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INSIDE: The Trial of Telnet

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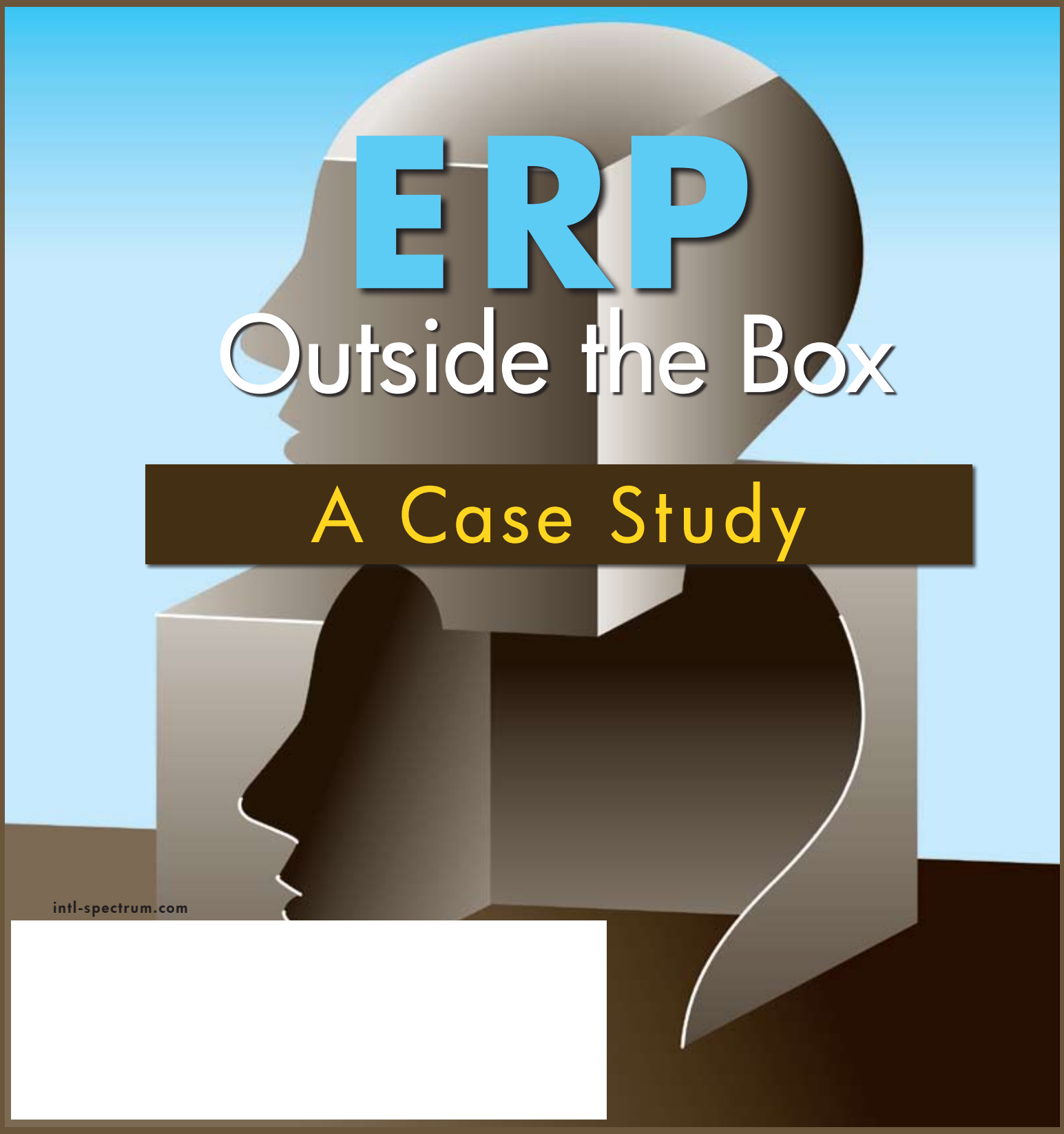

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THE MULTIVALUE TECHNOLOGY MAGAZINE

FEATURES | JULY/AUGUST 2011

6 **Extending Your MultiValue ERP with Web Services: Thinking Outside the Box** Most companies have ERP needs that are unique to their particular business. When a "standard" ERP package does not fit well with accepted industry practices or company business processes, you seem to have two choices — customize and enhance the software or change the way that you do business to match the package. The first can be difficult, time-consuming, and expensive. The second can force you into doing things in a way that actually complicates your workflow and raises expenses. It may even hurt your competitive advantages. Find out how this company stepped "outside the box" and solved one of their ERP needs with inexpensive equipment, internal developers, and open source software. **BY JEFF POWELL**

12 **Creating Breakthrough MultiValue Applications** Breakthrough applications are solutions that dominate markets, destroying the competition by providing unique functionality. Of course, creating these breakthrough applications may require additional skills and technologies. With the MultiValue developer in mind, this article explores the characteristics and requirements to produce a breakthrough application. **BY LEE BURSTEIN, INTERSYSTEMS CORPORATION**

14 **The Trial of Telnet** For almost 30 years, Telnet has been the primary way that users log into and access their MultiValue applications and data. It has been a good workhorse, but as with most tools, there comes a time when what has worked well for many years no longer meets the modern requirements of security and reliability. Is it time to retire telnet? If so, where do we go from here? **BY KEVIN KING**

20 **Business Tech: Managing Creative Talent** When we hear the word "creative," we tend to think of musicians, authors, visual artists, and the like. Although many members of the Information Technology community consider themselves to be, and may actually have degrees in, Computer Science, Software Engineering, or Networks, we have more in common in our work needs and habits with the artists than is first apparent. Managers of these group of people are advised to understand and remember this. **BY CHARLES BAROUCH**

24 **Sending E-mail from Your MultiValue Programs — Part 4: Using MS Exchange and Sockets** Continuing the discussion of interfacing MultiValue programs with e-mail, this part of the series of articles discusses talking directly to an SMTP server by using sockets. Although the actual details of opening, writing to, and reading from a socket differ from platform to platform, when you have made connection, the SMTP dialogue is remarkably straightforward. **BY NATHAN RECTOR**

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From the Inside

BY NATHAN RECTOR

It is the time of year that I start planning for the next Spectrum conference. If you haven't seen the ad for the 2012 Spectrum, it will be Apr 2nd-5th in West Palm Beach, FL. We are having it at the same venue as the 2011 conference, so if you are a golfer, make sure you bring your clubs.

While it seems like the conference is pretty far away, it really isn't. I have to start planning my sessions so you have something to sell to your bosses. I get great content from the industry experts that provide sessions for me every year, but I would like to know what you as a MultiValue user would like to see. The Spectrum Conference is designed for you, the User, so I want to make sure you get the materials, education, and experiences that are needed to maximize your ability to create efficient enterprise applications.

The demands on your IT department are getting more specific, which leads to specific examples or business solutions that you need to know. I remember those days quite well. And I watch the trends that are coming to see which ones our industry are likely to need to be educated about.

There are a lot of different trends floating around right now. If you are unsure what you would like to see, here are a few that I've noticed:

- Virtualization/Cloud Computing

  Everyone is talking Cloud Computing, and Virtualization, and for pretty good reasons. We have talked about virtualization and cloud computing at the conference before, but are you interested in how to integrate MultiValue databases into a cloud API, like Azure or Google App Engine? Or just run a MultiValue server in a Virtual Machine?

- Tablets and Cell Phone Apps

  This topic is a pretty sure thing for 2012, but I would like to hear your input. What are your company demands: Native Apps, Web Apps, iPad, Android, BlackBerry?

- Windows 7

  If you haven't worked with Windows 7 much yet, it can be a pain. Would you like to see general sessions on how to use Windows 7 and Windows Server 2008? These general sessions would not likely be MultiValue specific, but sometimes we need to know about other software to make our job easier.

- Google Apps

  Considered using Google apps in your business lately? Or for that matter Office 365. Documents, Calendars, Email, Spreadsheets... all free, and all can be integrated with your MultiValue data.

- Integration – E-mail, CRM, EMR, LDAP, Active Directory

  Do you have other applications within your environment that you need to integrate with. We have been an island all to ourselves for so long, we forget that our business has information other systems can use or need for business functions. What integration options do you need?

External Programing Languages

  MultiValue Basic has served us well, but we need to interact with other system, so that means other programing environments. What languages is your business requiring you to work with? .NET, Java, Python, Javascript, HTML, JSON... there are many others.

These are just a few examples, but I would like to hear from you to see what is most interesting or trends and topics that you would like to have available.

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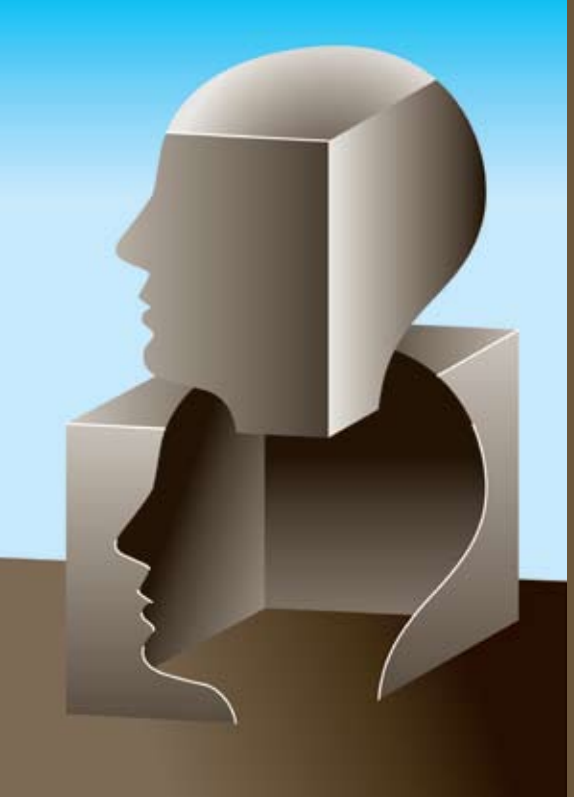

Extending Your MultiValue ERP with Web Services

Thinking Outside the Box

BY JEFF POWELL

Why Would We Need to Extend Our ERP?

In many companies the standard or optional modules often don't fit their business model well, and when they do, they can be cost prohibitive. It is not unusual for a company to get modifications from their ERP vendor or a consultant that allows them to customize their data entry screens, reports, or business logic. These modifications can be very effective but also can be very costly. But how often do we think outside the box and create our own add-ons or extensions to our ERP system? In this article we'll discuss a real system that does get outside of the box, the AIX box.

The Problem

What happened to us was as if we had gone to our auto mechanic with a dead battery and the service manager told us, "Your battery is fine, but you need a new alternator which will cost you $325 plus $53.95 each for the mounting bolts, $128.88 for the drive belt, $79.95 for two hours labor, $20 for the garage use fee, and you will only be able to drive in reverse."

Simply put, our company says to the ERP system, "Don't tell us what to do. We'll tell you what we did."

I work full time as a developer for a company that looked at the warehousing module offered by their ERP vendor, and it was a completely bad fit. The ERP vendor's solution would have required that we spend a lot of money on specialized devices ($3000+ each), device setup (additional $600 each), and hours of billable professional services time in addition to the basic cost of the module. This might have been acceptable had the resulting process fit into our current processes.

Our company works in an industry where there are many different products from a variety of vendors. These products are interchangeable in many cases. Because of this, our processes are very flexible. With the vendor's wireless warehousing module, we would have needed to have bin movement and lot control. This meant that every product in each of our eight branch warehouses would have needed to be labeled with a barcode and the material codes cataloged and entered in during put-away. Additionally, it would have required the warehouse employee (aka picker) to go to a specific location and find a piece with a specific material code to fulfill an order. It would have also required that each material code be inventoried as well. While this discipline might be good in the sense of knowing exactly what we have on hand, it adds a lot of costs to the process without adding any value.

This would have been a radical departure from our industry norm of picking a suitable substitute product and recording the product used and material code.

Simply put, our company says to the ERP system, "Don't tell us what to do. We'll tell you what we did." The ERP module would have added a considerable amount of labor at both ends of the process.

Digital Version On-Line

Scan Me!

Fig. 1 Illustration : System Overview

The Solution

We developed an in-house system that extended the ERP outside the box and outside the green-screen. This system uses a web service that acts as the bridge between the ERP and a client application. It looks something like figure 1.

How it Works.

This solution was deployed on inexpensive "Classroom PC" laptops which are physically mounted into each man-lift — a forklift that raises both the picker and the skid of material. See figure 2. Each PC is running a Java application that was developed in-house.

Here is the process flow.

- The warehouse employee (picker) scans a barcode on the picking ticket.

Fig. 2 Man-lift with PC

- The line item information is retrieved and displayed in a form.
- The picker types in data which is validated.
- The picker signals line item completion and the ERP system is updated.
- Process repeats for each line item until the picker signals order completion and again the ERP is updated.

The Picking Operation

When the line item barcode is scanned into the picker application, a web service method is called with a unique identifier and returns a pick item object (class) which contains a combination of fields from the order, customer, ship-to, product, and other files.

This is sent (or serialized) as a response to the web service client where it is de-serialized back into a usable class by the web service client.

As the picker types in quantities, vendor, and material codes these are validated locally or sent to the web service for validation. When the picking process is complete, the data is sent to the web service which calls a custom subroutine. The order, line item, and warehouse records are updated with the picker's data.

"It Took Some Time to Get Used to But ..."

The warehouse pickers were skeptical about the proposed system and thought that it would take far longer to get the job done. After three weeks in full production one of the employees from another branch office visited and asked several of the pickers how they liked the system. The answer was, "It took some time to get used to, but we'd never go back to doing it the old way."

Why? Because they were saving time in the overall process.

In the old system the pick information was written on the paperwork, the product was labeled for the customer, the skid was shrink wrapped, and the paperwork was turned in to the clerks inside who validated the information as they produced the packing slip. If the code was not found, the process stopped and the paperwork was sent back out to the warehouse to be rechecked. The picker would have to cut the shrink wrap open, find the item, and verify the codes. Often it turned out that they had pulled the wrong product from the shelf.

The new system validates the data that the picker enters as he is pulling the item from the shelf. The new system provides immediate feedback that has often caught mistakes as they were being made. It also tells him on the screen what (if any) products can be used as a substitute.

What Did it Cost? Nothing.

The tools and technologies are free, and accounting does not charge my salary to specific projects since, like you, I rarely spend all my time on one project.

This system was completely developed and deployed with and on open source tools. The web service is hosted on Oracle/Sun's Glassfish Application Server running on a virtual Linux server.

The client is a Java application. Both the web service and client application were developed using Oracle/Sun's Netbeans integrated development environment. The subroutines were developed by an in-house programmer in UniBasic.

Continues on page 8

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How Long Did it Take?

Six months from get to go.

Once we decided to move forward with the project, it took an initial 120 hours to develop. We spent the remainder in a live test phase. First we chose one picker to test the application and give us his feedback. It was during this time that we actually went from concept to a user-friendly application. We also realized that our initial approach, a browser based approach, was not going to work. We were also working on the wireless networking to eliminate dead spots. After the first month of testing, we expanded it to our main branch. Within six months we had implemented in full production throughout the company.

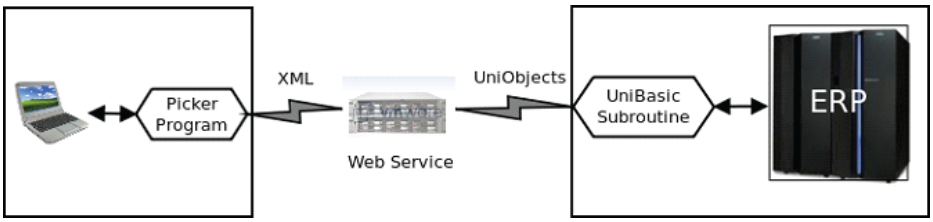

Fig. 3 Data Transport

This has been in full production for over a year at all of our branch offices.

This web service also includes producing product labels, managing drops (usable leftover pipe from cutting , programming automated saws with length and miter (angle) data, displaying priority tasks on TV screens in our warehouses, and tracking orders through the process.

Let's look under the hood.

Data Transport

The way data is transferred is via an XML dialog between the client and the server as described by a WSDL (Web Services Description Language) file and a Schema file on the web service (fig. 3). The combination of WSDL and Java clients provides the opportunity for the Netbeans IDE to create a web service client automatically. It builds object handlers with methods and properties. This gives the programmer a natural interface to the data and functions as if these resided within the client application itself (see code sample 1). As you will see, we (the programmers) do not ever have to deal with the XML itself.

The web service method gets the deserialized object and reformats it into a UniData (UniDynArray) record with attribute 1 set to the list of field names and attribute 2 set to the corresponding data values. It then calls a subroutine through a UniObjects for Java (UOJ) session. The subroutine call returns one parameter that has the same structure. The returned UniDynArray is then converted to the desired object. Code sample 2 shows the conversion routines from and to UniDynArray for the PickItem object. The one parameter in / one parameter out structure allows us to use the same call interface throughout the different methods we are using. The subroutine provides then back end processes that are required to properly update the order.

Overhead

When I first began to use UniObjects, I experienced a common issue. There was a long delay the first time I would connect, open files, and read records. This only happens on the session initialization. Once the session is open, data transfer is very quick. To eliminate this overhead, pre-existing sessions are used and re-used wherever possible. If

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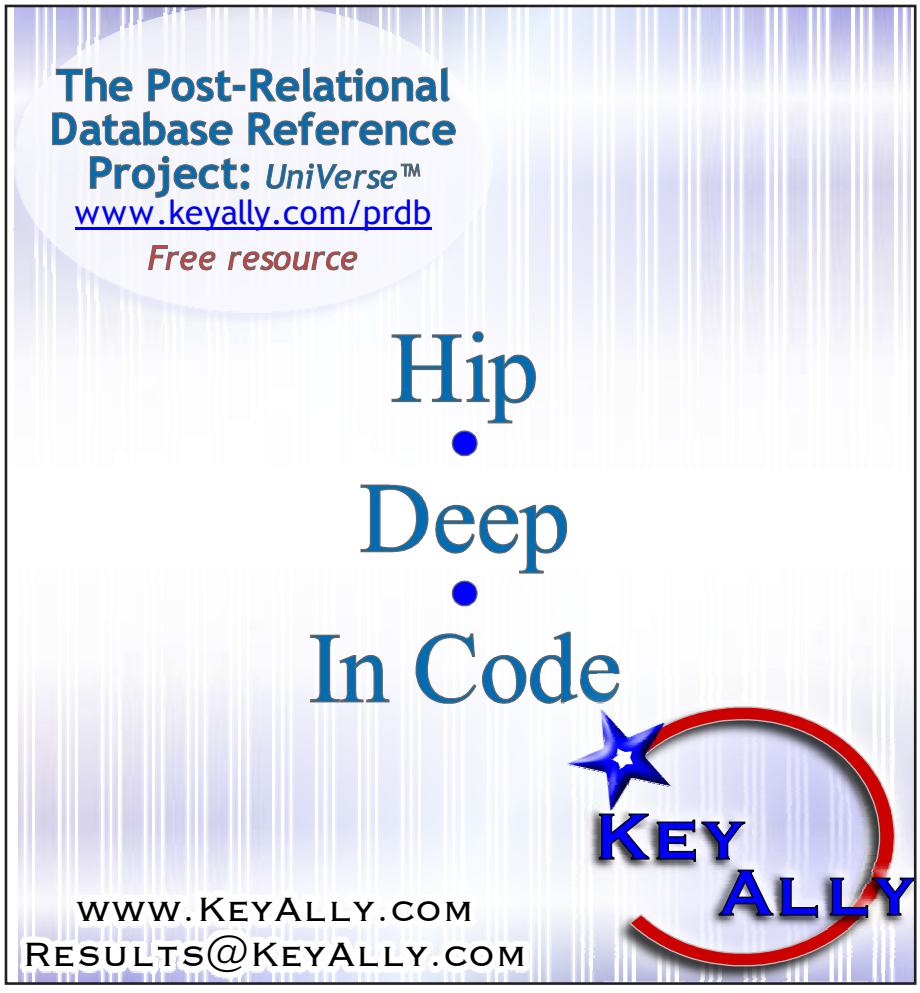

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EXTENDING YOUR MULTIVALUE ERP WITH WEB SERVICES — THINKING OUTSIDE THE BOX

Continued from page 8

there are no sessions available, the web service creates one to the host for this and future calls to utilize.

Code samples

1. Request line item from web service.

```
LineItem lit = ordPort.
    → getLineItem(scanData);
```

2. Convert object from and to UniDynArray (Fig. 4)

"I Don't Like Java ... What Other Options Are There?"

You may not want to develop in Java. The good news is that there are other ways to do this. Web services don't have to use WSDL, and they don't have to be written in Java. JSON (Java Script Object Notation) is another data type that can be used to connect the data to clients in other system. JSON is very commonly used in the auto-suggestion controls on web sites. There are many JSON encoders and parsers available for almost every programming language. For example you can pass JSON data from ASP services to browser-based clients using Ajax (Asynchronous JavaScript and XML). There is a UniObjects COM object that works with ASP and Visual Basic.

Here is a list of platforms and technologies that you can choose from.

- Web Servers
- Apache
- Microsoft IIS
- Oracle / Sun Glassfish
- Tomcat
- Web service platforms
- Java on Tomcat
- ASP on IIS
- PHP on Apache or IIS
- Client platforms
- C++ with WSDL or JSON
- Java with WSDL or JSON
- Visual Basic with JSON
- Web based with JavaScript

Your web service server choices include IIS, Tomcat, or Sun's Glassfish server. Tomcat and Glassfish are free downloads available for Mac, Windows, and Linux. IIS comes with the Window 2000 series servers.

Your client choices are Java, C++, Visual Basic (Windows only), or even browser based using Javascript.

Our choice has been Java clients on Windows and Linux devices connecting to a Glassfish web application server running on a Linux virtual machine.

Final Thoughts

This article described a system created as a process improvement project. The end result provided our company with a system that frees our employees to focus on more customer-centric activities rather than duplicating data recording and moving paperwork. More work is flowing more efficiently.

Where neither the standard tools built into the ERP nor the optional modules were able meet our needs, extending the ERP system allowed us to achieve our goals. IS

JEFF POWELL is the IT Manager for Industrial Piping Specialists, Inc in Tulsa, Oklahoma. His focus is on Process Improvement and Application Development. He has over 30 years experience in the computer industry working for Digital Equipment Corporation, NEC (Nippon Electric) and as an independent consultant.

```
public PickItem[] toPickItem(UniDynArray val)
{
  ArrayList pArray=new ArrayList();
  int itemCount=val.dcount(2,9);
  for(int i=1; i<itemCount+1; i++)
  {
      PickItem pck=new PickItem();
      pck.setMode(val.extract(2, 1, i).toString());
      pck.setScanData(val.extract(2, 2, i).toString());
      pck.setPickerInit(val.extract(2, 3, i).toString());
      pck.setProdNum(val.extract(2, 4, i).toString());
      pck.setMfgCode(val.extract(2, 5, i).toString());
      pck.setHeatCode(val.extract(2, 6, i).toString());
      pck.setPickQty(val.extract(2, 7, i).toString());
      pck.setContCode(val.extract(2, 8, i).toString());
      pck.setTotalPicked(val.extract(2, 9, i).toString());
      pck.setPickBin(val.extract(2, 10, i).toString());
      pck.setPcsQty(val.extract(2, 10, i).toString());
      pArray.add(pck);
  }

  return (PickItem[]) pArray.toArray(new PickItem[pArray.size()]);
}
public UniDynArray toUniDynArray()
{
  String[] argNames =
  {
      "MODE", "SCAN.DATA", "PICKER.NUM", "PROD.NUM", "MFG.CODE", "HEAT.CODE", "PICK.QTY",
          → "CONTAINER", "TOT.PCK", "PICK.BIN", "PCS.QTY"
  };

  UniDynArray val=new UniDynArray();
  int i=1;
  for(String name : argNames)
  {
      val.replace(1, i++, name);
  }
  safeRepl(val, 2, 1, -1, this.getMode());
  safeRepl(val, 2, 2, -1, this.getScanData());
  safeRepl(val, 2, 3, -1, this.getPickerInit());
  safeRepl(val, 2, 4, -1, this.getProdNum());
  safeRepl(val, 2, 5, -1, this.getMfgCode());
  safeRepl(val, 2, 6, -1, this.getHeatCode());
  safeRepl(val, 2, 7, -1, this.getPickQty());
  safeRepl(val, 2, 8, -1, this.getContCode());
  safeRepl(val, 2, 9, -1, this.getTotalPicked());
  safeRepl(val, 2, 10, -1, this.getPickBin());
  safeRepl(val, 2, 11, -1, this.getPcsQty());
  return val;
}
private void safeRepl(UniDynArray ar, int attr, int val, int subval, String src)
{
  if(src != null)
  {
      if(subval > -1)
          ar.replace(attr, val, subval, src);
      else
          ar.replace(attr, val, src);
  }
}
```

Fig. 4

LEE BURSTEIN, PRODUCT MANAGER, INTERSYSTEMS CORPORATION

Creating Breakthrough MultiValue Applications

Breakthrough applications are solutions that dominate markets, destroying the competition by providing unique functionality. They are the applications that customers clamor for, and that developers dream of creating. This article will examine the characteristics and technology demands of breakthrough applications including why we need them, what defines them, and how MultiValue developers can build them.

The Case for Breakthrough Applications

It's very simple. The major benefit to having breakthrough applications is that they increase revenue. Revenue growth is strategic to any organization. Top line growth enables an organization to solve almost any problem, while lack of growth is likely to create problems. Consumers want the productivity benefits and ease-of-use that breakthrough applications provide. They are willing to pay for these deliverables, so creating a breakthrough application will have a positive effect on your top line.

It is equally simple to identify the major risk associated with not having breakthrough applications — your customers may abandon you. Most consumers of your software are already using smart hand-held connected devices and getting immediate answers to the questions that are on their minds at the time. They use downloaded "apps" on their phones and tablets to find a restaurant within walking distance, check movie times at near-by theatres, comparison shop by scanning bar codes, etc. That being the case, users expect the same kind of experience when using corporate applications, whether in the office or in the field. If your application doesn't deliver the utility, immediacy, and ease-of-use they have become accustomed to, your customers may find a competitor's breakthrough application that does.

The user experience is one of the critical characteristics that define today's breakthrough applications. People have little need, or desire, to be tethered to a desktop workstation.

The Breakthrough User Experience

The user experience is one of the critical characteristics that define today's breakthrough applications. People have little need, or desire, to be tethered to a desk-top workstation. Users are demanding "what I want, when I want it, and how I want it." A breakthrough application should be able to meet that demand even when users are out of the office or in the field. (The "field", of course, can be a showroom floor, convention exhibit hall, customer waiting area, or even Main Street.)

The user experience isn't all about look and feel, though. A breakthrough application can have significant productivity benefits. Imagine a doctor attending a conference and receiving notification that something significant has happened to one of his patients. On his tablet computer he can call up the patient's complete medical history, view important new information, and make a timely decision about treatment. Or perhaps a real estate agent can access just-posted listings and show them to prospective buyers without going back to the office computer.

Unlocking All of Your Data

Many applications do a good job of capturing structured, transactional business data. However, it is estimated that structured data only represents 5% to 15% of an organization's information. There is a wealth of business-critical unstructured data stored in documents, as well as in notes fields of transactional systems. This critical knowledge is often lost because it isn't easy to access or analyze. In addition, information from on-line sources or found within other applications and systems could also be vital to the decision-making process.

A characteristic of modern breakthrough applications is that they can tap into all types of data. They provide wide-scale connectivity to take full advantage of diverse sources of data. And

they offer rich support for gaining insight from unstructured data.

Driving Intelligent Action

The whole purpose of providing personalized user interfaces and unlocking all the data is to drive intelligent action. A breakthrough application will — in real time — enable users to gain useful insight into what their data means. And it will provide them the ability to take action based on that insight.

You will gain a competitive advantage by embedding business intelligence capabilities right into your transactional applications. No longer can transactional and analytical systems be separate. Quantitative analytics based on structured data combined with qualitative analytics based on unstructured data will give your users an unprecedented view of their business. But to truly drive intelligent action, this must be delivered at the speed of your transactional systems.

Building Breakthrough Applications

So, what do MultiValue developers need to think about as they work towards delivering the elements of breakthrough applications mentioned above?

How to Give Users the Experience They Expect

Smart phones and tablets are rapidly becoming the preferred user devices and most breakthrough applications will have to run on these platforms. Developing for mobile devices doesn't have to be a nightmare. If your user interface is already browser-based, it will need to be redesigned to look good on a small (perhaps very small screen) and to support "touches" rather than "clicks". However, the underlying data structures and business logic can remain largely unchanged.

Remember, it's very likely that today's new devices will be old 12 months from now. You need to be poised to take advantage of the latest user interface. That's why it's a good idea to develop "from the data outward." Start with a rich data model (something MultiValue technology excels at) and build the business logic that delivers breakthrough features. Then add the user interface your market wants. If you can, use a service-oriented architecture (SOA) for your breakthrough applications. This will make it easier to adapt your application for the next new device, whatever it may be.

In some cases, it simply may not be practical or sensible to make your breakthrough application available on mobile devices. However, your user interface still needs to offer rich functionality, be easy to use, and be extremely responsive.

How to Unlock Unstructured Data

Information contained in text fields is unstructured data that is hard to ac-

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The Trial of Telnet

BY KEVIN KING

"Will the defendant please rise?"

Picture this: You're working on your MultiValue system happy as a clam and all of a sudden something in the network hiccups and you instantly find your Telnet session disconnected, never to return. Or maybe you're one of the unfortunate many who have had your credentials or credit card number sniffed off the network and used improperly?

Though the Telnet protocol has been a mainstay of communicating with MultiValue systems for decades, perhaps it's time to take a fresh look at the good, bad, and ugly of Telnet and see where this seemingly simple protocol fits into our otherwise bright MultiValue future.

The Good

For those raised on Unix, Telnet seems simple enough. Open up a client, request a connection, and you're right there in your MultiValue application. Even Windows platforms have Telnet servers to service their MultiValue databases. And with some of the GUI toolkits available today, MultiValue applications can present a pretty nice façade to our customers.

So while there's been real financial value in maintaining at least a reasonable emulation of these older devices, for how long will we be tethered to emulations of antiques? Our applications deserve better, do they not?

Telnet is a reasonably lightweight protocol. When there's nothing going on, there is very little traffic on the network. (Some, yes, but it's very little.) Telnet packets also include a minuscule amount of overhead to move their payload on the wire.

Common Telnet clients today support a dizzying array of terminal emulations to offer the widest compatibility for our MultiValue applications. Applications written decades ago for Wyse50's, VT220's, and other terminal devices can run on these emulators almost as if the user were using the real thing.

The Bad

Let us not forget, however, that not only is Telnet nearly thirty years old and growing older by the minute, the devices that are being emulated have been antiques for quite a while. So while there's been real financial value in maintaining at least a reasonable emulation of these older devices, for how long will we be tethered to emulations of antiques? Our applications deserve better, do they not?

While the Telnet protocol itself is reasonably lightweight, there is still the need for hardware to support multiple simultaneous persistent connections. Connect 600 users to a system and there'll be 600 persistent processes running Telnet (plus a MultiValue shell for each) to service those users. Maybe each connection does not use much, but with each of those processes taking a little bit of memory, a little bit of CPU, and a little bit of the network bandwidth, it's not unreasonable to expect that it all adds up somewhere.

It's also worth mentioning that the number of new Telnet clients being added to the market is remarkably small. There's a reason for this — In my opinion the Telnet protocol itself is ambiguously specified, remarkably complex to implement completely and

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Scan Me!

correctly, and there's rarely anything new in emulating hardware that is more commonly found in the Smithsonian archives than in production use.

Everyone has suffered through a Telnet dropout at one time or another. There are some proxy programs available that will restore a failed Telnet connection by standing in the gap between the server and client. But these tools are still rare, with most people accepting the occasional dropout and ensuing frustration as a fact of life in the total cost of Telnet ownership.

Finally, no matter how good they are, Telnet clients appear only infrequently in the global technology landscape. Furthermore the really good Telnet clients can be a bit pricey, especially when being purchased for the constituency of larger organizations.

The Ugly

If you're confident your information is secure, download, install, and run a little free program called WireShark (http://www.wireshark.org). WireShark is a TCP/IP packet sniffer that will show you in colorful detail the information that is being sent across your network. Want to know who's using the most bandwidth? WireShark will show you. Want to know who is connecting to where and how often? Wireshark has that information. Or maybe you're interested in the **actual data** coming from and going to all those Telnet clients? It's all right there in living color in WireShark.

Virtual Private Network (VPN) connections definitely improve the security of information coming in and going out of our networks. But once on the corporate side of the VPN, all that information continues to flow unsecured from the VPN endpoint to and from our servers. Please understand, VPNs are great and essential tools. But a VPN is only secure on the connection itself. Anything before or after the VPN endpoints is not implicitly secure.

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Entrinsik Announces Informer Data Bundles for Insurance Agencies

Entrinsik Inc. (http://www.entrinsik.com), NetVU Gold Partner and developer of Informer, an award-winning web-based operational reporting and analysis solution, recently announced the availability of data bundles for agencies implementing Informer on Vertafore's Sagitta and AMS360 management systems. The bundles include canned reports and data mappings allowing for instant implementation. The new data bundles were developed in collaboration with existing Sagitta and AMS360 customers and consultants reflecting the most requested reports. Informer bundles allow agencies to:

- Instantly access policy/client and accounting reports by parameters such as department, division, carrier, yearly comparisons and aging intervals;
- Create and customize reports on the fly without assistance from IT;
- Automate scheduled reports and distribution;
- Consolidate data across offices or divisions for one view of agency data in real time.

For years, Entrinsik has participated in insurance agency management system conferences and has been recognized as a valued supplier/vendor to Vertafore agencies. "We are committed to the success of agency customers and know immediate access to production data is critical for them", said Doug Leupen, President/CEO. "The objective of our Informer data bundles is to immediately help agencies leverage all their data to increase operational efficiencies and profitability".

About Entrinsik

Since 1984, Entrinsik Inc. has been developing, implementing, and supporting information management solutions that enable organizations to maximize performance and improve bottom lines. Entrinsik's Informer is an innovative, award-winning, intuitive operational business intelligence solution used by tens of thousands around the world. With an interactive web-based interface, Informer creates a self-service operational BI environment where users can customize reports and perform multi-database, on demand analyses without IT assistance. Entrinsik's SEMtek ERP software now drives many of the nation's largest professional and continuing education profit centers, incorporating event planning, registration processing, event fulfillment, event financial management, and direct marketing methodology into one comprehensive solution. To learn more about Entrinsik's products and services visit http://www.entrinsik.com or call 888-703-0016 today. ■

BlueFinity Keeps Pace with Evolving Application Development Landscape

In accordance with the BlueFinity roadmap, the development team at BlueFinity International has released a new version of its flagship product: mv.NET 4.2.3. mv.NET combines the power and flexibility of proven MultiValue technology with the feature-rich Microsoft .NET environment. Its seamless integration with Visual Studio provides a potent rapid application development environment fine-tuned for the MultiValue developer.

The latest release continues the rollout of important enhancements designed to provide the MultiValue community with increased longevity by enabling an even greater range of choice in the development of dynamic, enterprise class, MultiValue-based user interfaces and applications.

"Today's increasingly competitive market makes it crucial for resellers and developers of MultiValue applications to keep up with rapidly evolving end user expectation and demand," explains BlueFinity's CEO, Pete Loveless. "End user clients who have invested extensive time and money into their trusted MultiValue business applications don't want to turn away from their investment in order to get the modern look and feel they require. And proposing a migration to a completely new solution increases the risk that they might look at your competitors if they feel they are at the point of reinventing the wheel. mv.NET allows the MultiValue reseller to modernise their existing applications quickly, cost effectively, and with significantly less risk. They can deliver a modern, sophisticated look and feel to their existing customers while keeping all of the functionality and features of their proven solution. New accounts can be approached with an application that provides a stylish, modern GUI interface and a solid, proven, MultiValue back end that rivals the competition in terms of features, functions, performance, stability and efficiency."

mv.NET enables developers to quickly and easily create a highly cohesive business layer which is made up of .NET code modules in either C# or VB.NET allowing non-MultiValue developers to access and utilize the platform in ways which they find familiar and comfortable. This allows developers to focus on the task of creating line-of-business so-

lutions and not on the database 'plumbing' at the back end.

The business layer is built upon all of the rich features of the existing business logic and MultiValue Basic code. All entities can, when required, interact with this business functionality, giving a controlled and consistent business logic implementation. This results in much faster, more effective application development and reduced ongoing support costs, especially when combined with the RAD tooling that mv.NET provides for the rapid creation of menus and forms.

Since the business layer presents MultiValue data in a generic, widely consumable manner, it allows the full range of today's vibrant 3rd party tools to be used to deliver cutting-edge, visually compelling GUI interfaces to MultiValue-based applications.

mv.NET also allows for a phased development approach, reducing the risk of downtime. Roll out can be based upon the customers' ability to absorb the enhanced application rather than the schedule being dictated solely by having a fully functional GUI equivalent.

"The times of building it all yourself are gone for good," states Loveless. "A new pattern of using best of breed tools and services has emerged to allow sophisticated software to be created in acceptable timescales and budgets. It is in recognition of this reality that BlueFinity continues to lead the market in its provision of MultiValue centric tools for the most widely used and serviced application development environment on the planet — Microsoft .NET. And, in doing so, allowing MultiValue-based resellers and end users to utilise both the immense range of application development tools and the huge pool of .NET aware application developers in order to meet the significant challenges of this rapidly evolving application software development landscape."

mv.NET 4.2.3 is available now. For a full list of enhancements or to download a free trial, please visit www.bluefinity.com.

About BlueFinity International

BlueFinity International (www.bluefinity.com) part of the Mpower1 group of companies, supplies leading-edge software development tools and consultancy services to the MultiValue database and Microsoft developer communities. Founded in 2002 by a group of highly experienced software developers with expertise in all flavors of MultiValue databases, BlueFinity has created a series of products that offer superb programmer productivity along with components encompassing feature rich, business application centric functionality. Its flagship product — mv.NET — is a comprehensive solution for developers wishing to access MultiValue databases from within Microsoft's .NET environment. ■

New Tool Simplifies Inventory Analysis for Wholesale Distributors.

MITS, leading provider of advanced reporting and analytics solutions, today announced an important new inventory analysis tool for wholesale distributors using the Epicor (formerly Activant) Prelude distribution management system.

The Prelude Inventory Hypercube consists of a specialized, analytics-tuned data collection culled from inventory data in Prelude, that enables business users to quickly and easily perform a wide range of inventory analyses.

"By having the right inventory stocked at the right place, in a timely manner, distributors can significantly improve business performance in a number of areas," says Fred Owen, MITS President. "Better-managed inventory means lower cash requirements, reduced operating costs, improved service to customers—and higher profits."

Invaluable inventory insights uncover opportunities, deliver fast answers.

Used in conjunction with MITS Discover, the company's advanced, online analytical processing (OLAP) solution, the Prelude Inventory Hypercube gives business users two key views of inventory data: profitability, or Return on Asset, and inventory quantity and value across branches, vendors, product lines and an array of other dimensions.

"Most importantly, the Prelude Inventory Hypercube lets distributors analyze and maximize their return on the biggest investment they make," says Owen. "Every distribution business, no matter how successful, has a product, location, vendor or other area that can perform better. This Hypercube lets them spot those performance areas and determine how to improve them."

With the new solution, distributors can identify issues and opportunities such as:

- A low-profit product that's being carried in overly large quantities
- A high-margin product line that suffers out-of-stock problems or turns over too slowly
- A branch or location with unusually low — or high — Gross Margins or Gross Margin Return on Investment (GMROI).

Branch managers, purchasing agents and line buyers will typically use the new solution on a daily basis, Owen says.

"They'll spot shrinking stock levels, product line weakness, and specific winning and losing products," he adds. The solution will

Continues on page 18

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also help highlight where valuable space can be reclaimed, and pinpoint slowdowns in high-value stock — either company-wide or at specific warehouses or branches.

Finding the needle in the haystack — automatically.

Products like Prelude, Owens adds, are "superb at what they're designed to do — capture and manage operational data and transactions." But efficiently extracting critical information from the systems can be time-consuming and cumbersome, leaving opportunities and problems hidden.

"MITS Discover and the Prelude Inventory Hypercube solve that problem," he concludes. "Now, business managers and analysts can find out where the hot spots are, and then deal with them quickly, because the system does all the searching and sifting for them."

MITS Discover is a mature, state-of-the-industry analytics solution used by hundreds of organizations worldwide. The new Prelude Inventory Hypercube is already in use at key customer sites, and is available for licensing now.

About MITS

MITS is a leading provider of Advanced Reporting, Online Analytical Processing (OLAP) and Business Intelligence solutions. The company's product line includes both the MITS Discover OLAP Business Intelligence suite as well as the ad-hoc operational reporting solution, MITS Report. Founded in 1996 and headquartered in Seattle, Washington, the company's technologies are used by thousands of organizations, resellers, and systems integrators worldwide. MITS products are firmly entrenched in a wide range of business areas, including manufacturing, distribution, retail sales and services, education, government, healthcare, and insurance as well as in many other industries. For more information, go to www.mits.com. ■

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SPECTRUM UNIVERSITY

Spectrum University offers once a week training classes in a variety of topics pertaining to the MultiValue market. Looking for training for yourself or employees? Spectrum University Can help! Check out are latest offerings.

Upcoming Webinar Schedule

Syntax Comparison: MultiValue and C#/VB.NET
When working with a new programming language having a syntax comparison can be very valuable. This webinar will show you the syntax differences between MultiValue BASIC and .NET.

Implement ActiveDirectory Security in MultiValue Applications
All MultiValue Applications have security built into them, but it can be a bit disconnected from the rest of the business enterprise. This webinar will show you how to implement ActiveDirectory security within your application.

Back-To-Basics — Free
The Back-To-Basics webinars allow you to review or train new staff on how to use the basics of a MultiValue database. We will be doing classes that cover topics from Dictionaries, Display Formats, Correlatives, I-Types, PROCs, and many others.

MulitValue GUI Applications
After working for years in a Top-Down programming environment, changing to a GUI/Event driven environment can be a challenge. This webinar will cover different aspects of GUI development, include ways to translate "Legacy" applications into GUI environments.

Comparison: MultiValue vs SQL
This webinar will compare the MultiValue database structure to the a SQL Normalize structure. We'll generate SQL tables from MultiValue files, as well as create MultiValue files from SQL Table. These webinars are informative, and are provided to help understand the differences between MultiValue and SQL environments.

Database Triggers
Creating file and database triggers can be tricky with a few gotchas that you need to be aware of. This webinar will cover syntax, templates, and gotchas to watch out for.

For more information or to register please visit http://www.intl-spectrum.com/webinar

Managing Creative Talent

BY CHARLES BAROUCH

I met this man — nice guy, really smart — who had a simple philosophy. If two people disagree, it merely means that one of them doesn't have enough information to concede the point to the other one.

The problem with this assumption is that some questions have more than one right answer, and sometimes we disagree with one another because we are both right. People who see the world as my smart friend does are never going to be great at managing creative people. Creatives see the world in arrays of options, rarely in starkly defined absolutes.

From cave drawings to modern masterpieces, art is full of multiple right answers, nuanced differences, and glorious failures that had to be tried anyway. Starting with an agreed solution and relentlessly applying it is a wonderful approach for some tasks. Not all tasks resolve effectively with this approach. You can think of it as the difference between painting (a house) and painting (the Sistine Chapel). Both involve paint and brushes and a large surface, but one is mostly a matter of coverage, the other is a matter of imagination and expression.

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Scan Me!

I am not advocating that all creatives follow a single pattern. Creatives need to be consulted and observed.

Heard of Cats?

The popular phrase for managing any "difficult" group is "herding cats." And this is, unfairly to my mind, applied routinely to managing creatives. These people are generally more complex to manage than other groups, but most of the difficulty comes from trying to managing painting the same way you manage painting. They need a different approach.

Why are we discussing this in a Business Tech article? Because many of us are seen as "cats" in our various organizations. I would be willing to make the argument that most of us are cats. My friend and former boss, Eric Bischoff, had a sign over the IT room that read, "It's not a science, okay?" And we all know that, however much we'd like to see what we do as Computer Science, most of what we do is creatively reinterpret business practices into computer code.

Some of us are artists in more obvious ways. We do web design, we develop GUI interfaces, we build software that showcases graphical information. I've been to a lot of Spectrums, and OSDAs, and smaller user groups, and I've met a lot of cool cats. We are a creative group, and we are best managed by someone who sees us for what we are.

reCREATion

So, we have to retool some of the management rules if we want creative work to flow smoothly. One of the core places this applies are deadlines. Some days, I just can't summon the muse. Some days I just feel burnt out. How do you do a creative job when you are suffering your discipline's equivalent of writer's block? I like to have some rote projects handy for me and my team. I can pound out a report even when my mojo is in slo-mo. I can clean out dead files or do some other basic admin. Leaving some drudge in the schedule is good for creatives. Especially if it can be done with a loose deadline. A few hours of grunt work usually lets my

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mind percolate on the tougher projects while still getting something done with my time.

Another approach is to set goals and reward people who meet them with some downtime. If you really know the capabilities of your team, you can set rules like, "If the Henderson project is done by Friday, to my satisfaction, I don't care how long your lunches are this week." This is, of course, a trust exercise that requires trustworthy team members. When I work on projects for my own business, I have been known to build non-working time into my schedule. As a consultant, working off-site, I only charge for the hours I work, not for the total elapsed time, so I can perk myself with an Internet surfing break or other forms of goofing off.

Sometimes, my downtime is simply uptime on a different project. Writing an article as a head clearer before rewriting a web site, or alternating between some deep engine code and some bells-and-whistles features helps. Laser like focus is not my long suit. Multitasking is.

I Sense a Disturbance

I can't tell you how often I run into creatives who need, not want but truly need, to multi-focus. They can't really produce their own "A" effort without a TV on in the background or a pair of headphones piping music to their brains. Golfers need quiet to make that putt, some people need a room with muted colors on the wall to find their groove.

Creatives often need bright colors, background sounds, and other distractions to do their work. When I want to meditate, I like quiet. When I program, I crave a reasonable level of noise. Sit me in a dark room, bathed in the glow of six or seven monitors, leave a TV on in the background, and I am Mozart at the keyboard. Turn up the lights and enforce library-like silence and I will remind myself that as a professional, I am obligated to soldier on as best I can.

One size does not fit all with this category of employee. Clif Oliver has pointed out that for him to write, he needs to turn down the cell phone ringer, turn off the wifi, and immerse himself in the task. For my part, I wrote my last article on a break between giving presentations at Spectrum. As you can clearly see, I am not advocating that all creatives follow a single pattern. You can't just add that one page of tricks to your management handbook and mark this one "solved." Creatives need to be consulted and observed. Some of us don't know what's really best for us in terms of environment, we only know what works out of the limited choices we've been offered so far.

Continues on page 26

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CREATING BREAKTHROUGH MULTIVALUE APPLICATIONS

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cess. But now, new technologies that tackle the problem of turning unstructured data into accessible information are emerging, and you should consider how they can help you add breakthrough features and capabilities to your applications. Traditional dictionary-based ontologies used to search unstructured data require domain expertise and are limited to the quality of the dictionary. A modern linguistic analysis of concepts and relations produces more accurate and usable results, leading to far more productive interpretation.

How to Embed Real-Time Analytics

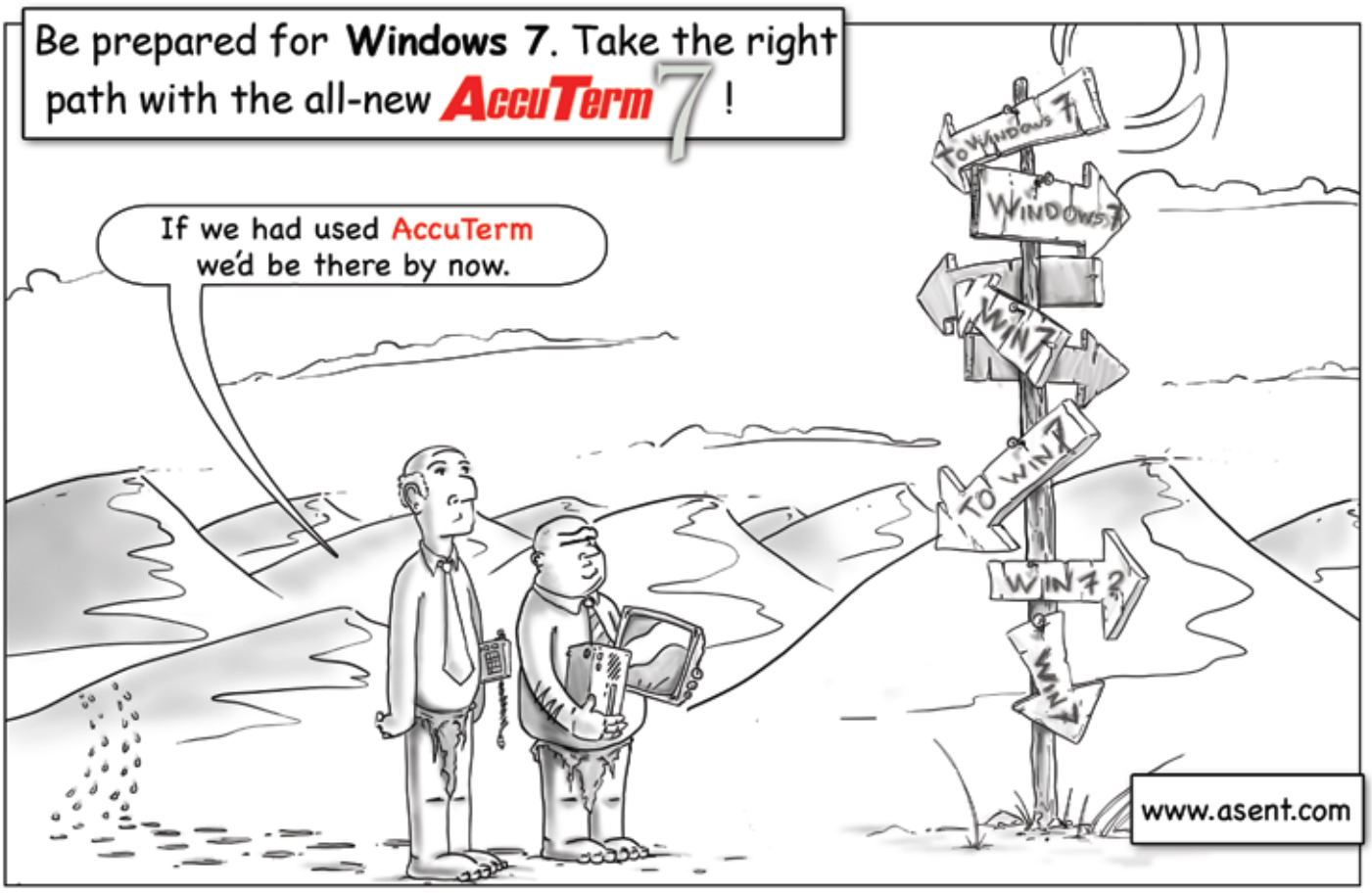
If you are going to empower your users to take action based on data gathered by your breakthrough applications, you must provide them with timely insight into the real meaning of that data. That means embedding real-time analytics, of both structured and unstructured data, right into your applications. Fortunately, MultiValue technology usually provides the kind of performance you need for real-time analytics. Look for tools that make the development of breakthrough analytic features as easy as possible.

There are several other things to consider as you assemble all the pieces of your breakthrough application. One is the level of complexity you are willing to endure. Juggling and gluing together a variety of software technologies from multiple vendors can be a daunting and delicate task. New releases of third-party tools may not run on your operating system or they may be incompatible with other applications. A specific product could be discontinued, deprecated, or the supplier could no longer be in business. This can make maintaining your own technology platform difficult. You undoubtedly forecast budgets for your IT projects, paying particular attention to how long they will take, how much they will cost, and what resources will be needed. Don't forget to budget for complexity as well. Failure to do so may reduce your ability to provide breakthrough applications.

In Conclusion

A "new style" breakthrough application connects users to their structured and unstructured data in ways that were unimaginable a few years ago. It has the ability to connect to disparate applications and communities, and provide insight through real-time quantitative and qualitative analytics. And it gives users the information they want, when they want it, and how they want it.

The technology to build breakthrough applications exists. With planning, good design, and advanced technology, you can build an application that will significantly add to your revenue growth today, and in the future. IS



BY NATHAN RECTOR

Sending E-mail from Your MultiValue Programs

Part 4: Using MS Exchange and Sockets

In the last few articles I have shown how to use command-line tools to help you send your e-mail, but many of you probably have MS Exchange or some other e-mail systems that do not provide command-line tools.

There are several open-source and freeware SMTP servers out there that work on both Linux/Unix, and Windows that you can use this method on as well.

How it Works

The main thing you need to keep in mind when using sockets is the SMTP Protocol. This protocol is really simple to implement. If you look at figure 1, you will see the output from a conversation with the SMTP server. Now let's look deeper at each of these lines and commands (fig. 1).

The first thing to do is connect to the mail server. You will need the IP address or host name for this as well as the port number the SMTP server is listening on. The standard TCP/IP port for SMTP is 25, but sometimes the server will require you to use a different port to relay e-mail through.

Once you are connected, you will receive a response in the following format "220 hostname SMTP Server read". Keep in mind that all response from the SMTP server will start with a "Message Code", Space and then a "Human readable message". This makes the checking and parsing of success and failure easy to extract with a FIELD statement:

```
M.CODE = FIELD(RESPONSE,
    → " ",1)
```

If you get anything other than a "220" when you first connect to the SMTP server, then the server is unavailable to you to send e-mails to. If this happens, you can just close the socket connection at this point.

A drawback to sockets is that each MultiValue platform implements them differently.

In order to continue sending, you must introduce your server to the SMTP server. This is done by issuing a "HELO servername". No, the "HELO" is not a typo. If you do your own research into the SMTP protocol, you will also see that a valid response is also "EHLO". The "EHLO" command provides you access to additional SMTP commands and more detailed response codes. For our purpose, we just need the simple commands provided by "HELO".

The SMTP server will now take the server name you supplied with your "HELO" command and do a reverse lookup to make sure it is a valid server on the network. Sometimes this is just lookup in a DNS server to see if the domain, server, or IP address exists. Other servers will actual do sometime similar to a trace route on the IP address to see if the name supplied is the same as what the trace route returns. This is why it is important to provide the correct domain information.

```
CONNECT:
READ: 220 mail.myserver.com SMTP Server ready
CMD: HELO mvdbserver.mydomain.com
READ: 250 mail.mydomain.com Hello [10.0.0.2]
CMD: MAIL FROM:nathan@mydomain.com
READ: 250 OK <nathan@mydomain.com> Sender ok
CMD: RCPT TO:nrector@mydomain.com
READ: 250 OK <nrector@mydomain.com> Recipient ok
CMD: DATA
READ: 354 Start mail input; end with <CRLF>.<CRLF>
SEND EMAIL DATA:
READ: 250 OK
CMD: QUIT
CLOSE:
```

Fig. 1

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Scan Me!

The SMTP server will provide a response code of 250 if it has decided not to block you from sending or relaying. From here on, if you want to close you connect you need to send the command "QUIT" before closing the connection. While you can just close the connection without issue the "QUIT", it isn't nice, and some SMTP servers will remember that and think you are a spammer or hacker the next time you connect to them.

The next few commands you issue tell the server who you are and who the e-mail is going to. "MAIL FROM" and "RCPT TO" commands are used by the SMTP server to decide if you are authorized to continue, and if the server supports relaying to the "RCPT TO" address. Again look for a response code of 250 as a successful response. If you get something other than 250, then issue "QUIT" and disconnect. The SMTP server will sometimes tell you why you have been rejected, so keep a watch on the "human readable" part of the response for this.

The "DATA" command tells the SMTP server that you are about to send the actual e-mail. The server will then accept all the data being sent to it until it receive a single line with only "." on it (<CRLF>.<CRLF>). If your e-mail has a single line with "." on it, add a space to the end of it, or some other character . Once you are done sending the e-mail, send the <CRLF>.<CRLF> to tell the server you are done sending the e-mail.

At this point, the SMTP server will do some additional checks on the e-mail you just sent it to make sure you are not a spammer or hacker. For example, this is when spam assassin or other spam filters happen. It will also check file sizes and other content for restrictions. This is also likely when it checks to see if the person you are sending to is actually valid, rather than during the "RCPT TO" command.

Continues on page 27

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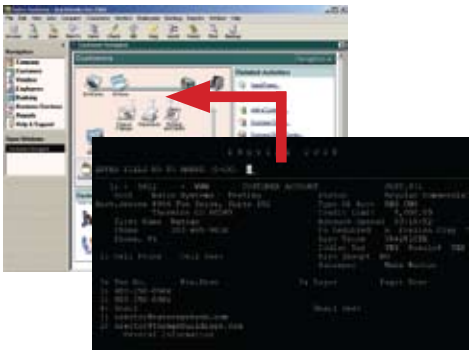

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CLIF NOTES: WHAT IS THE SOUND OF ONE HAND CRUMBLING?

Continued from page 30

tors might be using and therefore have lost part of your competitive advantage.

And, of course, there is always the approach of "let's ignore it and keep doing what were doing" in the hopes that we can just delay the inevitable long enough that we can retire before the asteroid hits. (Referring to the asteroid that most scientists now think precipitated the demise of the dinosaurs, rather than the painful condition sometimes experienced by meteors.)

What is the wrong answer, at least in my opinion, is to ignore the situation and do nothing. Whether that is motivated by fear of the unknown, being too lazy to learn something new, or because of having some sense that "our cause is just, therefore we must be Right" is completely irrelevant. We need to get this through our skulls — the users of our data are in control; we no longer have the final say. If our applications keep waddling and grunting like dinosaurs, they're going to meet the same fate as the organic dinosaurs did. They will simply die, get buried, and turn into fragile fossils.

Oh look. Did your application's left leg just break and fall off? IS

BUSINESS TECH: MANAGING CREATIVE TALENT

Continued from page 22

Normal? Define Normal

So, if we believe that creatives benefit from a more flexible set of rules and we accept that cooperatively developing those rules with the staff is the best course, you have one more question to ask yourself — isn't that the best way to approach your entire staff, not just your creatives?

Sure, the accounting team might prefer quiet in their work zone and the sales team might hate having day-glo walls, but they do have opinions about what makes a good working space. They aren't likely to be one-size-fits-all either.

Can you cater to everyone? No. It isn't management's job to re-invent the office every time someone is hired or fired. We, as management, do what we can with the budget, time, and corporate constraints we are given. I'm just saying that, within the limits we have... can't we be a little creative? IS

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THE TRIAL OF TELNET

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The Verdict

If you had an employee that unexpectedly dropped off the grid from time to time and was a security risk with sensitive information, would you want to hire a hundred or more just like that person? Yet, this is the choice we make each day by continuing a commitment to the Telnet protocol.

The Options

SSH is more secure, but not necessarily more reliable, and there are few SSH clients that support all of the terminal emulations we typically use. Telnet with SSL support is also more secure but amazingly rare, and it also does nothing to improve the reliability of the connection between the client and server.

Unfortunately, this reliability issue is not a simple problem as it is predicated on miles of cable and countless pieces of equipment that may be out of our immediate control. Nobody knows when a work crew will inadvertently drill through a cable or DSN line while planting a tree or rewiring a neighborhood. But could it be that our reliability concerns are predicated — if even in part — on our desire for persistent Telnet connections to our servers? Furthermore, if we reduced our need for persistent Telnet connections, might we implicitly improve reliability?

I believe the answer to both questions is "yes" and will explore these options in more detail next issue. IS

KEVIN KING is the President and Chief Technologist with Precision Solutions, Inc., a leader in technology solutions, support, and training. He is also the author of SB+ Solutions, an enthusiastic private pilot, and Christian guitarist and producer... as time allows.

SENDING E-MAIL FROM YOUR MULTIVALUE PROGRAMS — PART 4: USING MS EXCHANGE AND SOCKETS

Continued from page 25

Now all you have to do is issue a "QUIT" command and close the connection. You have just successfully sent an e-mail using sockets.

Database Sockets

Each MultiValue platform provides their own syntax for implementing socket communications. In order to avoid turning the magazine into 15 pages of code, scan the QR code or go online to the digital edition to get access to additional code samples.

Drawbacks to Using Sockets

Sockets are nice since it doesn't require you to rely on the host system to have the tools you need, but there are many features you are missing. The main feature that it lacks is Simple Authentication and Security Layer (SASL).

SASL provides encryption and security when transmitting the e-mail to the SMTP server. It also allows the SMTP server to make sure you are a valid sender, not a spammer or hacker.

Another drawback to sockets is that each MultiValue platform implements them differently. This requires you to create platform-specific programs, which is not likely to be a problem for you, but it can cause problems if you need to support cross-platform applications.

Gmail and Sockets

At one time you could use the socket approach to sending e-mail to Gmail. But now, Gmail requires SASL support. Due to the overhead and system limitations involved with generating encryption, what I'm showing you will not work without relaying through a local SMTP server. IS

Is Your Membership Profile Up to Date?

International Spectrum is currently working on updating membership information for all our readers. We always like to have the most current information so that we can keep you informed of current news in the MultiValue Market.

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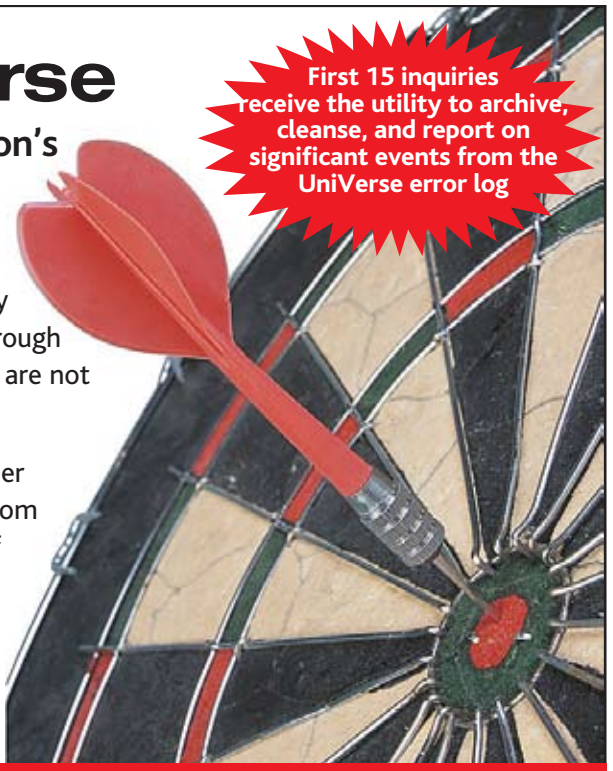

Modern MultiValue Unleashed ™

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Address Verification — Parsing

The address is a key piece of information in anyone's database, but it can be extremely hard to validate, and due to free form input, even harder to search.

Several years ago, I had a client that wanted to use the Address as data for validation when checking for duplicate information. The client works in the building trades and keeps tracks of job sites. Since more than one of their customers could be working at any one job site, they wanted to make sure that duplicate job site records were not created.

The client wanted a way to search for exact and/or like address, then display the results to the end user for them to select from.

If this was a new a new database, then the easiest way to do this is to require the user to break out the common information like the street name and address number. The problem was that the database already existed. The client needed to retro-fit the solution into the existing data. They also wanted to keep the data entry as normal as possible, so the division of the address number and street name was not a viable solution.

An address can be input in several different formats, but they all follow a common pattern. Look at the following examples:

```
Wilson Street, #B
100 Wilson Street, #B
100 Wilson, Apt. b
100 Wilson Street
```

Pattern: {address number}{street name}{type of street}{apartment or suite}

Using this format as the guideline, a subroutine was created that would parse the address into the following pattern.

The first thing that the routine does is check to see if an address number has been input. Once it has found all of the address number, then it checks to see what the street name is.

Street names can be a little confusing. At times people input 'Wilson Street' when they really want to have 'Wilson Lane'. Other times, only 'Wilson' is input as the street name. Due to this, the routine separates the name of the street and the type of the street (road, lane, ave, etc) from each other. This allows matches on just 'Wilson' and then checks to see if the street type matches up to create a more exact match.

For the same reason that 'Wilson' and 'Street' are separated, the apartment number is also separated from the address.

As displayed in the examples of the 'Wilson Street' address, the routine has to be able know when a part of the address is missing and move onto the next part. Instead of starting with one part of the address and finding that before moving onto the next part, the routine looks for all parts of the address as it spans the address string.

The end result of each example are:

```
Wilson Street, #B          = Wilson;;B;;Street
100 Wilson Street, #B     = Wilson;100;B;;Street
100 Wilson, Apt. b         = Wilson;100;B;;
100 Wilson Street          = Wilson;100;;;Street
```

Now that the address has been broken into common components, it can be indexed and searched. It can even be validated to make sure that all the information needed has been input.

You can download the subroutine from the International Spectrum at intl-spectrum.com/s1042. IS

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NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____

E-MAIL _____ WEB SITE _____

SIGNATURE _____ DATE _____

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

1. What is your job function/title?

☐ Principal/Owner
☐ President/GM/CEO
☐ MIS/DP Manager
☐ Controller/Financial
☐ VP/Department Head
☐ Sales/Marketing
☐ Programmer/Analyst
☐ Purchasing
☐ Consultant
☐ Other

_____

2. Is your company a (check one):

☐ Computer System Supplier ☐ Dealer/OEM/VAR ☐ Software House
☐ Consultant ☐ End User ☐ Other _____

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

☐ D3 ☐ Native MultiValue ☐ Reality ☐ Other _____

☐ jBASE ☐ uniData ☐ UniVerse ☐ uniVision

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

☐ Accounting ☐ Medical ☐ Direct Marketing ☐ Legal
☐ Banking/Finance ☐ Dental ☐ Construction ☐ Retail
☐ Education ☐ Insurance ☐ Other _____

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

☐ Under $500,000
☐ Over $1 million - $5 million
☐ Over $10 million - $25 million
☐ Over $100 million - $500 million
☐ $500,000 - $1 million
☐ Over $5 million - $10 million
☐ Over $25 million - $100 million
☐ Over $500 million

IS 03/08

CLIF NOTES: WHAT IS THE SOUND OF ONE HAND CRUMBLING?

Continued from page 31

> Their top reasons for going around IT? The need to respond quickly to changes in the market, self-sufficiency of their IT-savvy workforce, and the easy availability of top-quality IT services that can be bought without long implementation or testing (cloud and SAAs apps, primarily)."

Now, now. I know it is very tempting to chortle about our "mainstream" colleagues now also being viewed as dinosaurs. But just remember the old joke about the fellow who came home from work early and caught his wife in bed with a neighbor. As he held a gun to his head, she started laughing. "Don't laugh," he shouted. "You're next!" So telling our colleagues, "you're next," doesn't do a thing to remedy our own headlong rush towards extinction.

So, many of us in MultiValue find ourselves once again on the bleeding edge — not the front one, the other side. Through denial and/or procrastination, we find ourselves with five to ten years of catching up to do just to have our users decide whether or not we are irrelevant dinosaurs rather than it being a foregone conclusion. So what can we do to catch up and at least stay in the game?

One might be to consider going from green screen directly to browser-based interfaces. That at least gives you some of the advantages of a GUI interface at the same time you get some of the advantages of web-enablement. It might even be sufficient for accessing your data via a tablet. The smart phone platform, is another problem. But something is better than nothing.

Another might be to embrace the ideal of cloud-based application outsourcing and become the facilitators of that within our organizations. Of course, that means that you are simply using the same commodity as your competi-

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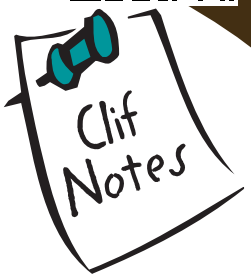
What is the Sound of One Hand Crumbling?



BY CLIFTON OLIVER

Unless this is only the first or second of these columns you have read, you are already aware that one of my hot buttons is getting rid of the green screens in our MultiValue applications. I have repeatedly made the point that having the most visible part of our applications using an antiquated approach to user interfaces is not just an embarrassment — it is probably a major contributing factor to why non-technical upper management kicks the MultiValue system to the curb (and the MultiValue developers along with it) and replaces it with something more "mainstream." If it looks like a dinosaur, waddles like a dinosaur, grunts like a dinosaur, well then, it must be a dinosaur.

So of course, it was with great pleasure that I edited Kevin Kings article about telnet. By the time I had finished reading his sardonic comments about green screen terminal emulators, I was chuckling (well, more like cackling) with mildly sadistic glee.

And then I got to Lee Burstein's article about breakthrough applications. Going through that piece definitely sobered my mood. While reading it, I found myself thinking that for at least the last year or so, I have been wrong about the importance of getting rid of the green screens. The situation is not as bad as I have been preaching.

It's worse.

In the Information Consumer's eyes, the green screen is already a distant memory. Every application worth using has been GUI-based for several years (in their minds). Now, it's all about mobile access. It started with the smart-phones, gained momentum with Apple's introduction of the iPhone, and has literally exploded since the introduction of the iPad. (I am not dissing the Android-based phones or the new non-Apple tablets. Apple happened be on the bleeding edge of mobile and set the trend.)

Your customers, both external and internal, expect to be able to access the data with mobile devices. That's a given. And they really don't care about your opinion on the subject. If you want to argue that the limited screen space on a smart phone doesn't lend itself to an adequate presentation of your applications information, you're making the same mistake, when for the last 10 years, you've been arguing that data entry with a GUI was slower than with green screens and therefore, the green screens were not only adequate, they were, in fact, superior. They are not going to believe you or any of your reasons about why making your application's data mobile-accessible is not desirable/practical/possible. And they have good reason not to believe that; your competitors are already doing it.

So now, you don't just have at least five years of GUI to catch up with. Now you have an additional 2 to 3 years of web-enabling and an additional 2 to 3 years of mobile-enabling to catch up with in order to bring your applications into something today's users will use. Otherwise, they will simply find other alternatives.

This was the direction my brain was already going when I happened across two articles in ITworld. The first was titled "Why businesses move to the cloud: They hate IT." (intl-spectrum.com/s1040) the second was "Cloud isn't making IT irrelevant; IT is doing that itself." (intl-spectrum.com/s1041)

It just seems to get worser and worser.

It would appear that the big push for rapid adoption of cloud-based applications is not coming from IT departments looking for ways to increase their ability to rapidly supply and deploy leading-edge capabilities to their users. Rather, the major push seems to be coming from users and their managers as a way to quickly get what they perceive they need by circumventing that the IT department who is either telling them that what they want is not what they really need or is going into "analysis paralysis" and telling them that they will institute a project and deliver to them a year and a half from now.

In the first ITworld article, it was pointed out that

> "Eighty seven percent of business managers said they agree or strongly agree that technology is critical to serve and support their customers, according to a Forrester survey of 2,961 business users from Q4 2010, presented at Forrester's IT Forum 2011 May 25 in Las Vegas.
>
> Sixty-nine percent admit their normal budgets – not the shadowy ones they use for rogue projects – include line-items to buy IT products or services without the involvement of IT.

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