a blog in your industry?

Threats: What obstacles do you face, and what is your competition doing?

Are the required specifications for your job, products, or services changing?

Is changing technology threatening your position? Do you have bad debt or cash flow problems?

Consider whether any of these threats or weaknesses seriously menace your business, either now or in the future. Once you identify them, you can plan to take action.

With your SWOT analysis completed, you can begin to craft a strategy that helps you distinguish yourself from your competitors. This is also known as positioning, and it helps you compete successfully in your marketplace.

Strategy

What exactly is your marketing strategy? Are you the cost effective option? Are you on the leading edge of technology and forging ahead of the competition with innovative products and services? Are you the solid conservative voice of reason in your industry, or is great customer service your hallmark?

You probably have several corporate or product advantages in your head. But have you compared them to where your competition is aiming? A critical element of every strategic, marketing, or game plan is figuring out what the competition is doing.

If you're confident in your strengths, you may feel strongly about facing your competition head-to-head. On the other hand, you may want to take a close look at where the competition isn't focused. Employing this strategy, you carve out a specific niche in the marketplace, work hard to own it, and

Voice
your value
proposition
out loud
and then
add the
words, "so
what?"

then expand it to a position of strength. Whatever your strategy, you must define your position in the marketplace, and that boils down to your value proposition.

Value Proposition

What value do you bring to the marketplace? How do you differ from the competition? Why should anyone buy your product or service? A value proposition is a clear statement of what a customer or client receives from using your products or services. The best value propositions are very specific and they clearly define what you do better than anyone else. Or another way to look at it is from the customers' viewpoint, "what's in it for me?"

A weak value proposition is the death knell of the mediocre business. Voice your value proposition out loud and

then add the words, "so what?" "XYZ Company offers the fastest software in the MultiValue market." "So what?" When defining your value proposition you might try this neat little trick; define it in terms of tangible results. "Our software routinely reduces our client's corporate overhead by 15% per year." In a quantifiable way, your value proposition needs to speak to the critical issues your customers face every day.

But don't jump the gun, because before you get started on your journey, the first thing you need to know is where you have been, where you are now, and where you are going. So it's time to set some goals.

Objectives/Goals

They are crucial to any viable business. Without them, you have nothing to measure success against. The key is to

make your goals realistic and measurable so you can easily evaluate your performance.


Goal setting is the easy part of your planning. One way to get started is to look at your sales over the last several years. Have they gone up, down, stayed relatively stable? Just take last year's number, or find a reasonable average and increase it by a modest percentage. Congratulations! You have just set your goal!

Ok, you're getting closer to writing your plan, so the next thing to think about is, "what are you going to do to get the word out and increase business?"

Tactics

Your tactics will include all the actionable steps you plan to take for advertising, public relations, direct mail, trade shows, and special promotions.

Continues on page 12



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Goals, Strategies and Tactics

Continued from page 11

There are all kinds of tactics you can use to get the word out about your products and services. In today's technological marketplace, the rules change daily. You can stick to the tried and proven and choose the traditional, like print advertising, mail campaigns, brochures, and good old fashioned cold-calling.

Or, you may choose to work with some of the newer tactics from e-mail blasts and blogging, to streaming web video. Whatever tactics you choose, make sure everything points back to a well thought-out website. In today's world, your website is the cornerstone for marketing your business, services, and products. Make sure that it captures the reader's imagination in the first few seconds they arrive, and don't let them go until they understand your message.

Overall, keep in mind when you are designing your marketing materials and campaigns to remember a marketing basic; play up your benefits (not features). Many confuse the two, placing too much emphasis on descriptions of the company and/or product rather than on what practical results the product will deliver.

Lastly, it's important to schedule your tactics; stick to your calendar and follow through.

Putting it all together...

So you have done your homework. You know what position you want in

the marketplace, you know what numbers you plan to achieve, and you know what tactics you will employ and when. You're almost done. Now it is time to put it all together.

Situation Analysis

With all this information in place, the next thing to write is an overview of your situation as it exists today. Nothing fancy, but it will provide a useful benchmark as you adapt and refine your plan. It should contain a short description of your current product or service offering, the marketing advantages and challenges you face, and a look at the threats posed by your competitors, or other outside forces that will affect your business in the coming year.

Budget Breakdown

Now it's time to mix all the ingredients together. Add your goals, strategy, and tactics to the plan along with your calendar and the final section of your plan, a brief breakdown of the costs associated with each of your tactics.

You're done. That's about all there is to it! You now have a plan. It's not that daunting a task. While your first version will take some effort, you will find as you continue to define your products and services and refine your plan, it will get easier and better. Most importantly, don't forget that a plan on paper is only useful if it's put into action.

So, with the plan in place, there is one last thing to employ...

Measurement

Track your game plan progress throughout the year. Create a regular schedule of meetings, and make adjustments to the plan based upon verifiable progress indicators.

Stay tuned; because in upcoming articles, we will dissect many of these puzzle pieces and demystify some of the ABC's of growing your business and taking it to the next level. 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 devel-

opment companies and thoroughly

understands the day-to-day challenges

faced by the typical SMB. He is Presi-

dent and CEO of Questus Strategies, a

business development consultancy ded-

icated to assisting small businesses

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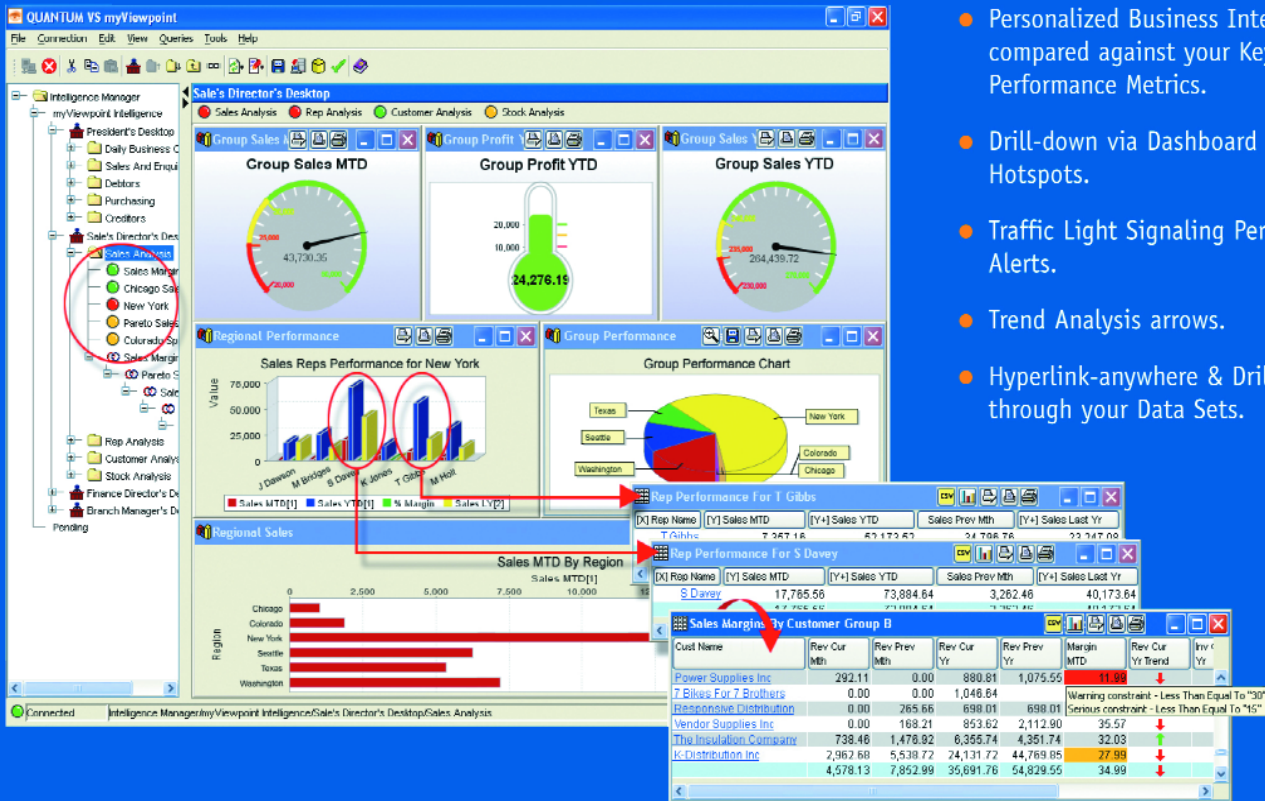
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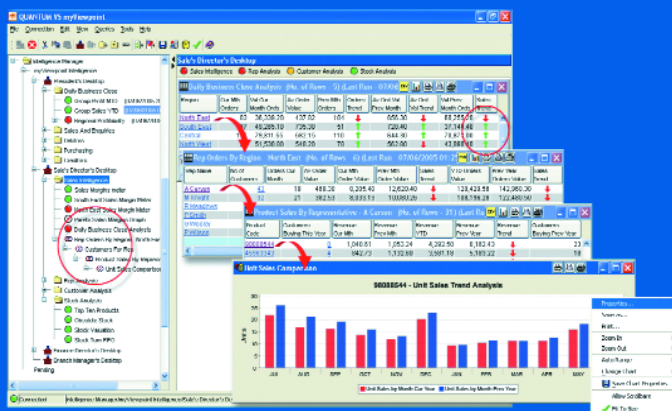
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SOX

The Third Year

The experts
at the top
and the
PCAOB
themselves—
are in
absolute
agreement
that we did
too much.

Even if you are unaffected by the Sarbanes-Oxley Act of 2002, you have probably heard of it by now. These two guys, Senator Sarbanes and Representative Oxley, on the eve of their retirement, have achieved a notoriety and a marrying of their names into the affectionate nickname SOX that I'm sure they never expected to see.

The Sarbanes-Oxley Act demonstrates firm resolve by the US Congress to improve corporate responsibility. The Act was created to restore investor confidence in US public markets, which was damaged by business scandals and lapses in corporate governance. Although the Act and supporting regulations have rewritten the rules for accountability, disclosure, and reporting, the Act's many pages of legalese support a simple premise: good corporate governance and ethical business practices are no longer optional niceties.

"The Sarbanes-Oxley Act was passed by the US Congress and signed into law by the President on July 30, 2002. Among other provisions, section 404 of the Act requires public companies registered with the SEC and their auditors to annually assess and report on the design and effectiveness of internal control over financial reporting."

— IT Governance Institute

It was well-intentioned but not well planned, and there have been a number of deadline push-backs and a whole lot of confusion since its signing into law. Now we've arrived at the end of year three for the earliest filers and the end of the first year for even the latest filers—"foreign private issuers"—and things are beginning to settle down (although section 404 filings have been delayed for another year for most companies).

After three years of newfound fame, the language of IT governance has worked its way into our vernacular. Although we've gotten over calling the SEC's Public Company Accounting Oversight Board (PCAOB) "Peek-a-boo,"

not many of us have forgiven them for being so late to the party. They published what they called a "Guidance" that finally shed some light onto what on earth we were supposed to be doing it—eighteen months after we started doing it. But with that Guidance and new exposure for Cobit and COSO we've come to understand that a framework is not just two inches of wood around a pretty picture, and controls can be more complex than the ones on our VCR. (If Cobit, COSO, framework and controls are not meaningful to you, you may have escaped and should endeavor to remain pure!)

In looking back over these past three years, I am reminded of the first time I ever spent New Year's Eve in Times Square to witness the ball-dropping and the debauchery first hand. Far more memorable were the sensations experienced walking down the street the morning after—you can see, hear and, I assure you, smell the party leftovers. The glaring morning sunlight bears none of the whisky-softened,

neon-lighted abstraction of the night before. In many ways—perhaps excluding smell—the wind-down of year three of Sarbanes-Oxley feels the same. Granted, the party was not as much fun. But it was every bit as frantic, noisy, and certainly more expensive. (I don't care where your room was on Times Square.)

So, here in the aftermath, most of us want to know how we stack up against other companies. For those of us in the MultiValue space, it is particularly interesting to see how we stack up against each other and against what we so lovingly refer to as "the mainstream." It has been a revelation for some of us to find out just how alike we all are. Most of us were initially "gapped" (this is a verbification of the situation where there is a gap between what is required and what actually "is") on the same things. Everyone was changing software on the production system, at least sometimes (some more than others). And an incredibly high percentage of companies were rou-

tinely editing data on production to correct errors left by programs with known bugs. And all companies have under-resourced departments full of mad-hatters (meaning people who madly wear multiple hats). When suddenly these things were simply not allowed, companies came crawling out of the woodwork with these common flaws. Flaws and practices that a lot of us had come to think of as, well, non-mainstream.

The mad-hatter issue, which has actually come to be known as "SOD (Segregation of Duty) violations" are, in fact, the most common lingering deficiencies. We've got to find some more heads for those hats!

For the most part, our efforts to improve our controls and to meet the requirements have been fruitful. We "passed SOX," and we've even had the luxury of the last couple of years to work on improvements and cost-cutting. Sure enough the numbers are in

Continues on page 16

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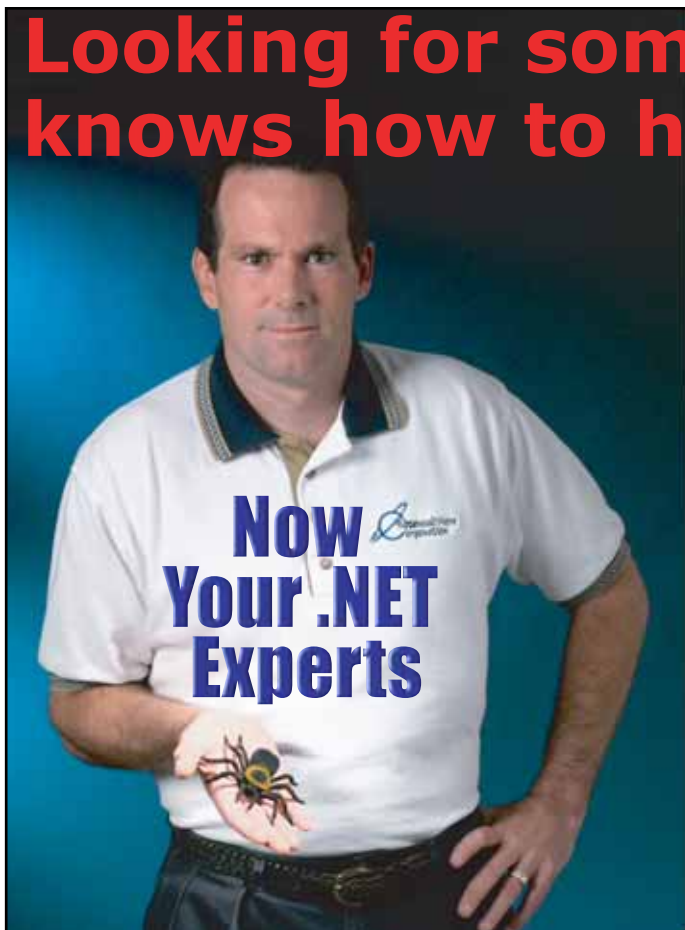
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SOX

The Third Year

Continued from page 15

and costs dropped by almost 20 percent, both years. Whew! Everyone can relax and breathe a sigh of relief ... for about a nanosecond before you are smacked with the word sustainability. Because, guess what? You don't "do" SOX compliance. You live it. It's forever. (And just as an aside for any of you folks still subscribing to the "It won't last" school of thought, cancel your subscription. It's not going anywhere.)

Not surprisingly, we found that the minute we had our processes documented and our "controls" in place, they became obsolete. So now we not only have to have change control, we have to have change control for our change control controls.

One of my favorite euphemisms that was born into "auditor speak" with SOX is the term "operational efficiencies." This is a fancy way of saying, "do it better." This is supposed to be our payback for the effort. Yes, we complied, and nobody went to jail. Victory! But what else can we get? If we were clever about our controls or if we're prepared to get more clever about them, we can improve process, save the company money, and end world hunger—all by improving our "operational efficiencies."

Everyone—my own customers, the auditors I meet in the field, the experts at the top and the PCAOB themselves—are in absolute agreement that we did too much. We documented too much, put too many controls in place, and stacked up way too much paper. So the latest (April 2006) Guidance issued from the PCAOB is now all about how to trim down.

So what's on our minds in the year 3 AS (after SOX)? Each of the following topics is a hot button for this year, and each deserves far more explanation and insight than is offered here, but we'll do what we can.

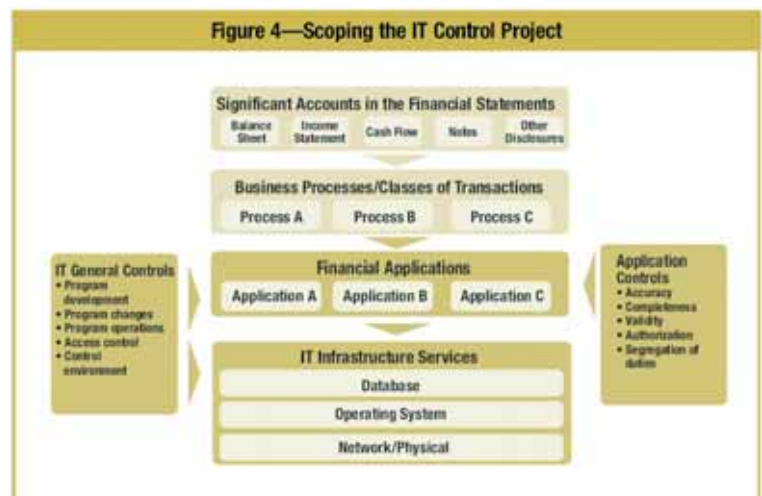
Sustainability: The biggest overall focus this year will be on how to transition into a sustainable, or what those of us in IT like to call "maintenance," mode. According to the ITGI Guideline: "At this point, IT management should be in a position to assess the IT internal control program effectiveness. Effective internal controls, control assessment and management competencies must become part of the IT department's organization and culture and sustain themselves over the long term. Control is not an event; it is a process that requires continuous support."

Outsourcing and third-party vendors: This issue receives the Hot Button of the Year Award. When your company relies on an outside vendor or outsource for anything impacting financial reporting, it is still your companies' responsibility to have controls in place. A SAS 70 report is a certification document signed by an outside auditor that attests to a vendor or outsource company's own internal controls. So the battle began to get SAS 70's from outside companies to varying degrees of success, and in some cases, instigating a change of vendor. There has been a certain amount of forgiveness around this issue simply because reality has dictated that it must be so. But now this issue is moving to the forefront. Some companies are waking up to the realization that SAS 70's that they have gotten from 3rd parties and that have been languishing in files are coming up flawed under scrutiny. The PCAOB is issuing new guidance to help companies develop internal controls around a vendor or outsource whose own controls are flawed or who cannot provide SAS 70.

EUCs/Silos/(Interfaces and Conversions): EUC is a new acronym this year. Last year, we were focusing on

spreadsheets. This year the term End User Computing expands that concept to include access databases and other PC-based software packages that are relied on for everything from payroll calculations to pension management to fixed asset accounting to amortization schedules. These data "silos" have been the number one cause of material weaknesses because often the interface is manual. So there need to be new /more controls over the interface and/or conversion procedure, if these EUCs must remain. But the best case scenario is to automate those procedures, to integrate them into IT (the company's main application software).

Top-down, risk-based approach: When the PCAOB recommended the COSO framework, many companies used it as a checklist and incorporated every control listed into their own internal controls. This is viewed as a bottom-up approach. The PCAOB is recommending that we change our view to top-down and risk-based. This means we should start with the financial reports that we are striving to protect and work our way down through the chart of accounts for the accounts that have the most significant impact and then view those with an eye for which ones are at the greatest risk. (See figure 4. All figures in this article are taken from IT Control



Objectives for Sarbanes-Oxley, 2nd Edition, IT Governance Institute, 2006.)

These will be what have been coined our "key controls," or relevant controls. We should start there and possibly discard the other controls that we may

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SOX

The Third Year

Continued from page 16

have overzealously included in our framework.

Rationalize Controls:

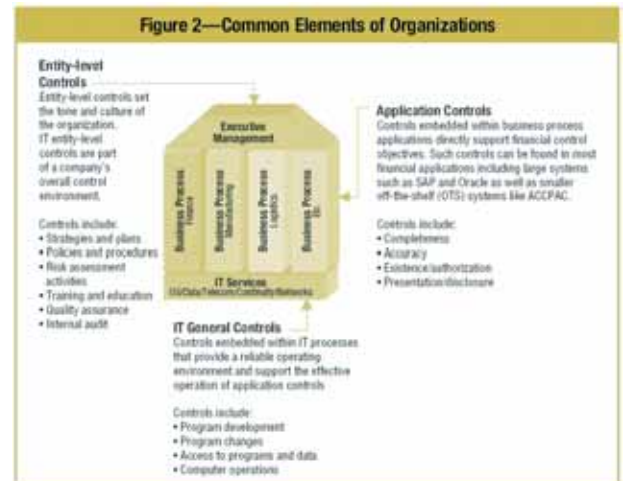
Control rationalization (or elimination) is another initiative that should take place in the sustainment phase. Undoubtedly, there will be some controls that are documented that, over time, become less and less useful. Companies should periodically review their controls to identify which controls can be eliminated from the control listing. In doing so, consideration should be given to the impact of removing a control and documentation prepared explaining the rationale as to why the control was removed.

Baselining and benchmarking: The PCAOB wants to use the word "benchmark," but I'm not the only one who thinks that the term baseline more nearly describes this concept. But whichever word you use, this will quickly become a favorite because it is a method of identifying what we don't have to do. We can "benchmark" a control that has not changed since the last test by stating that it has not changed and therefore does not need to be tested.

Automating application controls and reducing the number of general controls: Application Controls are controls embedded within business process applications that directly support financial control objectives. Such controls can be found in most financial applications. A very simple example of an application control is insuring that an invoice can not be generated for an invalid customer, or perhaps for a customer that is over their credit limit.

IT General Controls are Controls embedded within IT process, overall. Such as password protection and change control procedures. (See figure 2)

In many cases the application level controls are actually already automated in the software, but the business-



owner doesn't know it, and the IT-process owner doesn't realize what it is. It's a matching error. So a company can realize a huge savings by getting business and IT owners together to walk thru controls and find places where manual testing and manual controls can be eliminated simply by identifying existing application controls.

Even if application controls need to be developed into the application, the time is well-invested. A manual control that must be tested with a sample size of (typically) 25 is considered acceptable with a sample size of one. Or to be thorough, two—one that passes and one that fails. So in the long run, automated application controls are more reliable and will save time in test and audit. (See figure 26)

The number of general controls can be reduced as well. For example, most auditors are coming around to the idea that Operating System level and Network level general controls can be moved out of scope. An astoundingly revelatory statement was recently made by the PCAOB to the effect that General Controls can never (by themselves) result in a material weakness.

Figure 26—Comparison of Manual and Application Control Approaches

Manual Control Approach		Automated Control Approach	
Total controls	500	Total controls	500
Effort to document per control	1 hour	Effort to document per control	3 hours
Total effort to document	500 hours	Total effort to document	1,500 hours
Average sample size per control	10	Average sample size per control	1
Total sample items to test	5,000	Total sample items to test	500
Effort to test per sample	30 minutes	Effort to test per sample	30 minutes
Total effort to test	2,500 hours	Total effort to test	250 hours
Total effort	3,000 hours	Total effort	1,750 hours

Company-level or entity-level controls can be put in place that are pervasive and may reduce the need to test the general controls at a more detailed level.

“Mapping” Many companies are saving money in the long run by investing the time in mapping the control frameworks to each other so that the same control is not tested under its COSO control in the financial audit, and then tested again under it’s Cobit control in the IT audit. Since this mapping reduces the number of tests that must be performed by outside audit, it has a direct and immediate impact on cost.

Self-assessment: Further reducing the money spent on outside auditors, many companies have instituted programs of self-assessment. This means that there are independent individuals (from newly formed dedicated departments or just cross testing for each other) that pre-test before internal audit. It’s like a nested internal audit — someone to check things over even before the internal audit takes place. This provides departments and process-owners the opportunity to fix problems before they become public and costly. Often, the results of the self-assessments can be relied upon by internal audit and then by the outside auditors.

It looks to this observer like the fourth year of Sarbanes-Oxley may be both easier and more productive,

allowing organizations to find ways to capitalize on the investments made hurriedly over the past couple of years. is

S U S A N J O S L Y N is the author of PRC, a complete, integrated Software Development Life-cycle Management tool for MultiValue-based IT. She has worked with MultiValue software the beginning (hers and MultiValue’s) has specialized in quality, compliance and life-cycle productivity issues since the early 1990’s.



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Finding the Right Fit

Recruiting and Hiring MultiValue Programmers

Not hiring the right person is a costly mistake, especially when hiring programmers.

The process of recruiting, interview, and training new employees costs money and consumes time. But how and where do you find that right person?

into that experience.

However, finding relatively new MultiValue programmers can be challenge. "You really have to search them out," said Matt Hart. Hiring someone out of school and training them, is "easier said than done," according to Matt. "They usually have no interest in this technology... they tend to be difficult to retain, leaving within six months."

Another possible source is a non-technical person already in your industry or business. Nathan Rector suggests getting "someone who has the business background and teach them to program." Citing the ease of MultiValue Basic and the design of MultiValue systems, Nathan suggests that it is easier and faster to teach someone MultiValue programming than it is to teach a programmer business.

"I'm confident we can train up and mentor the person we need," said Brian McMahon, owner of PICK Programmer's Shop, who advocates hiring the right person, regardless of technical skills. PICK Programmer's Shop's formal mentoring program grew out of their internal need to develop programmers' skills and blossomed into a service offering for their clients.

The first step is to identify what you are looking for in a programmer and what you need.

How much experience do you need?

According to Matt Hart, a Senior Recruiter at Execu-Sys, the average MultiValue programmer has 15+ years of experience. In the 1980s, several large companies were each bringing 10-15 new MultiValue programmers into the market per year. Today, employers are able to tap

Hiring and training a new MultiValue programmer does take time. According to Brian, it can take anywhere from three to six months for a new programmer to be fully productive.

Does industry or vertical software experience matter?

Do you have the time to teach a programmer your business, your industry, and your software package? Typically it takes up to a year for a programmer to really understand a new industry. If you are looking for someone who can be productive on day one, you probably want to look for a programmer who is familiar with your industry and/or your software package.

Do you need a coder, an analyst, or both?

What do you really want in a programmer? Someone who codes according to requirements and standards or someone

who can perform the complete software development cycle? Do you need someone who will enjoy sitting in a cubicle all day coding or do you need someone who likes working with users on a day-to-day basis?

Larry Okeson, Executive Vice President at Software Search, Inc, points out that “for a programmer to do what they need to do, they tend to be introverted, a detailed person.” He warns that an outgoing programmer with great communications skills may not be the best person for a position that requires a lot of coding with little people interaction.

On the other hand, McMahon said, “the largest mistake I’ve witnessed is hiring non-thinkers —programmers who don’t or can’t think.” They have the coding skills but have no other skill sets. If you need a person who thinks about the

business, can meet with people, inquire, take notes, and solve problems, look for a candidate with these skills.

According to Hart, finding a programmer with good interpersonal and communication skills, who can do the full project life cycle, including analysis, and who is a good coder is difficult. A multi-tiered interview process and talking with references who were former coworkers can help shed light on a programmer’s

people and communication skills.

Does the Programmer need to be Promotable?

Is your focus on grooming a programmer for a future in management, or are you primarily interested in filling the current need? Hart reminds us, “Some programmers don’t want to be promoted.” Okeson recommends “hiring a person for the job they are going to be doing, rather than for the future.” After all, the average programmer stays in a position for three to five years, and a good programmer does not necessarily make a good manager.

“The largest mistake I’ve witnessed is hiring nonthinkers—programmers who don’t or can’t think.”

Finding Candidates

Once you have a good idea of what kind of programmer you need, it’s time to start your search. Since MultiValue programming is a niche market, some methods are more effective than others. The first choice however is whether to perform your search yourself or use a recruiting firm.

Typically a recruiting firm expedites the hiring process by providing high-quality, pre-screened candidates who can be productive immediately. According to Okeson, of Software Search, using a recruiter who specializes in MultiValue marketplace is more effective than using a general search firm. “They don’t have any idea of what MultiValue is, so it pays to use us or Matt [Hart of Execu-Sys].”

In the MultiValue marketplace, both Software Search and Execu-Sys have extensive databases of MultiValue professionals and years of personal connections to draw from. Both companies report that they can provide clients with qualified resumes within 24 to 48 hours of a request.

“People are scared by the [recruiting] fees,” said Hart, “but they don’t think about the return on investment.” If a client is serious and has the time for the interview process, he said a client can be interviewing qualified candidates within three to five days.

In addition to screening candidates for MultiValue experience, both recruiting firms cross-reference for the vertical industry and MultiValue software experience. They both also check references, talking not only to the provided references but also others in their personal network who have worked with or side-by-side with the candidate.

Continues on page 22

Finding the Right Fit

Continued from page 21

But using a recruiter isn't for everyone. If you have the time and the resources, performing your own search is also an option. The most effective means is through networking. McMahon said "word of mouth" is the most effective recruiting technique for PICK Programmer's Shop. Though, he does also save all resumes that have been submitted to him through their web site.

"We know all the companies who are running MultiValue systems in our area," said McMahon. "We can generally call someone up and say 'Hey, we're looking for the right person...'"

The general consensus is that newspaper advertising and online advertising can be time consuming and relatively ineffective. According to Hart, a Mon-

ster.com ad can yield 80-100 responses, of which only a handful are qualified candidates. Software Search runs their ads on CareerBuilder.com and uses Monster.com to search for new resumes. McMahon has tried newspapers and online advertising, but found it to be ineffective.

Finding the Right Fit

No matter how you find your candidates, the most important step is finding the right fit. That can only be done through an interview process and by

checking references. Most successful searches employ a three-step interview process, involving a preliminary phone screening, an in-person interview, and a follow-up interview.

Successful candidates usually show job stability, a good work ethic, an ability to handle multiple responsibilities, technical skills or aptitudes, and an attitude and goals that align with the company. The final interview often includes time with potential coworkers to ensure a good team fit.

Once you find that fit, be prepared to make a decision and an offer. Hart tells us that in today's active market, "Time kills deals." Companies are losing out on candidates when too much time goes by between the interview and the offer. is

SHANNON STOLTZ is a freelance writer specializing in business and technology. Have you solved a business problem with your MultiValue system? Let us share your solution with our readers. To be featured in a future case study, contact Shannon at Shannon_Stoltz@hotmail.com.

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Zumasys Named to CRN's Fast-Growth 100 List



Zumasys announced that the company has been named one of the 100 fastest growing solution providers by Computer Reseller News (CRN), a CMP Media magazine. Growing net sales by 60%, Zumasys is one of 25 companies to appear on the list in both 2005 and 2006.

CRN's Fast-Growth 100 identifies the 100 fastest growing solution providers across all specialty areas and business models. The profiles and data developed by CRN's editorial staff provide insight into which models and technology are proving to be the most lucrative.

Zumasys specializes in implementing innovative IT solutions that reduce costs and boost productivity. Zumasys enjoys fast growth and high customer satisfaction by listening to the needs of the customer, building strong relationships, and custom tailoring multi-vendor technology solutions that deliver results.

"Two years ago we recommitted ourselves to providing excellent customer service, and we began offering several new and innovative support offerings. The response from our customers has been incredible," stated Paul Giobbi, president of Zumasys. "As we

continue to gain more strategic relevance to our customers and as they outsource more of their IT, we expect our strong growth to continue."

Zumasys offers national on-site installation services, telephone support, disaster recovery, and business continuity planning and managed services agreements for customers looking to outsource their IT infrastructure. The company was formed in September 2000. Zumasys is headquartered in Lake Forest, CA with a Northern California office in San Jose.

"As the channel's vital resource, CRN is solely focused on the Solution Provider community. This list, created by our editorial team, recognizes the Solution Providers that have worked tirelessly to support their customers. We salute them on their superior growth," said Dan Dignam, publisher of CRN.

About Computer Reseller News (CRN)

CRN provides Solution Providers and Technology Integrators with the crucial information and analysis they need to drive their company's sales. As an

advocate for and voice of the Channel, Solution Providers turn to CRN first for immediate information. With more than 20 years of experience, CRN is the most trusted source for 117,000 channel professionals. CRN is published by CMP Media, a marketing solutions company serving the technology, healthcare and lifestyles industries. Through its market-leading portfolio of trusted information brands, CMP Media has earned the confidence of more professionals and enthusiasts in these fields than any other media company. As a result, CMP is the premier provider of access, insight and actionable programs designed to connect sellers and buyers in each of these industries in ways that yield superior return on investment. CMP Media is a subsidiary of United Business Media (<http://www.unitedbusiness-media.com>), a global provider of news distribution and specialist information services with a market capitalization of more than \$3 billion. ■

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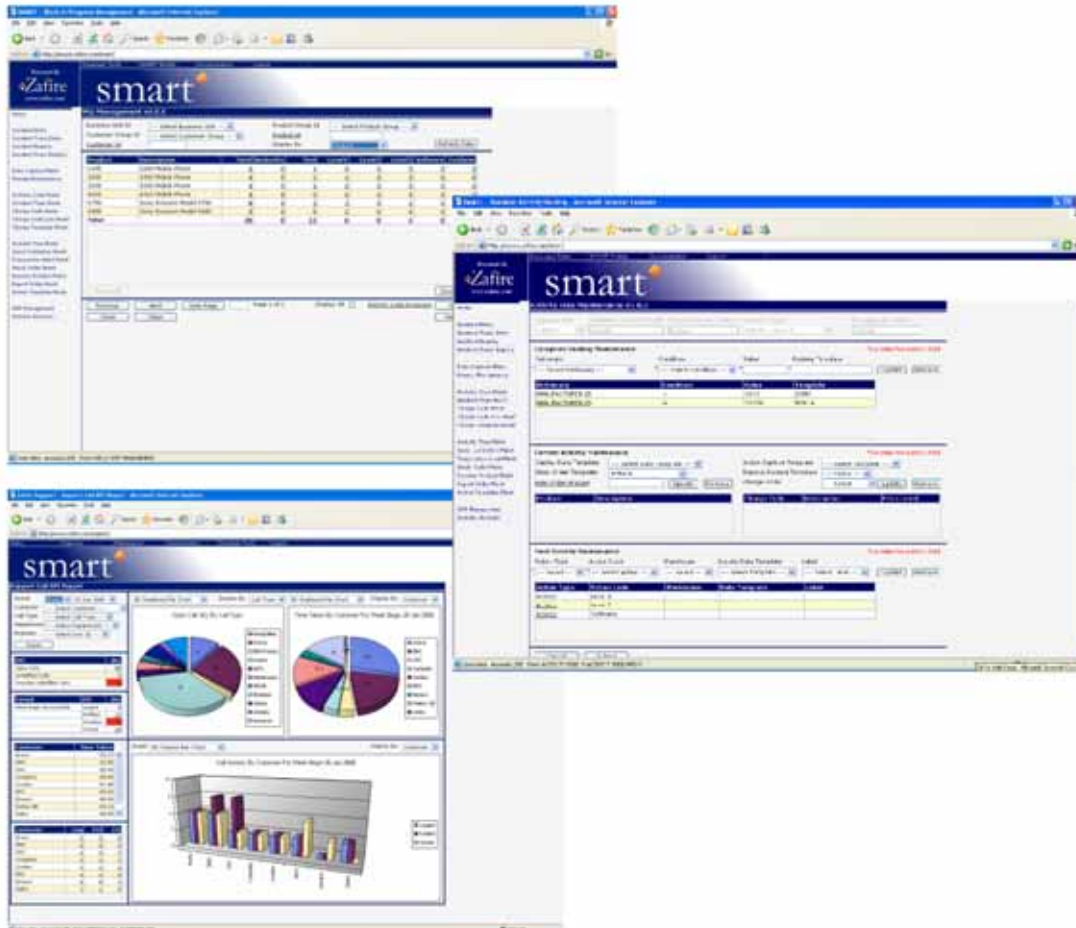


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jBASE User Conference: Spring 2007 - Florida



A jBASE User Conference is currently under consideration for the spring of 2007 in Florida. The objective of this conference is to provide a forum to share ideas, to learn from the experience of fellow users, and to discuss products and issues within the jBASE community. A wide range of topics from product direction, building real life solutions, and advice from the developers are being considered. The following is just a sample of possible sessions:

Product Roadmap: a look into the future from the jBASE Development Team.

Upgrading to Release 4.1.5: for sites who wish to investigate upgrading their 3.4 installation to Release 4.

Advanced Compilation Techniques: various usages of jcompile on 4.1, including the setup and usage of make and makefiles.

jBASE Tips & Tricks: a range of topics including file sizing, system performance tuning, phantom processes, and database structure.

Application Profiling: how to analyze your applications to determine potential bottlenecks or trouble spots within the application code.

Transaction Journaling: explore the various ways that you can increase the reliability, availability and redundancy of your information by taking advantage of jBASE transaction logging techniques, hot-stand-by configurations, and the latest in transactional management methods.

jBASE Remote Connectivity Services: delve into the inner workings of this true client-server connectivity library which leverages the power of jBASE.

DREM: Data at Rest Encryption Module: learn all about this powerful new cross-platform jEDI that supports 128-bit encryption and decryption of data at the file system level.

MultiValue / Microsoft .NET Integration: a demonstration using Visual Studio .NET as the development environment for a complete jBASE application!

Source Code Control: options and strategies for using source code control software (i.e. Perforce, CVS, Subversion, etc.) with jBASE and jBC.

jBASE Case Studies: see what can be achieved when the power and flexibility of jBASE is put to work.

Supporting jBASE: arm Help Desk staff with the fundamental jBASE knowledge needed to help answer questions from a jBASE perspective

And many, many more: your suggestions are welcomed!

BONUS: Visual Studio Development for MultiValue Data

jBASE Partner, BlueFinity International, will be hosting a one day seminar in the same location immediately after the jBASE User Conference!

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- Utilize effective tools to deliver rich client, web and web services based applications

Your input is needed! The jBASE User Conference 2007 can only take place with your participation. Please take a moment to fill out the questionnaire at www.jbase.com to help to further plan for the event. If there is enough interest in the conference, dates and locations will be announced soon. Your suggestions can help to make the jBASE User Conference 2007 a success

Call for Speakers
Everyone at jBASE believes strongly that customer-to-customer communication benefits the whole community. You are invited to join jBASE in making the User Conference 2007 event a better learning experience. If you have a topic that you think would be of interest and you would like to speak, please email kerid@jbase.com. ■

More Information

Additional details will be posted to www.jbase.com as they become available.

NEW PRODUCTS

Binary Star Brings Wiki to MultiValue

Binary Star Development Corporation, the makers of the NUCLEUS, have announced the immediate availability of NuWiki, the first Wiki for MultiValue platforms.

According to Lee Bacall, President of Binary Star, "Wikis are the hot topic in IT today. They are quite possibly the killer-app for the next few years as businesses look to them as a means of collaborative documentation."

Bacall added, "Unlike most commercial Wiki packages in the market today that involve a wide array of scripting languages and databases such as MySQL, NuWiki runs entirely inside the MultiValue environment, so Pick shops can leverage their existing talent without a huge learning curve."

"NuWiki is much more than a documentation platform. It's a new way of looking at database applications that defy normalization to standardized input routines. One Wiki site we know of is a large California bank who uses Wiki to track their in-house PC's. When a tech needs to know about a particular system, she can open the Wiki topic for that machine, see its entire work history, and record any changes made to the system. They love it. It simplifies paperwork and data-entry, and the data is always up to date."

"Harvey pulled another rabbit out of his hat on this one," Bacall said, referring to Harvey Rodstein, the Chief Developer of NuWiki. Working closely with Jonathan E. Sisk, Chief Editor, they researched how other Wikis worked and emulated the best of the features into a surprisingly robust and feature-rich product."

NuWiki can be seen and experienced at NuWiki.com. No registration is required to visit NuWiki, but is required to Contribute to or change topics. And just like all of the public Wikis, all changes and revisions to topics are logged in case a rollback to a previous version is ever required.

A number of NuWiki service plans are available, including publicly hosted and privately hosted configurations. Custom installations on your own equipment to support unique security and management concerns of any organization are available. Please contact Lee Bacall toll-free at 866-882-1888, or +1 (954)791-8575 for more information. ■

New Products

AVAILABILITY OF Informer Web Reporting System v3.2



Entrinsik Inc. proudly announces the general release of Informer version 3.2, the culmination of months of redesign and feature engineering.

With Informer v3.2, Entrinsik again demonstrates a commitment to maintain its reputation as the best in class reporting solution vendor for the IBM U2 family of database products. "This release contains many new feature requests from our growing customer base," according to Andrew Moravati, Informer Product Manager. "We are particularly excited about the new Informer Community Feature, allowing customers using the same base application software to share reports with each

other with a single click. We envision communities quickly cropping up among each group of our software VAR communities."

"With this release, we also changed much of the product underpinnings," said Brad Leupen, Chief Technical Officer at Entrinsik. "By exposing Informer's business logic API to the end-user via Web Services and RMI, we have effectively enabled an entirely new class of U2-data-driven applications. Now you can embed Informer reports and Meta definitions directly within your intranet or desktop applications. This new Web Service and RMI façade is also an exciting new feature for their growing base of OEM customers – many of whom are embedding Informer directly and seamlessly into existing legacy applications."

Unique to Informer is the notable ease of use for report consumers, accomplished through the Informer Meta File – an abstraction of

the common dictionary in IBM U2 systems. Meta Files allow technical users to link files together and define for reporting only those dictionary fields they find useful, and to give those fields non-technical descriptions. This in turn allows Informer users outside the IT staff to create and modify reports without requiring extensive knowledge of the underlying database structure, resulting in a drastic decrease in users requiring IT resources to get to the data they need. Informer users become empowered to access their data, and to customize the view to their requirements.

"This 3.2 release represents 5 years of listening to our customer requests and developing the most feature rich web reporting tool for UniVerse and UniData," said Doug Leupen, President and CEO. "We are confident Informer is the most mature, powerful, intuitive web reporting software for the U2 market."

For more information about Informer Web Reporting Software including a complete list of all of the new features of 3.2, visit Entrinsik's Web Site at www.entrinsik.com/Informer.

About Entrinsik

Entrinsik, Inc. headquartered in Raleigh, NC, provides software and services focused on the IBM U2 family of database products. Entrinsik's Informer Web Reporting System is the industry leader for reporting systems for UniVerse and UniData. Their SEMtek product is an enterprise solution for continuing education, training, and conference providers. Founded in 1984 and in the MultiValue market since, Entrinsik aims to provide leading edge technology and unsurpassed service to their customers. For more information visit Entrinsik at <http://www.entrinsik.com> or call 1.919.848.4828. ■

CASE STUDY:

Thomas Home Center



Upgrade to D³ and Windows Terminal Server Reduces Company's Overhead

“Without the computer system, we’re dead,” says Tom Rector, president and owner of Thomas Home Center, a manufacturing and retail operation serving the home improvement and new construction market. Located in McKinleyville, California, Thomas Home Center is a multi-faceted business covering retail hardware, equipment rentals, overhead doors, cabinets, trusses, and pre-hung doors.

The business’ day-to-day operations rely on its custom MultiValue-based software. Over the last twenty years, the company has built and adapted their software to meet their growing business needs. Today, quoting, bidding, and ordering processing for all areas of the business are integrated with inventory, cash registers, delivery dispatch, accounting, payroll, and human resources. *Continues on page 30*

CASE STUDY: Thomas Home Center

Continued from page 29

Outgrowing AP/Pro

The company came to the MultiValue market in 1987 when Tom upgraded the company's IBM System/32 computers to a PICK-based Fujitsu system. "I wanted something that allowed us to be much more self-sufficient in hardware and software management. I found that PICK was much simpler to work with." In the early 90s, the company outgrew its Fujitsu system and moved to AP/Pro running on a PC.

Last year, they outgrew their computer system again. The AP/Pro system was only licensed for 32 people, but they had 50 users who needed computer access. On Wednesdays, when all the employees were in the office, not everyone could sign on. Since the company and the number of employees needing computer access continues to grow, they needed more licenses. The existing system could not grow any further.

In addition to the AP/Pro system, the company also had a fax server, a Windows file server, an e-mail/web server, and 30 different PC-based workstations all running on a stand-alone attached net-

work. Many of the PCs were Pentium I's running Windows 95 or Windows 98 and being primarily used as dumb terminals because the hardware couldn't support other Windows-based software.

Maintenance was becoming a headache. Adding software was "a nightmare." Any-

time a new person started or moved to different area, or even needed new software, an IT person had to physically go to that computer to make the changes. Power outages during the winter months added to the maintenance overhead.

Decisions to Make

They had two choices: 1) continue to piece the system together bit by bit, or 2) change everything out. Because the business is so reliant on the computer system, the decision was made to price what it would take to upgrade everything: servers, workstations, phones, and fax.

Because the MultiValue system easily allows them to evolve their current software with the changing business needs, they did not consider moving off of the MultiValue platform. Instead they decided to take the natural upgrade path from AP/Pro to D3/Linux.

Having a "high level of trust with Zumasys" from past purchases, they talked with Zumasys about the choices for hardware. According to Rector, they wanted to stay with "generic [non-

proprietary] hardware" because they've found it to have more upgrade options, easier to get parts, and less expensive. In the end, they chose two HP ML350 servers, one running D3/Linux and the other running Windows 2003. The Windows 2003 server replaced the e-mail/internet server, fax server, and Windows file server.

Because the MultiValue system easily allows them to evolve their current software with the changing business needs, they did not consider moving off of the MultiValue platform.

They chose to replace all but seven workstations with HP Thin Clients. Running active directory and terminal services on the Windows 2003 server allowed them to run both Windows applications and their MultiValue software on the thin clients, without the maintenance and overhead of PC workstations. Seven workstations were needed to run graphics-intensive CAD and engineering programs.

To address the power outages, they decided to replace their UPS systems, which yielded 20 minutes of auxiliary power, with a generator that could run not just the computer systems, but also the entire building, including phones and lights, for the duration of a power outage.

Expecting Implementation Problems

"We went into it assuming the upgrade would not go smoothly," said Rector. "All upgrades have problems. Philosophically, we believed, one, things weren't going to go perfectly, and two, we couldn't anticipate everything. We built the implementation around that thinking."

They implemented in two stages: a preliminary test and then full implementation. Early on, they identified the processes that were no longer compatible and tested the hardware.

"Linux is new to us and new in its abilities," he said. "We took a file-save and loaded it on the new hardware and did our learning that way—looking for the obvious. There's always a reality behind the sales literature. We were looking for the reality."

Reaping the Benefits

Overall, they replaced the AP/Pro system with D3/Linux and experienced a 10x improvement in responsiveness and speed as well as improved reliability. The Windows 2003 server replaced three independent servers. Fifteen workstations were replaced with HP Thin Clients connected with Windows Terminal Services. Seven CAD and Engineering workstations were con-

nected using Active Directory and Windows Terminal Services.

The centralized security management and centralized application software and deployment available with Windows Terminal Services cut the time spent maintaining the computer system. Now, instead of spending a day setting up a new workstation—unloading pre-loaded software and loading new software—a thin client can be unboxed and connected to the network in a few minutes.

Each employee has their own Windows desktop on the server. So no matter which thin client an employee signs on to, all of their software and settings follow them. For personnel who share or float between workstations (thin clients), like retail sales personnel and backup receptionists, the ability to perform their normal daily duties at any workstation improves productivity.

Taking advantage of the centralized security management, a utility was added to the payroll and HR management system to automate adds, removes, and changes based on employee status changes. If a new employee is hired, the utility automatically creates all the user profile and security needed for that person and their position. If an employee moves from accounting to sales, then the utility automatically removes the accounting authority and adds the sales authority.

The new configuration also allowed for better e-mail integration, implementation of instant messaging with the appropriate security, and more secure web access and monitoring.

Enhanced business continuity was also a benefit to the new system. Not only does the new generator ensure they stay in business while competitors are without power, the new operating system adds new backup procedures they hadn't had access to before and the hardware has redundancies built into it. "We're dead without it," said Rector. "We needed to have a system that

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could be saved...and reloaded on another box quickly."

According to Tom Rector, the upgrade to D3/Linux and Windows 2003 server

running Active Directory and Windows Terminal Services has been a positive move for Thomas Home Center; "It's nice to have a system you don't have to think about. It's just there." is

SHANNON STOLTZ is a freelance writer specializing in business and technology. Have you solved a business problem with your MultiValue system? Let us share your solution with our readers. To be featured in a future case study, contact Shannon at Shannon_Stoltz@hotmail.com.

Customizing ASP.NET 2.0 Security

BY BRIAN LEACH

One of the many concerns to occupy web application developers is authentication. As organizations increasingly deploy essential systems for browser access, hand-coding secure verification is no longer an option. For the sanity of all involved, web application frameworks need to provide a level of integrated security out of the box that is as simple to manage and straightforward to implement as their traditional counterparts.

With ASP.NET 2.0, Microsoft added a number of key technologies to address some of the difficulties faced by web application designers, including site navigation and login security. With only minimal effort, ASP.NET 2.0 developers can secure their applications using simple controls for verifying and registering users, presenting alternate views for authenticated and anonymous users, and for enabling or disabling access to various sections of a web site using role-based security.

The ASP.NET 2.0 security model is useful in its own right, but the real test comes when you need to integrate web security with existing application security, such as that usually found in mature MultiValue systems. Preferably this means keeping credentials in one place.

ASP.NET 2.0 typically uses SQL Server Express to maintain a database of user and role definitions, using a built-in role manager. Microsoft also provides out-of-the-box role managers for SQL Server and for Active Directory. The

good news is that Microsoft has made it relatively simple to add customized security classes that can integrate neatly both with the ASP.NET 2.0 runtime at the front end and with MultiValue data at the back end.

Security Providers

Security and role management, along with many of the new facilities in .NET 2.0, are handled by specialist classes called Providers. This “provider model” is deliberately designed to offer maximum flexibility and extensibility. You can replace the existing providers with your own custom providers to match the way you need to work.

For this article, I will present an ASP.NET 2.0 web site interacting with a UniVerse or UniData database through RedBack, but the same principles apply using another MultiValue database and the connection of your choice.

Membership and Roles

Membership facilities are presented through visual components that can be added to a web application. At the heart of this are three Web UI components: the CreateUserWizard, LoginView, and the Login controls (Figure 1).

The Login control (on top) presents the user interface for validation. The CreateUserWizard control (beneath) presents

FIGURE 2



the user interface for registration. User credentials are created here, or by using an ASP.NET configuration page (Figure 2), launched from the Website menu within Visual Studio, that sets up users and roles.

Authentication can be implemented in three ways.

Location Security

First, an ASP.NET 2.0 web site can be divided into a number of locations using a folder structure. Each location can be associated with a set of access restrictions in the web.config file. Navigation controls, such as the menu and tree view controls, are aware of the location restrictions and will not display inaccessible pages.

For example, you may have a series of pages that between them provide

FIGURE 1



the site administration functionality. To secure all of these in a single operation, simply place them in a nominated directory (here named AdminPages) and restrict those to a role (here called Administrators) as shown in Figure 3.

FIGURE 3

```
<location path="AdminPages">
  <system.web>
    <authorization>
      <allow roles="Administrators"/>
      <deny users="*" />
    </authorization>
  </system.web>
</location>
```

Runtime Role Checking

Second, ASP.NET 2.0 pages can test for the logged in user identity and user roles at run time through the System.Web.Security.Roles class. Use this to provide user-specific content or to enable or disable features through code (Figure 4).

LoginView

Finally, the LoginView control is a container that presents one of two separate views at runtime: one for authenticated users and one for users who have not logged into the website.

For example, a login page may present the Login controls within a LoginView for non-authenticated users only, and a separate welcome message for authenticated users.

FIGURE 4

```
Protected Sub EnableSaveButton()
  Dim currentUser As String

  currentUser = Context.User.Identity.Name
  If currentUser <> "" Then
    If Roles.IsUserInRole(currentUser, "Administrators") Then
      SaveButton.Enabled = True
    End If
  End If
End Sub
```

Adding Membership Validation to a Website

To see the Membership verification, create a new ASP.NET web site and add a LoginView control to the Default.aspx page. This offers two views. Select the AnonymousTemplate view and place a LoginUser and CreateUserWizard control into this view. The result should look similar to Figure 1.

Next, select the LoggedInUser view and type in the text "You are logged in as". Place a LoginName control next to the text. The LoginName control displays the user's Login Id.

Finally add the lines shown in Figure 5 into your web.config file:

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Select the Website->ASP.net Configuration from the Visual Studio menus to show the Website Administration page in Figure 2. Click the Security tag and add a new user named demo with an appropriate password.

Finally, run your project. You will see a page with the Login panel presented. Log in as demo with your password, and the view will change to show the login welcome message and your

FIGURE 5

```
<roleManager enabled="true"/>
<authentication mode="Forms">
  <forms loginUrl="Default.aspx" protection="Validation" timeout="300" />
</authentication>
```

user id, signalling that you are now authenticated.

Next, you can do the same using a custom membership provider.

Creating a Custom Membership Provider

Membership validation is carried out by a System.Web.Security.MembershipProvider class.

The standard ASP.NET 2.0 membership details are:

- User id
- Email address (for password reminders)
- Password
- Password question (optional)
- Password question answer (optional)

Customizing ASP.NET 2.0 Security

Continued from page 33

For simplicity, create a file named NET_USERS in a RedBack enabled account as shown in Figure 6.

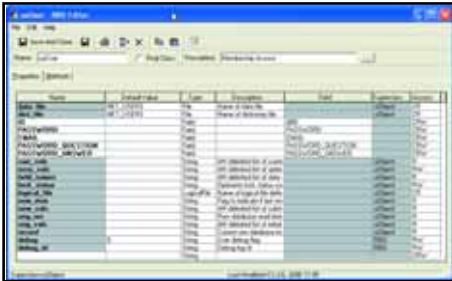
Because the data is held in a single file, we can access this using a simple uObject RBO.

This is a RedBack Business Object with built-in methods for reading and writing data to a file.

Start the RedBack Designer and open a connection to the account holding the NET_USERS file. Create a new RedBack module named SECURITY, and within that create a new RBO using a uObject as the parent.

Name the new object uoUser, and complete the definition with the fields from the NET_USERS file as seen in Figure 7.

FIGURE 7



As always, test the RBO using the RedBack scoping tool before using it in production.

Building the Provider

To create the new provider, open your web application in Visual Studio 2005.

If using RedBack, you will need to create a reference to the RedPages library for the project. Click on Website->Add Reference and choose the RedPages type library from the COM tab.

Next, you need a custom provider to read and write membership information to the NET_USERS file using the uoUser RBO you created above.

Select Website-> New Item and choose the Class template. Name the class RBMembershipProvider and accept

FIGURE 6

Field Name	Field No	Format
ID	0	10L
PASSWORD	1	10L
EMAIL	2	30L
PASSWORD_QUESTION	3	30L
PASSWORD_ANSWER	4	30L

App_Code as the save location. At the start of the class, enter the text:

```
Inherits System.Web.Security.MembershipProvider.
```

Visual Studio will automatically fill out the required members in your class (Figure 8).

As a minimum, you need to implement the CreateUser and ValidateUser functions.

Add the declaration and rough-and-ready functions shown in Figure 9 to instantiate the uoUser RBO and to read and write data, substituting your own connection name.

Creating the Website User Details

Now to implement the CreateUser function. This is called from the CreateUserWizard that you added to your web page to register a new user. The function is passed a list of parameters from the registration control and returns both a status and a new MembershipUser object (Figure 10).

Login User Validation

The ValidateUser function authenticates against the supplied username and password, though you can add your own validations, logging or ancillary processing into the function (Figure 11).

The CreateUser and ValidateUser methods will suffice to demonstrate the custom provider. Other functions are equally self-explanatory and can be completed at your leisure.

Using the Provider

Your web application needs to be told to use the new provider in place of the standard SQL Express provider. Insert the text from Figure 12 into the system.web section of your web.config file to instruct ASP.NET 2.0 to use your new provider as the Default membership provider.

Testing the Custom Provider

Run the web application and complete the Registration details for a new user using the CreateUserWizard control. Click the Create User button. This will call the CreateUser function in your new provider and will update the NET_USERS file with the details of the new user.

FIGURE 8

```
Public Class RBMembershipProvider
    Inherits MembershipProvider

    Public Overrides Property ApplicationName() As String
        Get
        End Get
        Set(ByVal value As String)

        End Set
    End Property

    Public Overrides Function ChangePassword(ByVal username As String, ByVal oldPassword As String, ByVal newPassword As String) As Boolean
        End Function
    (etc)
```

Once the user details have been stored, they can be used to test the login validation.

Further Stages

You can complete your custom provider by implementing the remaining functions: amending the user details, assigning new passwords, emailing password reminders, and returning lists of users for the administration pages.

You can extend the provider in other directions by including your own features within the published functions. You might, for example, wish to keep track of logged in users, add your own audit logs, and provide additional validation. You might wish to enhance

FIGURE 9

```

Private ro As REDPAGESLib.RedObject

Private Function InitRBO() As Boolean
    Dim RBOName As String = ""

    RBOName = "SECURITY:uoUser"

    ro = New REDPAGESLib.RedObject

    Try
        ro.Open2(ConnectionName, RBOName, "", "", "")
    Catch ex As Exception
        Return False
    End Try
    Return True
End Function

Private Function ReadUser(ByVal UserId As String) As Boolean
    Dim prop As REDPAGESLib.RedProperty
    prop = ro.Property("ID")
    prop.Value = UserId
    Try
        ro.CallMethod("ReadData")
    Catch ex As Exception
        Return False
    End Try
    Return True
End Function

Private Function WriteUser() As Boolean
    Try
        ro.CallMethod("WriteData")
    Catch ex As Exception
        Return False
    End Try
    Return True
End Function
    
```

your uoUser RBO to call existing security subroutines.

The MembershipProvider is limited to membership validation. To make full use of role based security, you can implement a custom System.Web.Security.RoleProvider using exactly the same techniques. The RoleProvider contains a simpler series of methods for adding or deleting roles, and for assigning users to those roles. [iS](#)

B R I A N L E A C H is a UK based U2 consultant specializing in client/server and web development, education services and tools. He has used UniVerse since 1990, VB and Delphi from their earliest days, and .NET since it became useful. Brian is Vice President of the U2UG. Contact him at brian@brianleach.co.uk or www.brianleach.co.uk

FIGURE 11

```

<system.web>
  <membership defaultProvider="RBMembershipProvider">
    <providers>
      <add name="RBMembershipProvider"
          type="RBMembershipProvider"
          requiresQuestionAndAnswer="true">
      </add>
    </providers>
  </membership>
</system.web>
    
```

FIGURE 12

```

Public Overrides Function ValidateUser(ByVal username As String,
ByVal password As String) As Boolean
    If InitRBO() Then
        If ReadUser(username) Then
            If password = ro.Property("PASSWORD").Value Then
                Return True
            End If
        End If
    End If
End Function
    
```

FIGURE 10

```

Public Overrides Function CreateUser(ByVal username As String, ByVal password As String,
ByVal email As String, ByVal passwordQuestion As String, ByVal passwordAnswer As String,
ByVal isApproved As Boolean, ByVal providerUserKey As Object, ByRef status As
System.Web.Security.MembershipCreateStatus) As System.Web.Security.MembershipUser
    If InitRBO() Then

        If ReadUser(username) Then
            If ro.Property("PASSWORD").Value <> "" Then
                ' user already exists ...
                status = MembershipCreateStatus.DuplicateUserName
                Return Nothing
            End If

            ro.Property("PASSWORD").Value = password
            ro.Property("EMAIL").Value = email
            ro.Property("PASSWORD_QUESTION").Value = passwordQuestion
            ro.Property("PASSWORD_ANSWER").Value = passwordAnswer
            If WriteUser() Then
                status = MembershipCreateStatus.Success

                Return New MembershipUser("RBMembershipProvider", username,
                    Nothing, email, passwordQuestion, Nothing, True, False, Now,
                    Nothing, Nothing, Nothing, Nothing)
            End If
        End If
        status = MembershipCreateStatus.ProviderError
        Return Nothing
    End Function
    
```

Corrections

In the May/June 2006 issue, we misspelled Revelation Software's product name in the title of their article, "Ajax and OpenInsight."

In that same issue, the screen image shown on the IBM SB+ 4GL Briefing was incorrect. This is the correct Order Entry screen.

We apologize for the errors.



Inventory *for* Programmers

(Part IV)

Nightly Morphing Dynamic Data

Inventory changes when you sell it, move it, or consume it. Morphing data is different. It can change in meaningful ways without needing any of the traditional mechanisms.

Other People's Inventory

Obviously, if you are in the shipping business, you will spend time managing other people's inventory. However, both overtly and covertly, many other businesses are running third party inventories. When you go to the supermarket, in many cases, you are looking at shelves which have, in effect, been rented to suppliers and manufacturers. The laundry detergent you just bought from the local supermarket doesn't necessarily belong to them. It may well be third-party.

Fulfillment houses, consignment stores, and many other diverse businesses are overtly or covertly in the business of storing, selling, giving, or holding other people's goods. The examples and the variations are nearly endless. The challenges which arise are much more definable.

This inventory is significantly different from your own in many ways. The issue of ownership must affect how inventory is handled by your computer system. For example, other people's inventory has a value but it doesn't have a valuation. The difference is that value affects things like insurance while valuation affects things like the net worth of your company. A courier service who ships diamonds needs to track the value (for insurance) but they would be committing fraud if they added the diamonds to the company valuation.

Another key point is that others people's inventory will increase without you buying more or making more. It can decrease without sales or shrinkage (that's the technical term for loss of inventory due to damage or theft). If it is

theirs, they can take it back without paying you. They can send more without your asking for it.

Other People's Data

There's also a secondary revenue opportunity with third-party inventory. If you hold it and count it, you will be generating reports and inquires about it. This ability to report it can be sold as a service. An excellent example is the ability to track shipments by order number.

My friend Steve Christ used to, in the days of poor computer integration, move a pushpin along a map each day to estimate, based on normal shipping times, how close the boat from China was likely to be. He couldn't query the shipping company back then, so estimation was his only tool. Nowadays, I take my '1Z' number, pop on to the UPS website, and track it myself. That tracking tool cuts down on calls asking "where's my package," and that translates into savings for everyone who ships with UPS. With all the major players and many second tier players offering these sort of services, their customers (the shippers) save money and their ultimate customers (the receivers) get excellent service.

So, even if I'm a very small player, I can multiply my value to customers by tracking part numbers, quantities, selling patterns, and other facts that I have simply by having their inventory. By doing this better, faster, easier, we can turn the IT work of inventory into a profit center in third party situations.

Virtual Inventory

Go to iTunes and download a song. You've now touched the ultimate in (Just in Time) manufacturing. As we discussed in the last installment, downloadable music and

software are categories where we build finished goods without consuming raw materials. Since it is generally created at need — at the moment of download — it doesn't become inventory until it is sold. We still need to think of it as another form of morphing inventory.

Since this inventory just sort of "appears" as it goes to the customer, we could be tempted to say it isn't inventory, but we'd be going down a disastrous path. This magically appearing inventory still requires delivery confirmation, a return/refund policy, and all the other things that define it as real inventory. If for no other reason than that it has a financial value, it has to be tracked as you would track any other sold item.

You could apply similar concerns to the generated forms business. Let's say you are a fulfillment house working with colleges and you agree to manage the generation of acceptance letters. The letter has no cash value, but as a father of college-aged girls, I know the importance of making sure it was delivered in an auditable, timely fashion. Even if the letters were delivered by e-mail—making them even less inventory intensive than paper mail—you would still need careful inventory control.

Environment

A broken air conditioner can void entire inventories. Contamination can turn Prime Beef into hazardous waste. Certain types of inventory have a shelf life or value proposition that can be severely altered by environmental factors. Don't just limit your thinking to food items or other perishables. Ice (wet or dry) only exists in certain controlled conditions. Just try shipping wool sweaters that have been stored in a damp place and you'll see the shipping weight go up and the quality of goods go down.

While environment effects inventory, it also effects demand. Since demand reduces inventory, we don't just care about the temperature in the warehouse. We need to look outside as well. You sell air conditioners cheaper in the dead of winter. You sell fewer snow shovels if it doesn't snow. My brother-in-law who works for P.C. Richard knows when they will be selling more barbecue grills and when they'll be selling more space heaters. Ask the local florist and they'll tell you that every flower has a peak selling seasons.

Aging

Some stock is affected by the passage of time. If you stock milk, no matter how carefully you store it, it will cease to be salable after a set amount of time. Other inventory has softer boundaries on when it will age out. For example, when I worked for Quick International Courier, we stocked leeches. Now, while no one stamped a "use by" or

"sell by" date on the blood suckers, they will certainly become, shall we say, ineffective after a certain point.

By contrast, some things get better with age. A wine inventory can keep gaining value, just by being held. Other inventories follow more chaotic patterns. An inventory of stock certificates can gain value, lose value, or become worthless, just by being held.

The inventory most affected by time is time itself. If you think about it, many professionals sell their time. Since you can't sell June 2006 hours in December 2006, every service-based business which engages in time-based billing is running a system with morphing inventory. While you may not track hours as inventory, they do have a potential value, and they are delivered to specific people or businesses with an expectation of cash return.

Time can change inventory salability, value, and category.

In summary, normal inventory usually starts with a purchase order (bought) or a bill of materials (manufactured). These morphic inventories can also start with a shipment (other people's inventory), a conversion (juice into wine, stock into successor stock), or JIT creation (music files, software, pay-per-view TV). Normal inventory usually ends with a shipment (sale) or a variance (shrinkage—damage and loss—accounted during a physical inventory). Morphic inventory can also age out (food stuffs), suffer thermal shock (livestock, frozen goods), or perhaps it just evaporates (dry ice).

Writing software to handle this range breaks the normal mold of buy-build-store-sell-ship. At the same time, we are faced with the challenge of making some or all of this work without breaking the parts of the system which should enforce the traditional mold. If you look at advertisements for software and systems lately, you see words like agile, on demand, and responsive. Our MultiValue systems have an edge in all of these areas. It's up to us as designers and implementers to keep that edge by writing responsive, agile software that provides information on demand. 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.

Charles.Barouch.Results@KeyAlly.com - Consulting; Zeus@MtOlympus.us - ETL/Migration/Integration; (718) 762-3884x1

4 GL Briefing — Nucleus

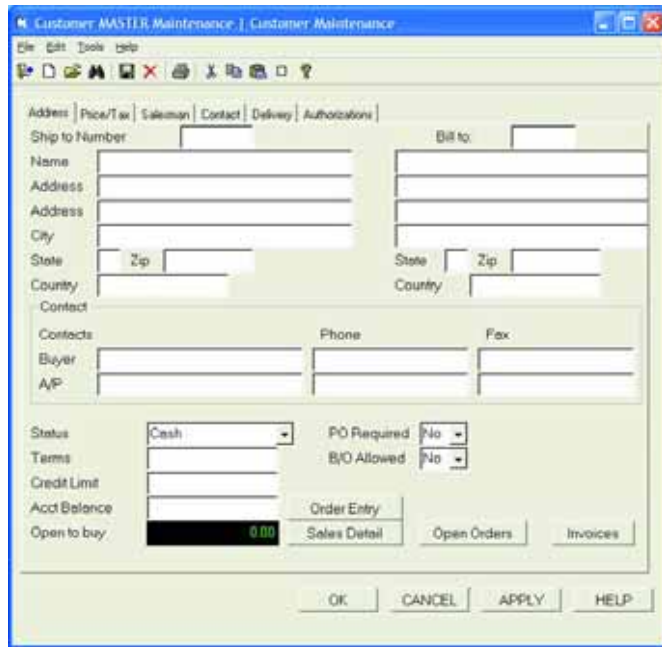
Lee Bacall is the President of Binary Star. We sat down to talk about his 4GL, the history between him and Nucleus Architect, Harvey Rodstein, John Sisk's new project, and some insights into what's next.

SPECTRUM: You and Harvey Rodstein are the two stars of Binary Star. How did you and Harvey meet?

Bacall: I met Harvey at a class that he was teaching for JES. Harvey told all of us that one day we would write programs around the data dictionaries. We all walked out shaking our heads, but we knew that if Harvey was saying it, it would eventually be true.

I was blown away. I made a point of it to get to know Harvey real well after that. So, in 1985, he and I started a company, BinaryStar development, and had our first client a week later.

We started developing the product as a practical thing. See, just before we formed the company, Harvey and I got together at the Sequoia Users Group meeting in Clearwater, Florida. He showed me this tool kit he had. He took an application I'd spent three or four months building and he rewrote the application in three hours. It didn't have any bugs in it, and it looked ever



so much better. It even had an underlying security structure.

SPECTRUM: So that was the genesis of Nucleus?

Bacall: Well no, it starts before that. Nucleus is the outgrowth of a book that Harvey wrote, John Sisk was the editor, called *PICK For Professionals: Advanced Methods and Techniques*. In that book Harvey outlined a lot of what became Nucleus. There are ways to use the system resources to do a lot of the heavy lifting. We built on that idea.

SPECTRUM: What does Nucleus do for a developer that they can't do on the green screen?

Bacall: It's not just an alternative to the green screen. Nucleus allows you

to be device independent. If you want to deploy on a PC or Mac running an emulation of a green screen, yeah, that works. Or, attach the StarSite interface and deploy the same code on the web. Or incorporate it into .NET. Use a GUI, like AccuTerm's if you prefer. You get the same set of rules. If you have dumb terminals in the warehouse, they work, too.

It offers future potential, as well. For example, StarSite generates JavaScript, so we are already working to extend it to Ajax. You aren't limited.

We also can do things outside the traditional areas. We have an exciting new project, NuWiki, that grew from our problems managing our own documentation. John Sisk has a lot of experience with documentation. He had some good insights in how to manage soft data, like text. We realized the huge potential that it had for other people, not just as an internal tool. With NuWiki, we have created a conceptual overview of the whole Nucleus process. You can look at files, interface layers, any one of those things, and drill down until you understand. By looking at the things you need to see as you need them, you learn Nucleus much faster.

It does what a traditional Wiki does, it allows people to work together. It also answers a lot of regulation challenges. Government requires all sorts of compliance, Sarbanes-Oxley and HIPPA in the US, for example. With NuWiki, all the changes — when, where, and by who — are documented. You have a full audit trail. You can provide those responses during an audit. And our source code control works the same way as the wiki, so the logs work together. So, we are addressing those questions.

Also, we have all the commands for OpenQM in a NuWiki. We'll be making that available to the world by the time this article appears. (www.NuWiki.com)

SPECTRUM: What is the relationship between Nucleus and OpenQM?

Bacall: OpenQM is a very interesting product. Sam Anderson and Doug Demitru, both very bright guys, got interested in what Ladybridge was doing with it. That got me interested. It turns out, it is extremely fast and very well supported. They are constantly growing features.

Binary Star has agreed to bundle a free, noncommercial version of Nucleus with OpenQM, which is the noncommercial version of QM. You can get it from www.OpenQM.org.

SPECTRUM: Where else does Nucleus run?

Bacall: We run on UniVerse, UniData, Reality X, QM, D3, UniVision, Power 95, R91. We've run on jBASE. We have a conversion from OpenInsight and one from RevG.

SPECTRUM: You've mentioned Nucleus and StarSite. How do they go together? Are there other pieces to the puzzle?

Bacall: The development tool set, the full screen editor, version and change control, life cycle promotion utilities (dev to beta to release), security, three report writers, several interface layers—all that is included in Nucleus itself. It

also includes diagnostic tools, a print manager, and other built-in features that your products inherit just because you build on top of Nucleus.

StarSite, which enables you to create interactive web applications, like forms and the NuWiki, is separate. We also offer NRG, Nucleus Rapid GUI, which incorporates AccuTerm's GUI tools transparently into Nucleus. We take advantage of the design tools AccuTerm provides. Within minutes, your character based Nucleus program is not only GUI, but it takes advantage of all the add-ons that AccuTerm provides. I think it's wonderful.

We also have other things, like MvLaser, which let's your applications work with PCL5 printers.

SPECTRUM: As a programmer, what do I have to know in order to use this product?

Bacall: If the developer understands dictionaries, file structure, and has basic BASIC programming skills, they can begin to develop in under an hour. One can become an expert in three months. We are in the process of developing online learning, like the NuWiki, to help accelerate the process.

Nucleus is an event driven environment. Your code can respond to anything that happens. You end up writing smaller bits of code—pre-field events, post-write events, and so on—for a continual cycle of checking where the user is and what they need done. It's a state engine which

"If the developer understands dictionaries, file structure, and has basic BASIC programming skills, they can begin to develop in under an hour."

determines what needs to occur. It knows when to trigger your code.

One of the nice features Nucleus has is that when you maintain an application, you can isolate which code happens when; you can drill down to just the code that's pertinent. Nucleus let's you extract subsections of your code so that you are looking at the right stuff, not running through miles of code. It was designed by a programmer for a programmer.

SPECTRUM: Since you developed Nucleus as you worked for clients, did you find Nucleus taking on a slant toward a particular industry or category of business?

Bacall: No, it's not vertical, it's a horizontal piece of software. It's for the reseller who wants to create an application which he wants to resell to the world. It just opens you up from the limits. It works for small shops and it works for big shops. We have clients where three or four hundred users are just banging away at the applications all day long. We are in lots of industries: education, city and county government, courier, transportation, testing laboratories, you name it. It works for anybody who has to manage complex data. 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.
Charles.Barouch.Results@KeyAlly.com - Consulting; Zeus@MtOlympus.us - ETL/Migration/Integration;
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Revelation Software's Spin on the Web - Three Years On

Over three years ago, Revelation submitted an article to International Spectrum Magazine entitled "Revelation's Spin on the Web" (July/August 2003) in which we described our current level of technology and techniques for working with the World Wide Web. In the three years since, both technology and user expectations and demands have increased. At that time, Ajax was just a cleaning product line, Software As A Service was what consultants did, and ASP.NET was still in its infancy. We at Revelation Software have made advances as well with our web processing technology, and at the request of some readers, we offer this update.

Using OpenInsight, you can still migrate existing and develop new applications that provide static and dynamic publishing of OpenInsight forms and data to the Web in HTML format. Our HTML publisher can create rudimentary HTML pages from OpenInsight forms, which can then be enhanced using your favorite web publishing software. More significantly, OpenInsight provides web server extensions in the form of CGI (Common Gateway Interface) services, which let you request information from an executing OpenInsight application and deliver that information to a web browser.

When working with the Web, one must make sure that the CGI gateway is configured correctly; the following sections deal with the theory and configuration of the gateway.

OECGI (OpenEngine Common Gateway Interface)

OECGI is Revelation Software's CGI (Common Gateway Interface) engine that allows browser-based interaction with Revelation's Linear Hash data by way of OpenInsight. For those familiar with OpenInsight's previous CGI program, OICGI, the OpenEngine CGI interface connects directly to an OpenEngine without using the OpenInsight presentation server. OICGI required that the desktop application be running on the web server, along with an internet gateway window which handled communication between the web server and the OpenInsight program.

With OECGI, those requirements are no longer necessary, and the engine runs in process with OECGI.exe. This means that the web server only creates one external process, and that the process does not interact with the desktop. OECGI significantly reduces the overhead and security footprint of an OpenInsight web application while providing increased response time. OECGI uses a System Registry Entry to configure access to the OpenEngine. The OECGI configuration options provide an advantage in that they allow for different connection configurations based on client needs.

OECGI can be configured for persistent or non-persistent processing: The OECGI may be configured so that each web request gets a unique copy of the engine (non-persistent); the OECGI may start an engine and then leave it

running for the next request (persistent); OECGI can connect to an existing instance of OpenInsight using a named engine (persistent); or the OECGI can work in a pure TCP/IP environment (non-persistent).

OECGI2

With the most current release of OpenInsight, Revelation has included a new CGI gateway named OECGI2. OECGI2 provides scalability by managing the use of multiple engines. To do this, OECGI2 interacts with the OpenInsight OEngine Server. The OEngineServer is responsible for communicating with OECGI2 and for creating, communicating with, and shutting down OpenInsight's OpenEngine. The OEngineServer also manages "caching" of OpenEngines for efficient performance in non-persistent applications (e.g. web requests). Existing OECGI calls are replaced with OECGI2 to implement this technology.

OECGI on Linux

With Linux becoming more and more of a player in the series of platforms that are supported by Revelation in the last few years, we thought it best to document the setting up of OECGI on a Linux machine. The following documents how to configure OECGI on a Linux machine.

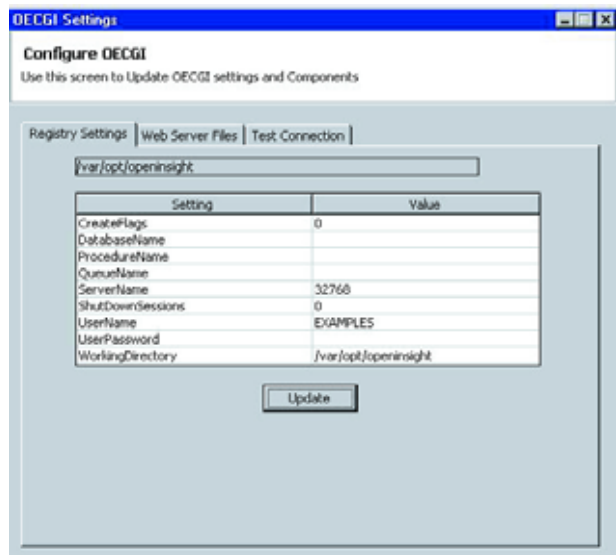
First, it must be noted that in OpenInsight for Linux (OIL) the Open Engine uses X-Windows—Apache cannot start a dynamic engine. The obvious and simplest solution is to connect to a static engine. Second, OECGI uses the registry.

MainWin implements a user specific registry. The solution here is to have Apache run as the same user as OI. It turns out that Apache is hard coded not to run as root. Thus, you want to run it as the name of the user your machine is logged in as. So, in the Apache configuration file, usually found at /etc/apache/conf and named httpd.conf, some changes must be made.

In this file you have to find the User and Group settings. If you're running on a local Linux desktop workstation, you'll need to set the User and Group to match the name of the user name you used to log into Linux. In figure 1, we show that we've modified the User and Group to revguy, the name we used to log into our Linux machine.

Since Linux does not have a registry such as Windows, we need to make use of the rudimentary registry that MainWin gives to us. We have no tool for editing the registry from Linux (easily), so OI must do it. The solution here is to use the window and program supplied with OpenInsight named OECGI_CONFIGURATION. In this screen, modify the OpenInsight specific settings as seen in figure 2. Please note that we've specified the ServerName as well; this may change from session to session so be sure to check your machine-specific information.

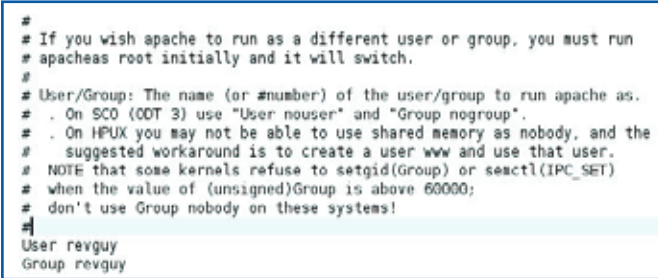
FIGURE 2



Finally, in the cgi-bin subdirectory on your particular machine, make yourself a file named oe. You may want to log in as root on your machine to make this file. The complete contents of the file are below.

```
#!/bin/sh
# call OECGI from the correct place
/opt/openinsight/bin/oegi
# that's all
```

FIGURE 1



Change the permissions of this file to full read and write capabilities with the command 'chmod 777 oe' from a command line, and you should be good to go.

The url is now http://localhost/cgi-bin/oe/trace.

Now, we can revisit the OpenInsight specific tools for working with the Web.

The HTML Publisher

OpenInsight's HTML publisher allows the developer to create HTML pages based on existing OpenInsight forms.

It will create an HTML table based on the x,y coordinates of the controls within the form. The publisher is limited in that each control, which begins at a separate x coordinate or separate y coordinate, is created as new <TD> or <TR> tags within the HTML table. This translates to the developer needing to ensure that the existing OpenInsight form's controls are lined up in the manner that they will appear in HTML.

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requesting browser-based user. PDF-based documents can also be returned.

Writing your own routines

OpenInsight supplies a number of pre-written internet routines, which are called Inet routines, mostly because the program names all start with the prefix 'INET_'. With the exception of INET_ABORTED, each INET function takes the HTTP request as its first or only parameter. There are other parameters that need to be passed depending on the function used. Each function will return an HTML page.

There are times, especially when dealing with business rules, when it is necessary to create your own INET functions using Basic+. INET functions are fairly easy to create and have only three requirements:

- 1** The procedure must start with the prefix INET_.
- 2** The procedure must accept at least one parameter, named Request.
- 3** The procedure is a function, and must return an HTML document.

Creating your own INET function is a perfect way to create dynamic web pages. Your function would consist of the creation of HTML or the reading of already created HTML documents. Many of our customers use third party web-design specific tools to create pages with lots of bell and whistles, or maybe to have a consistent look and feel, and then they read the document from disk, swap data into the document, and then return the page to the browser. The options here are almost endless.

Cost/Licensing

The cost and licensing of using OpenInsight's web capabilities is dependent on your OECGI configuration. Non-persistent configurations utilize existing OpenInsight user counts and therefore require no additional cost or licensing charges as long as there are enough users available on the OpenInsight system. For example, if

Revelation Software's Spin on the Web

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The HTML publisher is a crude tool from a graphics/publisher perspective; however, it will translate an OpenInsight form into an HTML form with tags containing the same name as the OpenInsight form's controls. The resulting HTML may then be massaged using your favorite HTML editor. The publisher is intended as a "quick and dirty" tool to create web pages. One can always choose not to use the HTML publisher and create HTML pages in any of the commercially available web tools.

The HTML pages that are created in OpenInsight are stored in a repository, which are easily accessible via programming, and OpenInsight can then be used as a library of HTML pages.

The Report Builder

OpenInsight has a number of reporting tools of which one, Report Builder, creates columnar reports. The Report Builder is actually a wrapper for the ever-powerful RList function, Revelation's Linear Hash data selection function. Reports created using Report Builder may be accessed via the Web using the INET_RLIST function, so the same report may be accessed via the Web or through the desktop application, without having to edit the report.

For those that can and do develop programs in Basic+, much of the functionality of the OpenInsight Printer Interface (OPI) can be used across the Web. OPI reports can be generated at HTML pages and returned to the

your OpenInsight system allows for 250-user access, then those 250 users can be drawn from both the desktop environment and the web environment. A persistent configuration requires that an OpenInsight Web Deployment Pack be purchased. This will provide unlimited OECGI access to OpenInsight.

Third Party Solutions

There are a number of companies in the MultiValue marketplace that work with OpenInsight; one of the more popular ones is Freedombase, whose web site is www.freedomsoft.com.au. With Freedombase, one can take the forms and pop-ups in an OpenInsight application and generate web-based versions of those forms. Search, drill, security, optimistic locking, and session management, are automatic and transparent. Business logic can be applied directly, or via existing subroutines and functions.

DesignBais Pty Ltd, www.designbais.com, has a web development product with the same name. DesignBais is a functionally rich tool set that allows developers to design and create enterprise-wide web-based applications. The product supports the creation of design templates. These templates allow for creation of a standard interface that can be easily applied throughout an application or its modules. With drop down top menus and side bar menus as a standard feature, user navigation is simple and intuitive.

WebWizard from Via Systems, Inc., www.via.com, is a web development environment that allows OpenInsight developers and end-users to create HTML, XML, or WML pages without the steep learning curve required for new technologies. Designed from the MultiValue viewpoint, WebWizard provides both "wizard" interfaces to quickly generate web output without any programming at all and a fully-featured API that's integrated with OpenInsight's BASIC+ programming language.

Still another is the Sprezzatura Group and their S/Web product. S/Web has

been around for many years and is in use in many sites. It provides a complementary process and framework for OECGI; details can be found at www.sprezzatura.com.

There are a few others companies working on products that interface to OpenInsight via the web; watch our web site for future releases.

Future Directions

Currently the OpenInsight HTML Publisher generates HTML-based documents. We're currently investigating two possible additions at this time: Ajax and ASP.NET. As Ajax was discussed in depth in one of our recent (May/June 2006) articles, we won't go into more detail at this time. ASP.NET is a technology developed by and available from Microsoft. The creation of the source pages for ASP.NET is similar to that of Ajax in that it is composed of a mix of HTML and scripting elements. When an ASP.NET page is requested, it is transformed via a process on a .NET server.

It is relatively simple for OpenInsight to generate pages in one or both of these formats, and we have done so in the lab. In an upcoming release of OpenInsight either one or both of these options will be available. We're partially relying on you, our users, to let us know which direction to focus on. Send your suggestions to Info@revelation.com.

Conclusion

As the web becomes an even more integral part of our daily lives (perhaps evidenced by the fact that 'Googled' is now a verb), it is more important than ever that the systems designed with and using OpenInsight are able to connect and communicate via the web. The days of stand-alone systems running on their own hardware and not interacting with the rest of the computing environment, or even with your customers or remote users, are long gone. Revelation Software's web tools are a viable, affordable solution. [is](http://www.revelation.com)

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Web Ramblings

Continued from page 6

almost no time, Samy had over 1 million of MySpace's 54 million lavishing praises to him.

Sounds bad, but it can be worse. An online financial company that deploys Ajax could be similarly vulnerable to such short-term identity theft, with far more serious and expensive consequences.

The upshot of all this? You certainly are not going to see Google or any other site drop Ajax technologies. It's too powerful and too many of the statistics that deliver advertising revenues to these companies are tied to Ajax. It does mean, however, you cannot deploy Ajax in a haphazard fashion. The use of Ajax on your web site needs to be examined

so that malicious JavaScript cannot be inserted and that should any JavaScript make its way into the web site, it should be filtered and incapacitated.

Who are You?

The simplistic ways that Google and MySpace confirm your identity are easily hacked. Enter user name and password. Are there more sophisticated ways to identify who you really are? Some tech companies such as IBM and Microsoft are now revisiting this need. Of all things, it's not just financial companies and eCommerce sites that need these services. Apparently social networking and dating sites are also eager to make sure that their cus-

tomers can trust whomever they are meeting online.

Using hardware, there are different gadgets that use finger prints of USB keys that identify you as the appropriate person. But hardware can be cumbersome and certainly don't help you if you're going to use a PC at your friend's home or at an airport.

Advanced software approaches involve a more tedious approach. You sign up with an account and are asked a series of questions that uniquely identify who you are. This database is kept on a third-party system and can be used by multiple sites who wish to use your ability to answer these various questions to confirm your identity. Sometimes, the questions are not even asked of you. The e-commerce or shopping site might ask about your mortgage payments which would be matched against banking records. To some extent, however, I shrink from such probing. It might be a way for companies and customers and vendors to recognize me,

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but it might also be a way for identity thieves to collect highly detailed information rather easily.

So, for now, sophisticated but easy identification still seems a distant goal.

Google Spreadsheets

I mentioned earlier that Google has spreadsheet technologies online. It's a free service that gives you basic spreadsheet capabilities. It's not sophisticated enough to handle charts or statistics, but what it does offer is pleasing and sufficient for most users. You can open a spreadsheet that automatically saves itself back to Google. The spreadsheet has cells, rows, and columns with simple font faces, italics, underlines, colors, and bolding. Borders and boxes around cells are available. Basic editing using cut and paste is possible. You can do straightforward mathematical calculations and functions. Most of the Microsoft Excel functions are in the spreadsheet, including SUM(), COUNT(), MIN(), and MAX(). Sorting is also featured. You can save the document in external formats as well. The supported formats are currently Microsoft Excel, HTML, and CSV (comma-delimited).

You can also upload and open your existing spreadsheets. Google Spreadsheets does not seem to perform the macros, but for simple documents, it offers amazing support.

Why use Google Spreadsheets? It's free. You can share your spreadsheets with others who are remote and may not have access to your servers, or with those who you do not want to have access to your servers. For example, you can publish your spreadsheet as public information.

In general, I'm impressed. The feature set clearly uses Ajax at its fullest.

Free AOL

Now that broadband has undercut its business model, AOL has had to change. Hmmm. Let me rephrase that

comment. Now that AOL recognizes that broadband has been undercutting its business model for several years, AOL finally has changed.

E-mail? Free. Yup—you too can now have an AOL email address. Apparently, AOL believes that this is a premium address, for unlike Yahoo and Google and Hotmail, it felt that its address was worth the extra fee. Now, I'm not one to swing into a Rodeo Drive store and buy the first name brand I see, but I never viewed @aol.com to be comparable with Gucci. Discount stores, maybe, but not 90210. For some time, after all, the net savvy rolled their eyes whenever a message board posting came from @aol.com. But hey, it's free.

Most interestingly, AOL Security Center was made free. This was a highly attractive feature for families and may actually be useful to many who aren't in need of AOL's other services.

Lastly, in a nod to the TV-maniac society we live in, AOL Video is also free. That media convergence has to be good for something I suppose. is



Melvin M. Soriano

works at Eagle Rock Information Systems (ERIS), an

Internet Application Service

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Developer. ERIS has deployed

enterprise-wide solutions on most

MultiValue platforms and operating

systems. HTM-Mel can be

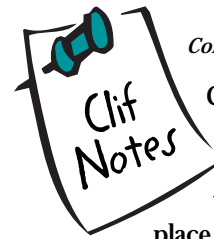
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Continued from page 46

Cultivating the courage gene could also help preserve and expand the MultiValue marketplace. You frequently hear the complaint at conferences (not just Spectrum, by the way) that the presentations are little more than thinly-veiled sales pitches. If you suggest to the complainer that they could give a technical presentation, they are apt to act like a frightened crawfish in full reverse. Public speaking takes a lot of courage. The same is true with writing technical papers and articles. The courage gene has to be in good working order for someone to put their knowledge, experience, and techniques onto paper for publication, knowing that a certain number of people are going to pick it to pieces, point out every tiny mistake or perceived fault, and pontificate at length to anyone who will listen (or are unwilling victims sitting in the cubicle next to them) about how the author doesn't know a third of what they know about the topic. But if the same folks had the courage and the self-discipline to put their knowledge and opinions in print (or pixels), we would have an explosion of publicity about our MultiValue environment.

We've just scratched the surface of the characteristics of the Über Geek we might like to build in via genetic engineering. But then, I look back at Sarbanes-Oxley and imagine what government mandated programmers would be like, and I think maybe we are better off leaving behavior modification to the people being modified.

I just hope the dudes at McGill don't screw up and accidentally create a race of flesh-eating Reaver mice...

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PHONE	FAX	
E-MAIL	WEB SITE	
SIGNATURE	DATE	

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

1. What is your job function/title?

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

2. Is your company a (check one):

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

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

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

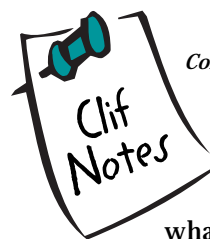
5. What major business/industry most clearly describes your company?

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

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

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

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in her article SOX: The Third Year (page 14), a lot of what we did involved increasing our self-discipline, like fixing bugs rather than editing the data on the production systems. Or discussing what we were going to do before we did it, and having a back-out plan should it go wrong. One wonders—if we had been able to apply enough genetic engineering techniques, would we have been able to have avoided that whole Sarbanes-Oxley thing? Probably not. But I'll leave that to those who enjoy arguing “nature versus nurture” to decide if that whole mess was caused by a minority of C-level business executives lacking an ethics gene coupled with a majority of politicians missing the common-sense gene.

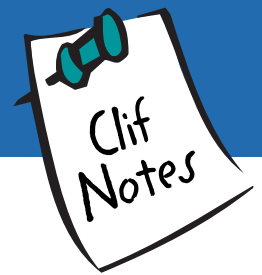
And finally, we have a gene that doesn't do much by itself. It acts to amplify or mutate the expression of the other genes. In a lot of IT professionals it seems to be present, but dormant until triggered by some horrific event, such as an announcement that the company is moving to Oracle. I refer to the courage gene.

Increase the effect of the self-discipline gene, and you have a programmer who keeps accurate records, time logs, bug tracking, and the like. Combine this with the courage to review those records, learn from them, and then stand up to managers and C-levels who turn red in the face and spew profanity when someone points out that their “pulled from thin air” schedule is unrealistic, and you have a professional who can estimate. “Everybody knows” that programmers can't estimate. But is it really caused by ego, changing requirements, and any number of commonly stated reasons? Or is a lot of it caused by not really knowing how long a task took last time and/or the fear of the repercussions of stating a truth that is not what someone else wants to hear?

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Altered Khan-tent

BY CLIFTON OLIVER



I recently read an article that said that the department of psychiatry at McGill University had developed a genetic technique which might eventually lead to a new treatment for clinical depression. The experiments were done, of course, using laboratory mice. However, since mice are among the most evolved life forms on the planet Earth (a fact well known to anyone who has read *Hitchhikers Guide To The Galaxy*), it is hoped that the research will be applicable to lower life forms, like *Homo Sapiens*.

A particular gene, known as TREK-1 (I am not making this up), apparently effects the use of serotonin in the brain. Mice that were produced lacking this gene seem to be happy all time. In the words of one researcher, "they acted as if they had been treated with antidepressants for at least three weeks."

Since that is also a fairly accurate description of programmers operating

with sleep deprivation and large quantities of caffeine and junk food, I think that may have been the first factor in the juxtaposition of two concepts in my warped brain. The second was the arrival of Shannon's article *Finding The Right Fit* (page 20 of this issue). This article deals with the topic of hiring and/or training programmers for your MultiValue shop.

Well, I thought. Instead of going through all this time, expense, and trouble to find and then hire an IT professional who may not even work out, wouldn't it be nice if we could apply genetic engineering techniques and build us a geek to specification?

Like any other mad scientist (ok, so I'm not a scientist), I couldn't help thinking I could improve on the genotype while I was at it. So what would be the characteristics we might like to accentuate, de-emphasize, add, or eliminate?

I think the first adjustment I'd make would be to increase the sense of humor and turn down the volume on self-importance. Yes, what we do is serious work. But we don't need to take ourselves so seriously. After all, people, none of us is getting out of here alive. Of course, increasing the humor level goes a long way to decreasing self-importance. It is hard to maintain arrogance when you can spill a can of soda in your lap and find it (and the rest of the day) amusing.

Honesty might be a good characteristic to crank up a bit—okay, a lot. I am

sure you have had the irritating experience of talking to (or at) a Help Desk or Tech Support person who refuses to say, "I don't know." Instead of admitting they don't know, they start guessing, or worse, they just make it up as they blather on. You find yourself muttering under your breath, "If he tells me to re-load Windows, I am going to reach through the phone line and strangle him!"

Curiosity is also a quality that is good to engineer into a programmer. One of the things I notice in a lot of MultiValue shops are IT people (thankfully a minority) who simply do not want to learn anything new. They started in MultiValue on brand X years ago, have gone through three platform changes, and have never read the Basic Language Reference. What they learned on brand X is the only thing they know; it is the only thing they want to know. I know that this trait is not unique to MultiValue people. But we need to be careful about looking down our noses at the COBOL people when we have programmers in our own shops who haven't a clue how a REMOVE statement works or why one would want to use it.

It is curious that curiosity has a dark side. The saying is that "curiosity killed the cat." In our arena it is more likely to kill the Month End Run. Trying something new just because it's new causes its share of problems in IT shops, too. So if we are going to fiddle with the curiosity gene, we had best amplify the expression of the self-discipline gene at the same time. As Susan points out

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