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THE MULTIVALUE TECHNOLOGY MAGAZINE | JAN/FEB 2010

PLUS! CSS — Confusing Style Sheets?

If You Build It, They Will Come?

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THE MULTIVALUE TECHNOLOGY MAGAZINE

FEATURES | JANUARY/FEBRUARY 2010

DEPARTMENTS

From the Inside

BY NATHAN RECTOR

What is new for International Spectrum in 2010?

Well, the International Spectrum conference is coming up in a few months. The show is in Denver, Colorado again this year, but will be a month later on April 12th. That should avoid those surprise March snows that we had last year.

We have new must-see content this year. Along with the change in the MultiValue market at the end of 2009, (See Nov/Dec 2009 issue for a complete update) there is a lot to see, and many people to talk to.

So, what is new this year? Well, the first one is the awards night. The awards are:

- Most Influential person of 2009
- Most Innovative MultiValue tool
- Most Innovative MultiValue application

These awards are nominated and voted on by you. Don't miss out on the voting.

Mobile computing is one of the hottest things these days. With the release of Android, there is more and more reason to create mobile-based applications or access to your business. Blackberries have been doing this for years. But because of the infrastructure needed to create an enterprise app, many businesses have limited it to just e-mail. Now almost all modern mobile phones are using some kind of browser interface.

iPhones have been the ones to push the app-based computing, and Android has come along and is looking to give iPhones and Apple a run for their money.

There are several sessions that will be talking about creating mobile applications — both as stand-alone applications and the web applications. If you do not have a mobile app interface, now is the time to find out how to create one and add it to your enterprise software. Let's move beyond e-mail and into handheld enterprise computing.

Virtualization and cloud computing is the next biggest buzz. Attached to that is green computing and saving money in the Enterprise. We have sessions on virtualization and cloud computing that will educate you about options and what the technology can do for you.

We have brought back some of the classic sessions like: setting up ODBC, file structures and maintenance, document imaging, GUI design and development, web applications, business intelligence, as well as many, many more.

If you want to see a complete list of current topics, go to: intl-spectrum.com/conference

More topics are added weekly, so keep checking back to see what new topics are included. You can also see conference information on the International Spectrum Twitter and Facebook accounts.

Also new this year is a revamp of the International Spectrum web site. Not only do we have a new look and feel, we also will have more content available to help you in your day-to-day activities.

We will also be providing mobile apps to connect you to all your MultiValue resources, communities, and experts. We will be showing these applications at the Spectrum conference as well.

Another new thing in the International Spectrum magazine is MV User Profiles. We will be profiling MultiValue users so you have more information on what your peers

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JANUARY/FEBRUARY 2010

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Business Tech

Marketing

Part 1

BY CHARLES BAROUCH

Bikini — 50% OFF

The above title is a hook. Even if you've seen it a thousand times before, you feel compelled to look. That compulsion is a call to action, a motivator. Setting the hook is part of what marketing is about. If you had to sum up all of marketing in a quick sentence — called an elevator pitch — you could say that marketing is about motivation, metrics, and modification.

As the economy tightens, the ability to create interest — and focus interest — will increase in importance for business survival. If business needs it, we need to know how to support it. Let's delve into the first "M", Motivation.

Make a New Plan, Stan

While it is easy to think of marketing as designing ads, there is much more to the job. It starts with a plan. The interesting thing about marketing people is that they actually know what the word plan means. They assume that the plan will and should adjust over time. They know that reality will intervene.

A marketing plan starts with a clear goal. With a goal in mind, the marketing professional needs to find the right places for the messages. They don't pick the messages first, they pick the places. That's because marketing messages have to match three concepts streams: (1) the goal to achieve, (2) the over-arching theme, and (3) a connection to the place where the message is delivered.

Gooooal!!!

Goals need to be reachable and targeted. Examples: We want to introduce this product set; we want to sell $x worth of services; we want to acquire contracts with more resellers. If you have multiple goals, you generally need to create multiple campaigns.

Each of these goals implies motivation. The complexity of the goal comes from the degree of rethinking needed. How much effort are you trying to motivate your audience to expend?

Easy: Buy my brand of socks. The socks are easy because they don't require a long term commitment, nor do they require retraining.

Moderate: Switch from one type of smart phone to another. The phone is harder because it requires changes in collateral sales (software, cases, add-ons) and in features, look and feel, and perhaps a change in providers.

Hard: Buy my very expensive product, which is in a category that didn't exist three months ago. This last example is the hardest of the set because you

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BY DAVID COOPER, LEAD DEVELOPER, BLUEFINITY INTERNATIONAL

Creating a Powerful Business Objects Data Access Layer to Your MultiValue Database

In this article we shall be exploring how to use the new Solution Objects component of BlueFinity's mv.NET product to create a fully-formed, Visual Studio-aware business objects (BO) data access layer to your MultiValue database. By the term *business object* I mean an object- (or class-) based representation of the MultiValue database resident data, plus any additional additions or customizations of that data representation.

mv.NET is BlueFinity's flagship product. It is a .NET to MultiValue connectivity and productivity aid for developers wishing to create state of the art application user interfaces and web services for MultiValue-based applications.

The First Obvious Question

I guess one of the questions you might be asking at this point is "why would I want to create a business objects layer to my MultiValue database?" Well, if done properly, there are a number of very important benefits, some of which are detailed below:

1. A BO layer presents your MultiValue data in a generic, widely consumable manner. This allows many pieces of technology to consume and possibly update your MultiValue data. It also allows developers to focus on the task of creating line-of-business solutions and not on the database plumbing at the back end.
2. A BO layer provides an intuitive, strongly-typed data access mechanism. This allows more coding errors to be detected at design and coding time as opposed to at runtime. It also encourages developers to create more readable and maintainable code.
3. A BO layer allows the application developer to interact with the data persistence mechanism without the need to understand how that mechanism works. This means that the application developer does not need to understand MultiValue database technology to create MultiValue-linked applications.

Of course, other technologies allowing access to MultiValue data have been in existence for a number of years — ODBC connectors, ADO.NET providers, and XML data streams. However, it is only a properly formed, standards-based business objects layer that allows us to thoroughly address the challenge of providing flexible, high-performance, strongly typed, fully updateable database agnostic access to MultiValue data.

The Solution Objects Toolset

No matter what approach you use, there are a number of discrete tasks that must be performed in order to end up with a meaningful BO access layer, some of the main ones being:

- Identify the entities that exist within your application;
- Identify which files hold data relating to these entities;
- Create a mapping between your entity properties and your database fields;
- Embellish the interface of your entity classes with additional functionality, such as the invoking of server-side routines, custom business logic, etc.;
- Define how relationships between entities are to be represented — for example: cross entity selection, lazy vs. eager data loading, cascaded deletes, and others;
- Define the exposure of entities and entity members to developers; and
- Manifest the above information and definitions into physical program code.

The purpose of Solution Objects is to dramatically reduce the complexity and timescale of performing these tasks.

The mv.NET Data Manager utility has been extended to include a range of entity modelling and code generation features. These new features are accessed using the new "Entity Models" node within the Data Manager's navigation treeview (fig. 1).

You are able to create any number of entity models. Typically you'll have one model per application. And, if required, you can create multiple versions of the same model — for example, one that's the current production version and one that's the current development version.

What is an Entity?

An entity is a *thing* that your application deals with and, as such, can be a representation of pretty much anything — something physical or something abstract — it all depends on the *domain* that your application deals with.

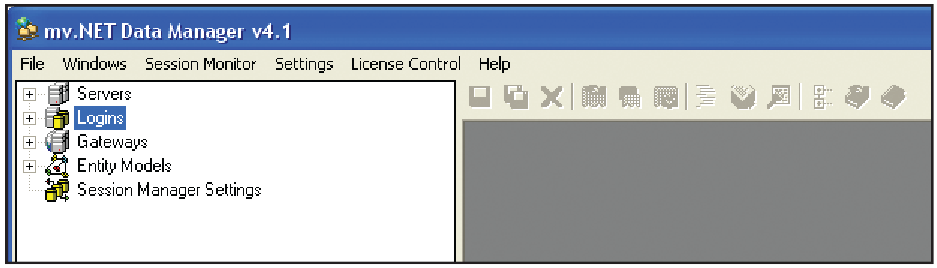

Fig. 1 The new "Entity Models" node within the mv.NET Data Manager

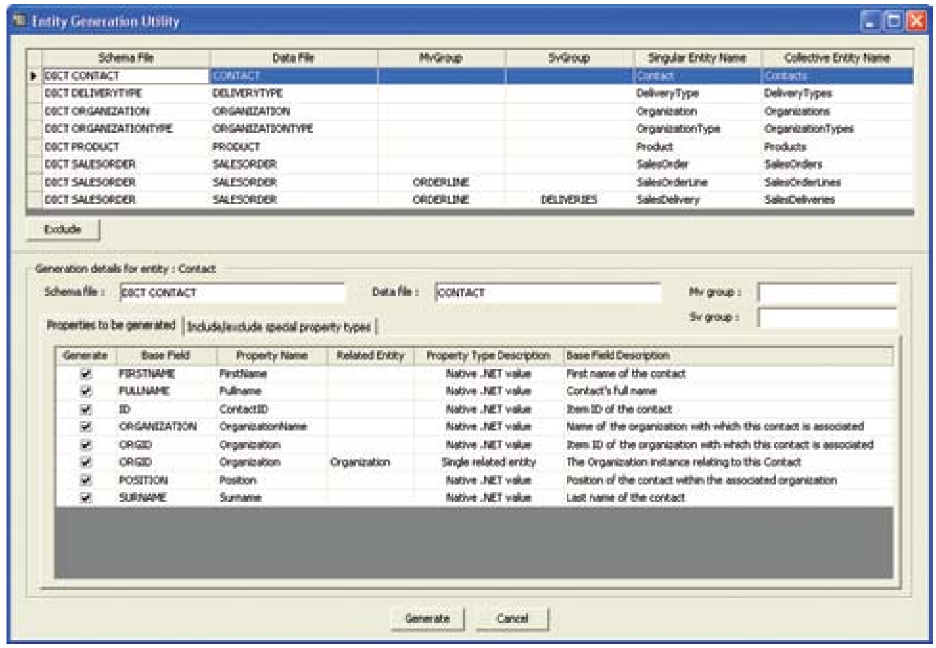

Fig. 2 The Entity Generator Utility Screen

"It is only a properly formed, standards-based business objects layer that allows us to thoroughly address the challenge of providing flexible, high-performance, strongly typed, fully updateable database agnostic access to MultiValue data."

If your application is a stock control system, your entities will probably be things like products, suppliers, purchase orders, etc. If you are creating a banking application, your entities are likely to be things such as bank accounts, customers, etc.

Defining Entities

The largest task that you will need to perform as part of your entity model definition process is the creation of entity definitions. However, the Data Manager provides an "Entity Generator" utility (fig. 2) which can kick-start this process by using your existing MultiValue dictionary items.

Data and Business Access Classes

Each entity within your model will have both a *Data Access Class* definition (DAC) and a *Business Access Class* definition (BAC). In fact, it can have multiple BACs.

The DAC is the definition of the class that will ultimately manifest the entity in hard program code — program code that the Data Manager will generate for you at the click of a button. As such, the DAC definition contains details of

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Introduction to
Confusing Style Sheets

BY KEVIN KING

CSS — that is, "Cascading Style Sheets" — are little bits of Internet sugar that can transform an ordinary web page into something really quite extraordinary. With a few cleverly crafted rules, it can be remarkably simple — and at times deceptively complex — to spice up your pages and sites with graphics, colors, shapes, and appropriate fonts.

With entire shelves of books written on the syntax and usage of CSS, it would be of limited value to attempt to do any justice to its power in this small space. However, I would like to take a moment to clear up some confusion about CSS specific to MultiValue professionals. That confusion — believe it or not — comes from the name "Cascading Style Sheets."

As software professionals, we understand the concept of a *style* as it relates to the presentation of something. Furthermore, we easily understand that a collection of styles is known as a *style sheet*. So far so good. The confusion, however, comes from the word *cascading*. To MultiValue professionals who may be new to the CSS game, the confusion may best be summarized in the immortal words of Inigo Montoya: "I do not think that means what you think it means."

MultiValue pros — and you know who you are — generally understand the concept of cascading in the context of SELECT statements at TCL. When the output of one SELECT becomes the input of a subsequent SELECT, we call them *cascading*. This is, of course, Very Powerful MultiValue Juju, as it allows us to execute one SELECT after another to filter a selected group of records based on what may otherwise be exceptionally complex criteria.

For this reason, we MultiValue folks tend to associate the term cascading with filtering. Start with something, cascade a few SELECT statements, and in the end we get an active select list with exactly what we want. While CSS allows a similar kind of filtering, that process has absolutely nothing whatsoever to do with the word cascading in the name — let the confusion begin!

To understand the definition of cascading in CSS we must first understand that there are a variety of style sheets that can apply to an HTML document, some of which we may not see or even acknowledge under normal use.

> First, styles can be specified inside any normal HTML tag using the style attribute. Let's call these *inline styles*.
>
> Next, styles can be specified in a <style> tag inside of the HTML document itself. Let's call these *document styles*.

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CREATING A POWERFUL BUSINESS OBJECTS DATA ACCESS LAYER TO YOUR MULTIVALUE DATABASE

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the properties and methods that are to be members of the class' interface. It is also the place where the mapping between the underlying database structure and the class content is defined.

The DAC definition allows you to specify "Selection Methods". These allow you to expose a specialized selection action as a method on the class's interface, allowing developers to use the full power of the MultiValue database selecting without needing to understand the *how*.

Finally, the DAC also allows you to specify "Subroutine Methods". These allow you to expose back-end MultiValue BASIC subroutines as methods on the class.

The Business Access Class definition is very different. Its main purpose is to allow you to control the exposure of DAC properties and methods to application developers — i.e., the developers who will be using the eventual BO layer. At the end of the day, it's the BACs with which the application interacts and references, not the DACs.

Business Access Layers

The final step before getting the Data Manager to generate some code for you is to define one or more Business Access Layers (BALs) within your model. The concept of a BAL is quite straight forward; it allows you to identify the BACs that are to be contained in a particular .NET assembly (dll) — this assembly being the file that you will distribute to the application developers to use as their BO access layer.

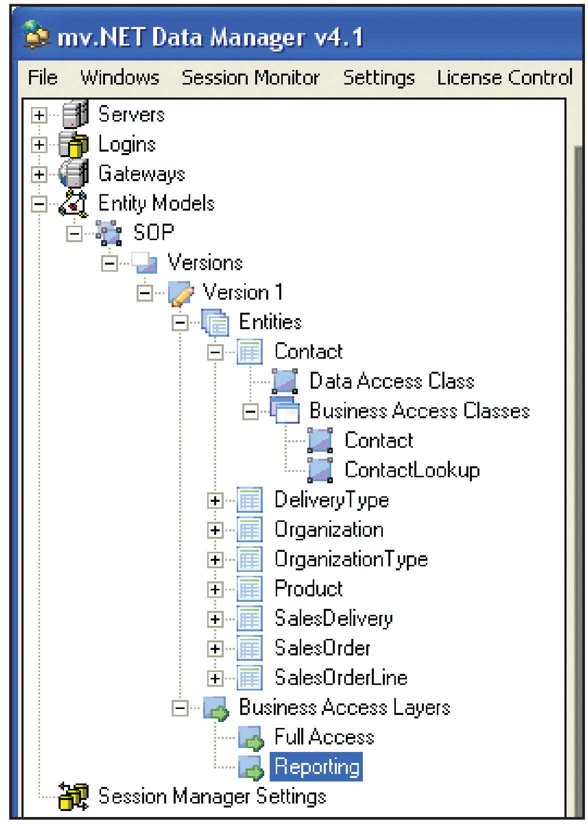

Fig. 3 Maintaining your Entity Model Definition using the Data Manager

You can define any number of different BALs, thus allowing you to fine-tune the content of the various assemblies that manifest the model. However, you must define at least one BAL in order to generate code.

All of the above definitions (DACs, BACs, and BALs) are maintained using screens linked to the Data Manager's treeview (fig. 3).

Generating Code

The ultimate purpose of defining your entity model is to allow the Data Manager to generate source code to manifest the model as a series of .NET classes. This source code can then be included within a Visual Studio project in order to generate the final BO access assembly for distribution to your application developers.

```
Dim SOPdata As DataRepository = Repository.Initialize("Server=SOP")
Dim person As Contact = Contact.Read(SOPdata, 101)
Dim fName As String = Contact.FirstName
Contact.FirstName = "David"
Contact.Update
```

Fig. 4

The Code Generator allows you to define a number of things:

- the physical location of the generated code files,
- the language of the generated code (VB or C#), and
- the exposure of the constituent Data Access Classes, i.e., hidden or exposed.

Once the source code has been generated, you can include it within a Visual Studio project, build the project, and voilà — you have your BO access layer assembly. Job done!

The Fun Bit! Using the BO Layer

All that application developers need to do to use the BO access layer assembly is to add a reference to it within their Visual Studio application project. Once this is done, they can use it in a number of different ways. The first way is to use it programmatically.

For example, if we have a BAC called "Contact" with a property called "FirstName", we might have some VB code as shown in figure 4. Let's look a bit more closely at the code.

The first line instantiates a DataRepository instance. This identifies to the BO assembly the place where the persisted data associated with the classes in the assembly can be found. In this case, we tell the assembly to use the mv.NET login profile called "SOP" (mv.NET login profiles contain database connection definitions).

The second line uses one of the CRUD methods automatically included within a BAC: "Read". Passed into the Read method are the DataRepository instance and the item ID of the required contact, "101". In our DAC, we defined the contact item ID to be a numeric value; therefore, the Read method forces an Integer data type to be supplied.

The third line extracts the value of the FirstName property.

The final two lines alter the FirstName property value and persist this data change to the database using another of the built-in CRUD methods: "Update".

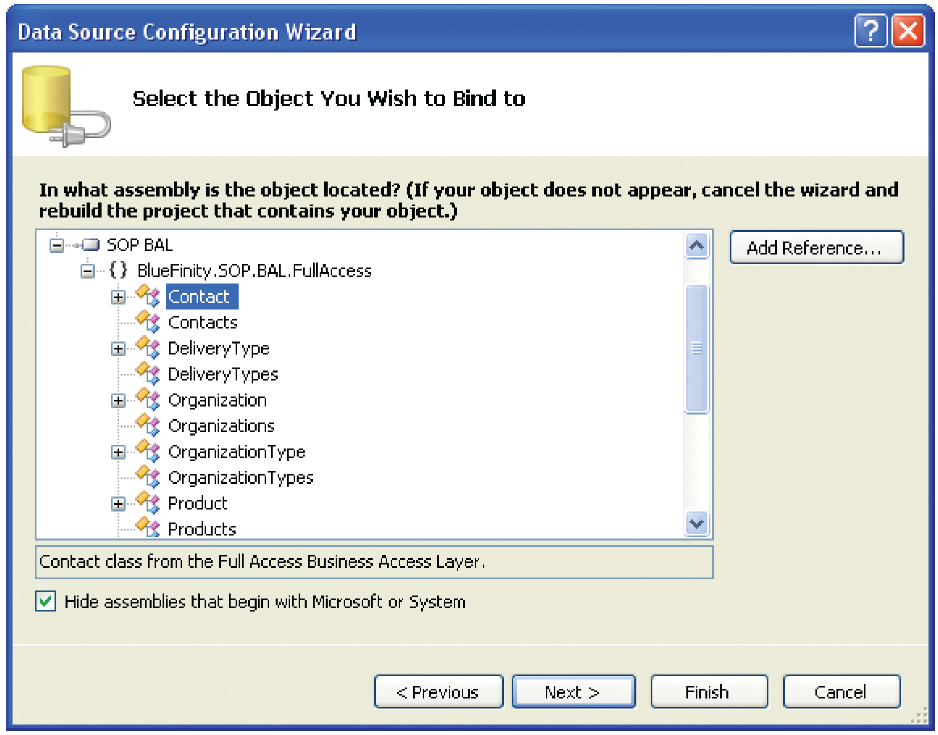

Fig. 5 Adding an Object Datasource in Visual Studio

Using Visual Studio Data Sources

A second way of using the BO assembly is to include it as a standard Visual Studio object data source. Once this is done, any component that can use an object data source will be able to access your data. One example of this is data binding. Both Web and WINForm applications support object data sources and the Code Generator automatically includes everything required to support bi-directional data binding.

Using Visual Studio's data sources window's "Add Datasource", you select an Object Data source and select a class from your BO assembly (fig. 5).

Once you've done this, the class will be listed in the Visual Studio Data Sources window and from there you can drag-and-drop onto the surface of your forms to your heart's content.

Summary

You can use a properly formed business objects access layer in lots of different ways. In doing so, it opens up your application development horizons and can be a great simplifier and time saver for application developers.

Watch the BlueFinity product space for further innovations over the coming months, including Silverlight integration – oops, that's done it, don't get me started on that one; you'll never get me to shut up! IS

BY JARED BRATU, REVELATION SOFTWARE

Applying the Object Oriented Programming Technique of Encapsulation to MultiValue Code *Part 1*

Learn to leverage features in MultiValue code to implement the object-oriented programming technique of encapsulation. Stop thinking about functions and start thinking about objects.

Let's start by discussing existing MultiValue techniques and considers why the concept of encapsulation is useful.

Build Upon What You Know

Since the early days of MultiValue programming, the common practice has been to take all of the logical functions and events related to a specific screen and combine them into a single function. This single function is called a *commuter module*. Ultimately, a commuter module is nothing more than a library of functions (or a function with internal subroutines) that facilitates a task.

The idea of a commuter module is similar to a Visual Basic code module that contains all the event code for the form. If the screen was designed around a business process then the commuter module was designed to support the screen and was dependent on the screen data. Together the screen data and the commuter module complete a business process. The screen data and commuter module also abstractly form a primitive object.

In object-oriented programming, an object is a group of functions that represent a logical purpose. For example, in a point of sale screen, the functions that deal with the inventory items being purchased represent a product object while the functions that handle the different forms of payment represent the receipt object. For objects to be modular the functions and variables that combine to make the object are encapsulated inside the object.

What is Encapsulation?

Encapsulation is the programming practice of grouping related functions and the variables the functions manipulate into an object. The object exposes the encapsulated methods (functions) to the programmer.

These methods are designed to allow easy and logical access to the functions and data encapsulated inside while hiding the functions and data that are specific to the implementation of the object. The exposed methods also provide a common interface so the implementation can be changed without affecting the code utilizing the methods.

Why Apply Encapsulation to MultiValue Code

The debate on object-oriented programming versus function-oriented programming is no longer widely discussed. Current industry-standard languages all utilize object-oriented techniques. Students in the technology field are taught to think in terms of objects. These are the same people en-

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APPLYING THE OBJECT ORIENTED PROGRAMMING TECHNIQUE OF ENCAPSULATION TO MULTIVALUE CODE — PART 1

Continued from page 14

tering the MultiValue world and who probably shudder at the thought of using a GoSub call to modularize code. Having an object-oriented paradigm in a function-oriented language, like Basic+, can help bridge the mind-set gap and result in overall code quality improvements.

Without encapsulation, commuter modules (libraries) often treat the data as a variable to be received, worked on, and then returned. This often leads to blocks of code that do nothing but rearrange data. Several lines of code may be required to transform the data before it can be passed to the commuter module. To accomplish the business process, a block of code may require several different commuter modules

Having an object oriented paradigm in a function oriented language, like Basic+, can help bridge the mind-set gap and result in overall code quality improvements.

(libraries). Instead of the programmer seeing the business process behind the code, the implementation obscures the business process.

Just as traditional functions provide discrete separation between specific tasks, objects provide discrete separation between entire processes. The usage of the object should reflect the business process and hide the implementation.

Code within objects is easier to maintain than code in long general purpose functions. The scope of the code within the object is well defined and if the interface to the object or the format of the data being returned from the interface doesn't change, you can firmly determine a new code change won't break an existing routine. Within a large general purpose routine, it is all too easy to be left guessing if changes to a block of code need to be made somewhere else if the original programmer copied and pasted the from another section of the program.

If you have worked with C++, Java, or Visual Basic .NET (yes, it is an object-oriented programming language) the practicality of objects and how they encapsulate functions and variables are likely evident. The next section discusses leveraging Basic+ so you can think about your function-oriented code in an object-oriented way.

How to Harness Encapsulation

A commuter module is a code function with internal subroutines that are related to each other. The commuter module acts as a library and, as explained earlier, is normally separate from the variables it manipulates. By extending the idea of a commuter module to encompass its variables and then provide methods (i.e., internal subroutines) to manipulate those variables we tread down the road of encapsulation.

The code examples in the next issue and the concept of variable named commons are from the Revelation Basic+ MultiValue environment but the concepts can be applied to other MultiValue languages.

To harness encapsulation the technique of building a commuter module (function) that can operate as separate instance of an object must be established. The key behind each object instance is a private memory space that is only available to that unique object instance. Without the private memory space, routines outside of the object have the ability to directly change the object and the purpose of encapsulation is lost.

The implementation of a private memory space is best covered by first reviewing the concept of common variables. A variable that is declared to be common is globally available in all variable domains inside the program. Typically, global variables are assigned into a group of related common variables. This group of globally available variables is called a *named common*.

As the term *named common* implies, the variables are referenced by a single name defined during the development phase. Basic+ extends the idea of named commons to allow for variable named commons. A variable named common is a the same as a regular named common except it is referenced by a common name defined dynamically during runtime instead of statically during the development phase.

The variable named common support in Basic+ is the feature used to create private memory spaces for each instance of the object. By combining commuter modules that focus on an object (not a specific task) and variable named commons we can implement encapsulation. Don't think of functions as a segment of reusable code to manipulate variables. Start thinking about functions as self-contained objects with methods built from commuter modules and private variables.

The next article will solidify the concepts covered and provide concrete code examples of the concepts discussed in this article. **IS**

Excel Pivot Tables:

Another Tool In Your Toolbox

BY CANDI HART

With the variety of technologies available today, people are always looking for new ways to do things faster and better. Databases are still required to contain large volumes of data and ERP packages prevent the duplication of data entry while providing access to data throughout a company. In addition, nearly every desktop has Excel.

People are comfortable with spreadsheets, and experienced users can analyze data and create professional looking reports. Since all MultiValue platforms now provide a way to move data into a spreadsheet, I would like to provide an example of using Excel pivot tables to generate a summary report and sort that data in several different ways.

Let's start with some transaction data from an invoice file (fig. 1). We will assume for simplicity here that the data is stored without multivalues.

To create a summary report from that data using MultiValue English or Access, we'd use the command in figure 2.

And you would get a report that looks like figure 3.

Now let's compare that to what you could get if you used an Excel pivot table. You would first transfer the data from the MultiValue file into an Excel spreadsheet. For this example, just enter the data from figure 1 into a spreadsheet.

Click on any cell, then open the 'Data' menu at the top and click on 'Pivot Table and PivotChart Report'. You will be in the pivot table wizard and you can just accept the defaults to create a second worksheet where the data will be summarized.

If you move the fields that you will want to sort by (customer, week shipped,

Invoice#	Customer	Week Shipped	Product	Qty Shipped
1234*1	Smith	11/2/2009	Tape	18
1234*2	Smith	11/2/2009	Pencils	12
1235*1	Smith	11/2/2009	Pencils	19
1236*1	Smith	11/9/2009	Tape	19
1237*1	Smith	11/9/2009	Tape	16
1237*2	Smith	11/9/2009	Pencils	17
1238*1	Smith	11/9/2009	Pencils	17
1238*2	Smith	11/9/2009	Tape	14
1239*1	Smith	11/16/2009	Pencils	12
1239*2	Smith	11/16/2009	Tape	14
1240*1	Jones	11/9/2009	Pencils	17
1240*2	Jones	11/9/2009	Tape	15
1241*1	Jones	11/16/2009	Pencils	12
1242*1	Jones	11/2/2009	Tape	16
1243*1	Jones	11/16/2009	Tape	20
1244*1	Bell	11/16/2009	Tape	14
1245*1	Bell	11/16/2009	Tape	19
1246*2	Bell	11/2/2009	Pencils	18
1246*3	Bell	11/2/2009	Tape	19
1248*1	Bell	11/16/2009	Pencils	12

Fig. 1 Transaction data — Invoice detail file

```
SORT INVOICE.DETAIL BY PRODUCT BY WEEK BY CUSTOMER BREAK-ON PRODUCT BREAK-ON WEEK
BREAK-ON CUSTOMER TOTAL QTY.SHIPPED ID-SUPP DET-SUPP
```

Fig. 2 Sort Command

and product) into the 'row area', and the field that you want to total (Qty Shipped) into the 'data area' you get the report in figure 4.

Notice that the report totals the same, but now you can choose between several different formats on the Pivot Table icon bar. I chose one to create figure 5. I believe this report looks much more professional than a MultiValue listing.

The next cool thing you can do is drag and drop a different column (like customer) to the left and the pivot table will resort in the new order — by customer, by product, by week. We could, of course, do this with our MultiValue database, but we would have to re-type the English statement.

The thing is, now that there is a PC on every desk and most users have Excel, users expect to be able to manipulate their data and create their own pretty reports. If you haven't used pivot tables, I hope this gets you excited about the possibilities. There are free spreadsheet samples on the Web and lots of classes available.

And for those long standing MultiValue advocates, I hope this example shows you how a combination of a MultiValue database and Excel spreadsheets can provide a fun new look and feel to your reports.

The thing is, now that there is a PC on every desk and most users have Excel, users expect to be able to manipulate their data and create their own pretty reports.

CANDI HART has been an independent consultant in Southern CA since 1980. She was known as Candi Piech when she served as president of CDBMA. She may be contacted at candi.acp@gmail.com

```
Page     1
PRODUCT  WEEK...       CUST.. QTY

                       BELL    18
                       SMITH   31
         11/02/09              49
                       JONES   17
                       SMITH   34
         11/09/09              51
                       BELL    12
                       JONES   12
                       SMITH   12
         11/16/09              36
PENCILS                       136

                       BELL    19
                       JONES   16
                       SMITH   18
         11/02/09              53
                       JONES   15
                       SMITH   49
         11/09/09              64
                       BELL    33
                       JONES   20
                       SMITH   14
         11/16/09              67
TAPE                          184
                              320

20 Items listed.
```

Fig. 3 Multivalue Report

Sum of Qty Shipped			
Product	Week Shipped	Customer	Total
Pencils	11/2/2009	Bell	18
		Smith	31
	11/2/2009 Total		49
	11/9/2009	Jones	17
		Smith	34
	11/9/2009 Total		51
	11/16/2009	Bell	12
		Jones	12
		Smith	12
	11/16/2009 Total		36
Pencils Total			136
Tape	11/2/2009	Bell	19
		Jones	16
		Smith	18
	11/2/2009 Total		53
	11/9/2009	Jones	15
		Smith	49
	11/9/2009 Total		64
	11/16/2009	Bell	33
		Jones	20
		Smith	14
	11/16/2009 Total		67
Tape Total			184
Grand Total			320

Fig. 4 Completed Pivot Table

Product	Week Shipped	Customer	Qty Shipped
Pencils			
	11/2/2009		
		Bell	18
		Smith	31
	11/2/2009 Total		**49**
	11/9/2009		
		Jones	17
		Smith	34
	11/9/2009 Total		**51**
	11/16/2009		
		Bell	12
		Jones	12
		Smith	12
	11/16/2009 Total		**36**
Pencils Total			**136**
Tape			
	11/2/2009		
		Bell	19
		Jones	16
		Smith	18
	11/2/2009 Total		**53**
	11/9/2009		
		Jones	15
		Smith	49
	11/9/2009 Total		**64**
	11/16/2009		
		Bell	33
		Smith	14
	11/16/2009 Total		**67**
Tape Total			**184**
Grand Total			**320**

Fig. 5 Formatted Pivot Table

Why Attend?

It is difficult for technology managers and senior data management technicians to find meaningful training that can provide both breadth and depth in targeted technologies.

The International Spectrum conferences have proven, for many MultiValue professionals, to deliver the best value as a training alternative to pure depth training (e.g. a 4-day class on Database Performance Tuning). The quality and quantity of educational value of the International Spectrum conference has been consistent and cost beneficial for over 29 years.

The conference offers nearly 100 technical sessions. The presentations are conducted by a mix of MultiValue users, developers, tools providers, database providers and consultants. Throughout the conference, there are ongoing opportunities to discuss technology with MultiValue developers, fellow users, and vendors across a broad continuum of database, tools, and related product issues.

Who Attends This Conference?

Executives, Chief Information Officer (CIO) and Executive and Senior Level Management, Owners, Consultants, Influencers, Technical Staff, Implementers, Sales, Operations and Production, Industry Leaders, and Vendors.

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	Price After 03/01/10	Price By 03/01/10
❑ **Full Conference Package**	**$1095**	**$895** Save $200!
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❑ **Exhibits Entrance Pass**	**$35**	**Free** Save $35!

Register online at www.intl-spectrum.com/conference

NEWSMAKERS

Onix Systems Group Partners with Entrinsik to Deliver Self-Service Reporting and Ad-hoc Analysis Capabilities

Onix Systems Group Inc., provider of budgeting solutions for the healthcare industry, and Entrinsik, Inc., a leading provider of cutting edge operational reporting and analysis solutions, today announced a partnership to integrate Informer Web Reporting into the Onix Budget System.

Informer is a powerful Web-based reporting and analysis solution providing end-users with real-time access to their data. It includes the ability to extract data from multiple systems using self-service report customization and ad-hoc analysis capabilities that presents information according to the demands of a varied user audience. The Onix Budget System is being used by hospitals and health regions, large and small, to facilitate the preparation of their operating budget. It incorporates the use of server and client technologies to deliver budgeting capability to the end-user leaving control with the finance department.

"Our approach at Onix is to provide the appropriate tool set for each user group utilizing proven technologies," says Ken Szreier, President at Onix Systems Group Inc. "By partnering with Entrinsik, Onix can now deliver Web-based reporting to its customers providing real time access to their Onix database," says Szreier. "Our customers will find the ad-hoc data analysis features particularly useful to gain a better understanding of their budget components."

"At Entrinsik we are committed to partnering with companies like Onix that deliver well designed solutions that simplify information sharing and improve decision making," says Doug Leupen, President and CEO of Entrinsik. "Onix's expertise working with hospitals to facilitate the collection of budget data provides us with a tremendous opportunity to add value to a critical industry through the use of Informer."

Onix Systems Group Inc.

Onix Systems Group Inc. was incorporated in 1991. Since its inception it has focused on the needs of the health care sector. Ken Szreier, the president of Onix, has over 25 years of experience working with hospitals to implement software solutions. The Onix Budget System is the culmination of these efforts. Onix is located in Mississauga, Ontario. For more information, call (905) 949-6649 or visit www.onixsystems.ca.

Entrinsik, Inc.

Since 1984, Entrinsik has been developing, implementing, and supporting database solutions that enable organizations to maximize performance and improve bottom lines by tracking, understanding, and managing information. Thousands of technical and business users around the world utilize Entrinsik's Informer Web Reporting software to natively extract data from production databases, providing a single point of Web-based access to customizable reports for real-time reporting and analysis. Entrinsik is headquartered in Raleigh, NC. For a demonstration of Informer or a free trial, call us today at 888-703-0016 or visit www.entrinsik.com. ■

Hellman & Friedman Acquires Datatel

Datatel, Inc., the industry's most experienced provider of higher education software, services, and insight, announced that affiliates of Hellman & Friedman,LLC have completed their purchase of Datatel. The planned acquisition from Thoma Bravo and its co-investors, including Trident Capital, HarbourVest Partners, and JP Morgan Asset Management, first was announced on November 9, 2009.

"This marks another milestone in the growth of our company," said John Speer, Datatel President and CEO. "The business community once again has confirmed Datatel as a high-quality asset that has grown stronger over its 40-year history. Hellman & Friedman recognizes our ability to continue to provide innovative solutions for our higher education clients, making them more competitive and improving service to their diverse constituents."

"Hellman & Friedman has been observing the consistent growth of Datatel for a number of years, and we have been extremely impressed with its stability, technology, and excellent reputation for client service," said Anupam Mishra, Director of Hellman & Friedman. "We look forward to working closely with management to continue to grow this world-class software franchise."

About Datatel, Inc.

Datatel is the most experienced provider of technology products, services, and insight to higher education. Colleges, universities, and technical schools across North America partner with Datatel to build Strategic Academic Enterprises dedicated to achieving student success. The company has focused exclusively on higher education since 1979, and its technology is used by nearly 800 institutions serving more than five million students. For more information, visit www.datatel.com.

About Hellman & Friedman

Hellman & Friedman is a leading private equity investment firm with offices in San Francisco, New York and London. Since its founding in 1984, Hellman & Friedman has raised over $25 billion of committed capital. The Firm focuses on investing in superior business franchises and serving as a value-added partner to management in select industries including business services, software and information services, internet/digital media, asset management, insurance, other specialty financial services, media, healthcare, energy and industrials. Representative investments in the software sector include Activant Solutions, Inc., Blackbaud, Inc., Intergraph Corporation, Iris Software Group Limited, Kronos Incorporated, SSP Holdings plc, and Vertafore Corporation. For more information on Hellman & Friedman, visit www.hf.com.

About Thoma Bravo, LLC

Thoma Bravo is a leading private equity investment firm that has been providing equity and strategic support to experienced management teams building growing companies for more than 28 years. The firm originated the concept of industry consolidation investing, which seeks to create value through the strategic use of acquisitions to accelerate business growth. Thoma Bravo applies its investment strategy across multiple industries with a particular focus on the software and services sectors. In the software industry, Thoma Bravo has completed 40 acquisitions across 13 platform companies with total annual earnings in excess of $600 million. For more information on Thoma Bravo, visit www.thomabravo.com.

About Trident Capital

Trident Capital is a leading venture capital and private equity firm with more than $1.5 billion of capital under management across six funds, including over $400 million raised in its most recent fund, Trident Capital Fund VI. The firm focuses on investments in the Enterprise Services and Software, Internet and CleanTech sectors. Within its sector focus, Trident invests across multiple stages, including venture capital, growth equity and leveraged buyouts. Current and past software investments include Xata, Inc.; Qualys, Inc.; PivotLink Software; Host Analytics; Invention Machine Corporation; Epicor Software; and numerous other software companies. Trident Capital has made over 150 investments since its inception in 1993. The firm has investment offices in Palo Alto, CA and Westport, CT. For more information please visit www.tridentcap.com. ■

New Products

Announcing Improved SQL Interfaces to the UniVerse and UniData Data Servers

The U2 team at Rocket Software announces a renewed focus on improving SQL interfaces to the UniData and UniVerse data servers.

Microsoft SQL Server Driver Support

Starting with the November release of UniData on Windows, the Rocket U2 team will deliver and support the Microsoft SQL Server driver for External Database Access (EDA) on Windows platforms. The same driver is available now in the Early Adopter release of UniVerse 11.

To obtain the SQL Server driver for EDA, contact U2AskUs@rs.com. Please tell us what database you're using when you do so. External Database Access (EDA) is required in order to use the SQL Server Driver. EDA is available for Workgroup and Server edition and is included with Enterprise edition of the databases.

Common Mapping Tool and Schema Generator

In addition, we are in the early planning stages for an improved, common mapping tool and schema generator for fully describing the U2 data model in order to generate SQL and EDA schemas. This new tool will provide a modern, extensible interface for both initial mapping as well as updating of schemas. This tool, with its associated APIs, will improve deployment of ISV solutions to end customer sites thereby saving time and speeding time to market.

This tool will be available with UniVerse 11.1 and in a UniData 7.3 release to follow. ■

Purveyor Software Beta Test in 2010

Racine Enterprises Inc. (REI) has released its Purveyor Software, V2.0, for Beta Test. We are actively seeking companies in wholesale foods distribution (fresh, frozen, even catering), wholesale/retail hard goods (lumber, building supplies, rentals, furniture, clothing, electronics, electrical, plumbing, and/or HVAC) who are willing to test and use Purveyor in return for free software and services for the product.

REI is a small software, IT services, and business consulting company located in Maryland. Having over 20 years experience in software, we are ready to re-launch the Purveyor part of our business. We have recently revamped it to be a full-GUI product, complete with GUI field editing, mouse control, MS Office integration, and GUI Rapid Application Development tools. Purveyor is feature-rich, has a modern business model, and enjoyed earlier success but has not been saleable recently until this release due to its previous green-screen user interface. It is now available as a web-enabled application service provider (ASP) REI-based service, a web-enabled customer-based version, or a customer-based client-server version.

Purveyor is general-purpose ERP/MRP software which was born in the wholesale foods distribution industry, where we also supported manufacturing and retail functions in the same businesses. Foods is, in general, a more demanding industry than hard goods and our significant experience with hard goods wholesaling and retailing allowed us to extend Purveyor to fully support the needs of hard goods businesses. In fact, some of the foods distribution features, such as lot/pedigree control, which industries such as lumber and building supplies need but conventional hard goods applications do not supply, Purveyor does. Purveyor has complete Inventory, Warehousing, Manufacturing, Truck Routing, A/R, A/P, Sales, Purchasing, and G/L modules, as well as significant analytical capabilities. It specializes in Just-In-Time (J-I-T) Inventory, Lot Controlled Inventory, Master A/R & A/P (Bill-to & Pay-to), and Activity-Based Cost (A-B-C) Accounting. It supports case/box inventory and partial item billing/catch-weights in its inventory tracking. It has a full-scale physical inventory system. It supports bar-coding. REI can provide RF-warehousing and distribution tracking as well.

Please see REI's website at http://www.racent.net for full, professional product documentation (both marketing- and user-oriented) about Purveyor Software, REI's Building Blocks 4th Generation Language and RAD Tools in which Purveyor is wrapped, and the REI organization. A Demo "Sandbox" system is open to the public at the REI website using the Main Office System Demo, Satellite Branch Demo, and the C:\REI components. There, you may use Purveyor to try applications such as order entry, purchasing, and many others.

REI is involved in software, energy, and medical devices, as well as strategic planning, IT & business consulting, project management, and technical writing. REI successfully markets the Hill-Climbing Wheel Chair. REI is also the author of the "flagship" AP strategic plan for Pick Systems and the BP "beyond petroleum" strategic plan, and has had a pivotal positive developmental influence on MultiValue systems and AccuTerm. REI owns one patent and has other inventions in various stages of development and marketing.

REI presently enjoys a business alliances with Ramdata Systems Ltd.in the UK, as well as being a reseller for Via Systems in the U.K., and with AccuSoft Enterprises Inc. in the U.S., as well as less formal associations with other MultiValue vendors.

REI would be pleased to discuss any special needs you might have and will provide customizations to the product at reasonable rates. We are eager to get Purveyor back out to the market and will work hard to satisfy sincerely interested customers. We are interested in both U.S. and international business.

You may contact us at jpr@racent.net or (301) 661-6011. ■

BUSINESS TECH: MARKETING — PART 1

Continued from page 6

have to sell the concept and the product at the same time.

To get into the mindset of that last one, imagine if you were selling the first automobile. Horses were reliable, socially acceptable, and the world was laid out on the assumption of horses as travel. Cars need wider roads, smoother surfaces, gasoline — which wasn't easily available in the early days — and the know-how to keep it running.

> *As the economy tightens, the ability to create interest — and focus interest — will increase in importance for business survival.*

Add the noise, the smells, the general ugliness of the early vehicles, and you can see the problem. You aren't selling a type of car, you are selling a whole new approach to travel. Now, repeat the mental exercise with the first commuter airplane. Suddenly, Mac vs. PC doesn't sound like a hard switch to pitch.

Theme Song

I met with a company recently to discuss marketing. I asked them what their overall message was. The lead on the project said, "My message is that I have two kids and I need to keep bringing home money so I can feed and clothe them." While that is a familiar refrain, we needed to find the external theme, the story that would compel people to purchase. There are often themes which work well with specific products, but there are also several fairly universal themes to consider.

One core theme is *savings*. This is where coupons, discounts, BOGO (buy-one-get-one), and other tools come into play. The slippery slope in all this starts with the horribly misleading word: Free. We'll talk about these more in part II on this topic.

Another important theme is *value*. This is about comparing the product to the alternatives: Spectrum bulbs are 50% brighter than bargain bulbs; MultiValue has flavors; Our green screens are greener.

Perhaps the best core theme is *trust*. Oddly, trust has less and less to do with track record every day. If the world likes your spokes-executive, they will forgive your crappy quality control. If they don't like your 'face' they will have a harder time buying from you.

There are exceptions. Some companies are so entrenched in our minds that we see them as entities. It doesn't matter to most people who speaks for Purina or GE, we buy or don't based on the company. These patterns of trust can be found everywhere.

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INTRODUCTION TO CASCADING STYLE SHEETS

Continued from page 10

Styles can, and commonly are, stored separate from the HTML and linked into the document using the <link> tag. We'll call these *external styles*.

Finally, each browser has its own *default style* collection which may include defaults set in the browser configuration.

As if that were not enough, some browsers even allow you to specify your own *user styles* to be applied if no other styling rules can be found.

With all of these different ways for style rules to be applied, the browser has to establish a pecking order to select the appropriate rules for each HTML element, otherwise pandemonium could ensue.

Fortunately, this process has been well established by the independent W3C (World Wide Web Consortium) and not the browser writers. Even more fortunate, most browsers *mostly* respect the W3C recommendations and thus avoid total chaos and anarchy throughout the World Wide Web. It is this process that CSS refers to as *cascading*, and by understanding it, we can both leverage its power and avoid its pitfalls.

A typical web user believes that when a browser receives a document from a server, it immediately begins to render that document. Au contraire! When the browser receives a load of HTTP packets from a server it first parses the document into a multidimensional structure in memory.

As the document is parsed and styles are received (often via a separate HTTP request), the browser cycles through the multidimensional structure and applies the style information to each element it finds. But from where? Style information could exist at as many as five different places!

> *With all of these different ways for style rules to be applied, the browser has to establish a pecking order to select the appropriate rules for each HTML element, otherwise pandemonium could ensue. [...] It is this process that CSS refers to as "cascading,"*

Perhaps the easiest way to think of style sheets is to visualize a document.

When the browser is first launched, this "style document" gets loaded with the default styles for the browser – that is, the styles that we typically don't see or edit.

The user style sheet and preferences, if configured, are then used to update that document with any changes. When the user browses to a page, if there are any external style sheets referenced by that page they are sequentially applied as edits to this style document in the order they appear.

After the external style sheets have been processed, the browser then edits the style document with any document styles that have been defined in the <style> block.

Finally, as each element is being processed for styling, inline styles override any other settings.

We could also view the application of style rules in the reverse, somewhat comparable to a fail over strategy. The browser first looks for style settings on each HTML element and then fails over (i.e., cascades) to search for applicable document styles. It then fails over to search for external styles, then user styles, then default styles. While this is actually a more accurate definition of cascading according to the CSS specification, it's also potentially more confusing. Feel free to use whichever definition makes the most sense.

Whichever definition you prefer, there are, of course, exceptions. At any of the style locations a rule can be marked as "!important" which gives it the power to override everything else.

Furthermore, if there are multiple rules defined at various levels, the browser will attempt to use all of them. Finally, if the same style option is specified multiple times, with different settings each time, all other issues being equal the latest one that the browser encounters will be the one that it uses.

So how does this translate to CSS power?

First, by understanding that !important overrides everything else, you have a

Continues on page 29

Personal

Biggest business — related pet peeve:

Users who don't listen to what you tell them.

Personal Computer:

PC

If I were in another line of work, I'd be:

A Professor

Business leader I'd most like to have lunch with:

Glenn Beck

Career Track

How long at the current company?

Five years

Career accomplishment I'm most proud of?

Still being here after 39 years. Really my kids, their spouses, and grandkids, that is far and away most precious to me.

Most important career influencer or event?

My sixth grade teacher, Irene Doe. She believed in me even though I did not.

What decision would I like to do over?

Not be so rigid in my dealings with people.

DANNY PASSIG

CTO, DataSolv Services, Inc.

On The Job

Size of IT team:

Two

How many MultiValue DBAs/Programmers?

One

What business process is run by your MultiValue application?

95%

Top initiatives:

Dealing with changes in the medical billing field, and new legislation that may come out.

How I measure IT effectiveness:

It must be working good, if I hear no complaints or don't get problem reports.

Vision:

Advice for future CIO/CTO?

Embrace change, it will only accelerate, go with it, don't fight it.

What MultiValue applications/product do you use?

DesignBAIS, 1mage

MultiValue Database Platform?

D3, UniVerse

Where do you see an increase in IT uses in the next 5 years?

Security

What changes do you see in IT in the next five years?

User interfaces — operability will be more intuitive.

What does your IT crystal ball says is gong to happen in the next 5 years?

More intuitive interfaces, less hassle with dealing with the computer. It will do things more the way you want to, not making you do things its way.

BUSINESS TECH: MARKETING — PART 1

Continued from page 26

I was on a focus group once (can't say which product) and the panel universally had the same opinion of the kinder-cuter-gentler ad they showed: "We take your company seriously — this ad hurts our opinion of you. In other words, we trust you to be the serious product in your market and this ad breaks trust." Brand recognition is about how the audience sees the product, not about how the company sees itself.

Connection

Putting a perfume ad in Popular Mechanics is a bad idea if it is the same ad you put in Vogue. With the right spin, putting that ad in Popular Mechanics might be brilliant. Acknowledging that a woman can read technical magazines and still likes to smell alluring is one way. Selling male readers on buying your perfume as a gift is another. So, connection can be going with the flow or it can be intentionally breaking with the flow. The key to both approaches is belonging.

If I say that I'm from New Jersey and you say "What exit?" it tells me that you know something about how that state is laid out. If you say, "Ah, the Garden State!" I know that you read a fact book, but you've never been to my neighborhood.

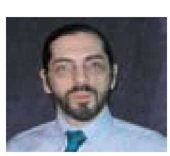
Connection with the magazines I read, the shows I watch, the sports I follow, the... you get the idea. It is all about proving that you and your audience are part of the same community. That makes connection a close cousin to respect.

Recently, Intel has actually put a risky spin on this pillar of marketing. Instead of trying to make their ads prove that they belong to your club, they seem to be daring the audience to say, "You are wrong, I am exactly like you guys." The ads are challenging *your* right to be in *their* club. Each of these ads feature the theme "Our ___ is not like your ___." The approach seems to be working well enough that new ads are still airing. They range from the insipid "Cut the Cake" ad to the almost hip and ironic "USB Groupies" ad. I wouldn't have run those ads, but they do stick in your mind.

That last idea, stickiness, is very important. I often quote two ads that I saw many years ago as Great Terrible ads. The first shows a screwdriver's butt end pushed against a screw and says, "It's not the right tool if they don't know how to use it." The second shows a man in a zookeeper's uniform snoozing beside a cage and says "He'll wait eight months for two pandas to mate but he won't wait eight seconds for your web page to load."

These are great ads because they show connection. You know that these marketers know your pain. They understand your frustrations. These are ads that come from a perspective we contend with in the real world. They are terrible because I have no idea what the product was in either case. The first might have been for training or it might have been selling professional services, but I will never remember which particular company was being featured. The second might have been for optimizing software, or a faster database, or even a better hosting provider. I'll never know so it will never change my purchasing decisions.

How do we know when an ad we place is having an effect? All this and more will be revealed. Stay tuned for the next installment of Business Tech, the series. IS



CHARLES BAROUCH is the CTO for Key Ally, Inc. He is current President of the International U2 Users Group, and a regular Spectrum Magazine contributor.

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INTRODUCTION TO CASCADING STYLE SHEETS

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handy sledgehammer available when you absolutely, positively have to override something.

Next, knowing that inline styles override everything not marked as !important you have a slightly smaller hammer available as needed. (Interestingly, most JavaScript animations rely upon this feature to do their magic.)

Finally, understanding that at any level whatever the browser sees last is what it's going to use, it's easy to safely test style changes by simply copying an external style sheet to a new name, making your changes, and then adding a <link> to this new style sheet below the original in the HTML document. This simple technique can be a huge time saver when doing CSS restructuring or site refactoring.

With dozens of styling options, a comprehensive (and appropriately complicated) selector mechanism, plus a few browser-specific hacks and issues, CSS is complex enough without the additional burden of terminology differences. Now, go taste for yourself how sweet this Internet sugar can truly be! 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.

Building a Better Business Case

BY SHANNON STOLTZ

It's a new year, and with it new IT budgets and new IT initiatives. You've met with your clients or internal business stakeholders, and you know what issues they are trying to solve going into the new year. You've done your research, and now you want to propose the solution so you can get the approval to move ahead with the project.

So, how do you convince the business to give the go-ahead and allocate the time and resources to the project? By laying out the project in a business case.

It doesn't usually work to just say, "Let's implement this technology" expecting the decision makers to take your word for it and shower you with free reign and all the resources you need. Businesses don't invest in technology unless they can see how it is going to benefit the bottom-line and believe it's the best investment to make right now.

Decision makers are tasked with the job of making sure the technology projects they approve will overall help the business accomplish its goals. And they are held responsible for those decisions.

So how do you get your project approved? By taking the time to present the project in terms the decision makers can understand and by anticipating all the questions and concerns the decision maker is going to have. By having all the information available up front, you have a much better chance of getting your project approved.

Basic Building Blocks Of A Business Case

Here are eight questions that every decision maker I have ever worked with has wanted answered. By making sure your business case answers these, your chances of approval are much higher, and your credibility goes up for the next time a project needs to be proposed.

1. What Is It?

So, let's begin with the most basic question of all: What is it?

Generally, start with what the project is or product is, and the type of project/product it is. Even if your decision maker is technical, the next decision maker up the approval chain may not be. So to make it easier for your project to be approved, it's a good idea to assume that the business case you are preparing will be the basis for what gets passed up the approval chain. If possible, find out who is in the decision making/approval process and imagine them when writing what the project is about.

It's usually better to couple any project/product name with a less technical category description. So let's say you are wanting to implement the fictional BIDecisionFlow software, assume that your decision makers are not going to know what that is. So, explain, "BIDecisionFlow, a business intelligence software that allows us to dynamically pull information from all of our databases into composite reports..."

2. Why Do We Need It?

Now while it may be obvious to you why the business needs the technology or to do the project, it isn't going to be to everyone who will be involved in the decision or who will be part of the project.

A good business case describes both the strategic value a project gives and the day-to-day value.

And the object of a business case is to get approval and buy-in for your project as quickly and as seamlessly as possible. So, it's best to clearly spell out why the project is needed.

But when you do so, explain it on the level of the most non-technical person in your approval chain. For example, if you are preparing a business case for additional database licenses and the ultimate decision maker doesn't know what a database is, you need to explain that the database stores the all the business information that the software then uses to perform key business functions (and if necessary, explain what those key business functions are).

Now I'm not talking about being condescending, but merely enough information for the decision makers to clearly understand what you are talking about and how it relates to business. If the business has key performance indicators or a strategic direction that the project/purchase aligns with, mention that.

3. What Will It Do For The Company?

So, what will this project/purchase do for the business — in the business's terms. Generally when I'm drafting a business case I like to think of this through the levels of the organization:

- Is this going to help run the business, grow the business, or transform the business?
- How does it fit in with the overall goals of the business?

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BUILDING A BETTER BUSINESS CASE

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- Does it help improve productivity? Mitigate risk? Save administrative/IT/overhead costs? Will it help lower the cost of raw materials?

A good business case describes both the strategic value a project gives and the day-to-day value. So, in our BI tool example, a day-to-day value is that it will give the business quick and easy access to composite business information, replacing what was a cumbersome, time-consuming manual process. The strategic value is that implementing the tool will help grow the business as it helps the business track how well it's doing against the strategic goals and key performance indicators, and allow the business to react to and anticipate changes in the market.

This is an area where it pays to understand the business your company (or your client) is in. And where it pays to talk to/consult with key end users or business stakeholders who would be impacted by the project to understand how they are currently doing the work and/or issues they are having that this would eliminate or make easier for them.

Ultimately the business is not going to invest in the technology unless it makes sense from a business aspect, so this is the area where we really need to show in business terms how the business will be impacted.

4. What Are Our Options?

Now that we've outlined what the project/purchase is, what it does, and what it will do for the business, it's time to explain the options and the pros and cons of each, as well as your recommendation.

Nearly all projects can be scaled for the most frugal and basic of implementations to full-scale, fully-featured, customized implementation, and of course the in between. Rather than propose an all or nothing solution, you may have more luck with your proposal if you think in terms of options and propose two or three, if they are available.

So in case of our BI tool example, I could provide the option of a full on-site implementation by the vendor and set-up by a consultant, with training for all employees who will use the software; the option for a do-it-ourselves implementation, with on-call help from the vendor and an off-site consultant, with training for one or two key employees who will then train the other employees; or a variety of other options depending on what I feel might make sense for the business, its size, and resources available.

It's really best to do the due diligence so that you are offering no more than two or three options to choose from with a recommendation for what you think would best serve the business. And be able to clearly articulate why you think your recommendation is best for the business.

Also realize that there may be other factors happening elsewhere in the business that you don't know about that may make the decision maker choose another option or even propose one of their own. Remember your loyalty is in helping the business to succeed, not to the exact recommendation you are making.

5. Who Will It Impact?

The next key piece of information is who will the project/purchase impact? Which department? Will it cause an increase in workload for a period of time, or a decrease in workload? Will it ultimately reduce staff (FTEs)? Will it enable a department or business function better perform its job? If so, which one and how?

If the project involves outsourcing, bringing in outside help, be sure to mention that. Part of a decision maker's job is to manage the people resources effectively through change, and change brings out interesting reactions in people, especially change that causes the perception that jobs may change or be eliminated.

The decision makers in your approval chain need to understand what the people impact will be, and how that will impact the business (both from an emotion, morale standpoint and from a bottom-line financial standpoint).

6. What Are The Costs?

And finally we get to the costs. What's the cost to do the project? I'm sure that you already know that the cost of a project is not just in the purchase of the product or tools. Have in your hip pocket the breakdown of costs through each of the stages of the project: discovery, development, implementation, testing and training, and maintenance.

And look at those costs, not just from an IT perspective, but also a business stake holder perspective:

- People wise, what resources do you need from the business or need to bring in from the outside?
- What are the costs from a hardware, software, communications, and people (time and labor) perspective?
- What's the accounting impact — will it be amortized. If so, over how many years? Are you leasing or purchasing?
- Are there on-going licensing and/or consulting costs each year?
- What's the projected useful life of the project/purchase?

In your business case, layout the high-level summary of these costs and financial considerations, but have available the details in case you are asked for them. If you are proposing options, then have this available for each option you propose.

You want to make this decision making process as easy and painless as possible. Be sure you can back up your information, because I can guarantee someone will ask more questions, and more than likely question your numbers.

If you can, balance the costs against the value of the project, but be conservative. Business decisions makers are rarely interested in — or believe — "pie-in-the-sky" numbers.

IT projects are often underestimated cost-wise and over estimated value-wise. Long term, you will be more credible if you can deliver projects on or below budget and provide more value than expected. So build that into your business case — expect the unexpected in your costs and be conservative in your expected return on investment.

7. What Are The Risks?

Risks are one area that many IT professionals leave out of their business cases, but this is a key area. No one likes to

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BUILDING A BETTER BUSINESS CASE

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be blind-sided by problems, especially not business decision makers, who are ultimately responsible for the success of the decisions they make.

It's imperative to mention any risks of doing and not doing the project, and to explain what could be done, or is being done, to mitigate those risks. In the case of a project that will address contractual or legal compliance issues, be sure to mention that as part of the value of the project and then share the risk of both doing and not doing the project.

If you are proposing moving from one set of hardware to another or one software tool to another, address expected and unexpected downtime risks and contingency plans.

If there are legal consequences for not making the purchase (like with buying additional software licenses) or implementing the solution or one like it (as the case with a tool that helps with SOX or other government mandated requirements), then be sure to mention it.

While we don't want to make potential risks bigger than they are, we don't want to hide them either. Most savvy business leaders know that nothing is without risk, and, depending on their background, they may have had bad experiences with previous IT projects. It will help your credibility to address those concerns in an upfront, straight forward manner that clearly is thinking of solutions that are best for the overall business.

8. What is the timeline?

And finally, what is the proposed timeline for the project? While a detailed project plan is generally a good idea later, the type of timeline we need for a business case is high level, hitting on the major dates that are relevant to the decision makers/approval chain and the overall project.

Have you taken into consideration any business deadlines or significant events that would impact the project and or the business?

It is also a good idea to mention if you've factored in dates or time periods that are important to the business or the decision. For example, there's a government imposed deadline for compliance, mention that you've factored that in with enough buffer time for slippage; or if you are switching out software needed for key business operations, mention that you are doing it during the slow season so that it doesn't impact end of year or tax season, or the busiest time of year.

Wrapping It Up

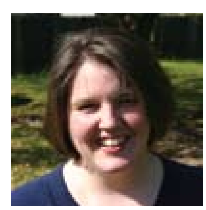
Most often, there's more work that goes into preparing for a business case than actually is put in the business case itself. But the background work and preparation you do helps build your credibility and the credibility of the project. And, by anticipating what the decision makers need to know to make the decision, makes it much easier for them to approve the project.

Realize that there are many factors that go into the overall business decision to invest in technology — including money, resources, and other strategic initiatives. If your proposal isn't accepted, that doesn't mean you are being shot down. It's not personal. Sometimes it means more information is needed, or this just isn't the right time for the business right now.

But you can better your chances for approval by getting to know more about your business and where it is going, and delivering possible solutions in a way that helps the business move forward. As you improve your ability to meet the business' needs and show the value your projects can and are producing, the more your career will grow.

To learn more techniques for building a better business case, please join me for the Building Better Business Cases session at the International Spectrum conference April 12th through 14th in Denver, Colorado.

If you aren't able to make the conference, then please be sure to sign up for the free e-course at BetterBusinessCases.com. IS



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CLIF NOTES: ANOTHER DECADE OF MULTIVALUE

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vendors. A lot of the "new" stuff people are getting into has been there for a while. But until the economic crunch caused a lot of our shops to start looking for ways to accomplish business objectives without throwing another (different) system at the problem, a lot of these tools have been sitting there unexplored. I think that's natural. When we're busy, we use what we know, especially if it has worked well for us up until now. It's only when we hit something we don't know how to handle that we go looking for new solutions. Unfortunately, by that time someone has pronounced "MultiValue can't do that," and we miss another opportunity. I can't help but wonder how many MultiValue systems have been abandoned because MultiValue can't process PDFs, MultiValue can't talk to outside vendors, MultiValue can't talk to Oracle or SQLServer except by flat files, MultiValue can't… You get the picture.

So here is what I would like to propose for 2010. Break out of your comfort zone. Learn what your MultiValue system is really capable of doing. Get a current copy of your platform's documentation and read it cover to cover. (This is especially important for us dinosaurs who have been working with these systems for two or three decades.) Then branch out to the tools arena. Find out what options exist for enhanced reporting, business intelligence, data communication to and from non-MultiValue systems, etc.

Perhaps you're not the type who likes to just browse available technologies. Fine. Take a more targeted approach. Make up a problem or project and figure out how to do it. Say your shop has CRTs in the warehouse, or PCs running a terminal emulator. What would it take to replace those with a GUI interface? What would you use to do it? Visual Basic? Java? Web technologies like Ajax? Your database vendor's GUI application development product?

Or what about Business Intelligence? What are some of the Key Performance Indicators in your organization? How would you go about putting them on a dashboard? If you wanted close to real-time updating, how could you get that information out of your system without having to modify any of the existing code or driving the system into the floor by doing huge selects every five minutes? Don't be surprised if after you've figured out a solution to a new problem you suddenly start seeing how it can be used in other situations.

If 2009 was the year of learning to "do more with less," let's make 2010 the year of "expanding the use of MultiValue in the company." IS

FROM THE INSIDE

Continued from page 4

are doing. This issue (Jan/Feb 2010) is the first issue to have a MV User Profile in it.

Because of the diversity of MultiValue users, you will find people from both small and large companies showing up here. We will also be posting these profiles online, along with easier access to other magazine-related content.

If you have not already looked at the magazine archive, now may be a good time to do it.

All in all, there are a lot of new things going in 2010 — both with International Spectrum and in the MultiValue market in general. IS

-NATHAN RECTOR
President, International Spectrum
nathan@intl-spectrum.com

SHORT-LINKS

What are those short links in the text of some articles?

As our authors share their knowledge and experience, they also point you to the Web for more info. Some of these URLs are long and cumbersome to use.

To make the URL easier to read and use, we are now using Short-Links to redirect you to the web page the author recommends.

The format (intl-spectrum.com/s9999) drops the "http://www." from the front.

Most modern browsers fill that in for you, or you can add it back in.

Comments or additional suggestions? Please drop us a note at editor@intl-spectrum.com

Tech Tips

BY DANIEL WAGNER

D3/Linux Time Synchronization

We have several D3/Linux systems where over one to five days the clock gets out of sync. Since the system is used to punch in and out and produce payroll hours, an accurate time clock is needed.

This program uses the D3 Basic command !rdate -p time-a.nist.gov to retrieve the correct date and time from an NIST server, compares the D3 date and time to it, and makes the appropriate correction.

This program can run in USER-COLDSTART, on logon , background, before file-save etc.

Removing the astersisk from the *test lines will record the captured rdate information in an MD record so you can see it.

DANIEL WAGNER of Taurus Computer Group can be reached at dwagner200@yahoo.com.

Do you have a Tech Tip to share? E-mail it to editor@intl-spectrum.com

```
* LINUX TIME CHECK
* Dan Wagner 12/12/2009 315-656-3470
* linux systems time sync
* use's  unix linux rdate COMMAND
* rdate -p time-a.nist.gov
* above gets accurate date and time from NIST server
PROGRAM.SW='Y'
*test OPEN 'MD' TO F.MD ELSE
*test CRT " NO MD  FILE  , PRESS <RTN> ":;INPUT XANS FOR 70 ELSE
XANS='X'
*test STOP
*test END
*
13* HERE TO TRY AGAIN sometimes rdate does not return properly if busy.
  linux.cmd=\!rdate -p time-a.nist.gov \
  execute linux.cmd CAPTURING timeinfo
IF TIMEINFO[1,7]=\'rdate'\  then
CRT TIMEINFO<1>
CRT TIMEINFO<2>
CRT " -------------"
CRT " Not a LINUX / UNIX system  exiting "
STOP
END
*
```

```
*
CURR.DATE=OCONV(DATE(),'D4/')
CURR.TIME=OCONV(TIME(),'MTS')
IF PROGRAM.SW='Y' THEN
CRT LINUX.CMD
CRT STR('-',79)
CRT "PICK D3   DATE TIME IS ":CURR.DATE:" ":CURR.TIME
END
*
TLINE=TIMEINFO<1>
IDWA=TLINE[26,3]
IMON=TLINE[30,3]
IDAY=TLINE[34,2]
ITIME=TLINE[37,8]
IYEAR=TLINE[46,4]
*DW---
IF IDWA = "" THEN
CRT TLINE
CRT " TRY AGAIN "
 GOTO 13
END
COMP.DATEI=IMON:" ":IDAY:" ":IYEAR
COMP.DATE=ICONV(COMP.DATEI,'D')
COMP.DATE=OCONV(COMP.DATE,'D4/')
COMP.TIME=ITIME
*test WRITE TIMEINFO ON F.MD,'TESTDWRDATE'
*DW---
*----------------
SET.DATE=''
IF CURR.DATE # COMP.DATE THEN
  SET.DATE=COMP.DATE
END
SET.TIME=''
IF CURR.TIME # COMP.TIME THEN
SET.TIME=COMP.TIME
END
*
IF SET.DATE # "" THEN
 EXECUTE \SET-DATE \:SET.DATE
END
IF SET.TIME # "" THEN
EXECUTE \SET-TIME \:SET.TIME
END
*
IF SET.DATE # "" THEN CRT " SET-DATE to ":SET.DATE
IF SET.TIME # "" THEN CRT " SET-TIME to ":SET.TIME
IF PROGRAM.SW='Y'  THEN
CRT " Press <RTN> ":;INPUT XANS FOR 70 ELSE XANS='X'
END
STOP
*----------------------------------------------------------- end of program
```

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

IS 03/08

CLIF NOTES: ANOTHER DECADE OF MULTIVALUE

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the biggest lesson learned by both individuals and companies was getting back to core values. We stepped back and re-evaluated our priorities. Needs vs. wants. Controlled growth vs. wild power or market-share grabs. Economic realities started to get the C-levels doing something they haven't really done in years — think.

In our MultiValue niche, 2009 didn't just shake up the C-levels. A lot of MultiValue programmers who were hoping to ride out the next eight to ten years without having to learn anything new got a kick in the posterior, too. All of a sudden the same-old-same-old just didn't cut it. You are going to make your MultiValue data accessible to the rest of the systems in the company, or we'll find a system that will. You will find ways to implement new applications with GUI or web-based interfaces, or we'll find a system that will. We need to find out how to Do More With Less while still moving into realms of information processing that help us become more competitive. You can either get on board and drive part of this process, or you can wrap yourself in your MultiValue tatters while sleeping under a bridge somewhere. 2009 was not a good year to be heard saying, "Well, MultiValue can't do that." Wrong answer.

Humans are interesting critters. A lot of times all it takes to figure out a way to do something we haven't done before is to admit the possibility that it can be done. Web services? Maybe we can find a way to do that. Writing applications in Visual Studio to access our MultiValue data? Hm. Saw someone doing that at the last Spectrum Conference. Encrypting data at rest? I saw something in the release notes about that. Let's check it out.

We might be tempted to call 2009 a year of MultiValue innovation. But let's be fair to the various database and tool

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Another Decade of MultiValue

BY CLIFTON OLIVER

January 2010. The beginning of a new year; the beginning of a new decade. Yes, yes. I am fully aware that there was no "zero year," and that the new millennium didn't really start until 2001. But come on folks. We're dealing with cultural conventions here. Just go along with us.

A lot of people like to use the New Year as a trigger to do a review and planning session. Many decide to start a new way of doing things by making New Year resolutions. This is an efficient way for most of us to guarantee that we feel guilty by, oh, no later than January 15th. In an effort to find better and faster ways of getting things done, I only made one resolution this year. I resolved not to make any New Year resolutions. I figured I would do the whole process in one step by making a resolution that broke itself merely by the act of making it. I'm glad that's out of the way.

While not very big on large, sweeping, resolutions, I do find a review of the previous year useful. It's helpful to turn around and look at our tracks, not just to see where we've been, but to make sure that we are still moving in somewhat a forward progress and not just walking in circles. Looking back, 2009 was certainly an "interesting" year. Economically, it started in a near panic as years of horrible decisions on the parts of both borrowers and lenders caught up with them, and the whole shaky structure started to collapse. Financial institutions once thought impervious to change started to disappear. Industries that for decades were used as a measurement of a country's economic health began to collapse. Consumers cut spending. Retailers started thinking about cutting their wrists. And in the midst of all of this, the political sharks went into a feeding frenzy. But guess what?

We survived.

It certainly wasn't pain-free by any stretch of the imagination! If you are one of those who went through a foreclosure or saw their job evaporate, I am truly sorry. But the wide spread, long term devastation predicted (a cynic might say hoped for) by the media and politicians didn't happen. This did not turn out to be a calamity on the scale of the Great Depression. People were not jumping out of upper story windows. There were not hundreds of people standing out in a soup line in freezing weather. None the less, it was pretty darned scary.

But looking back on it, there were some good things that came out of 2009. In my opinion,

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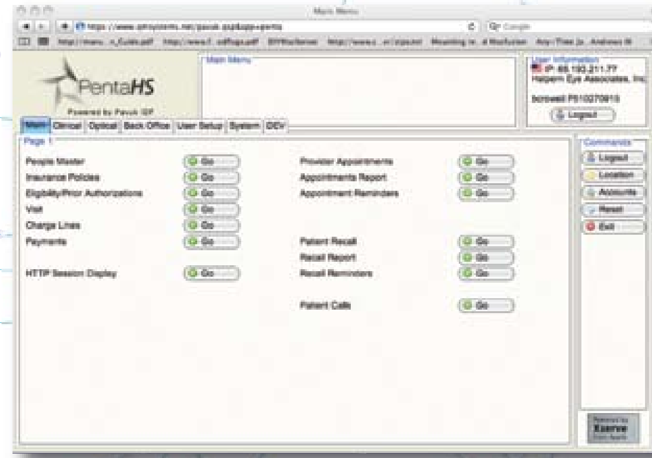

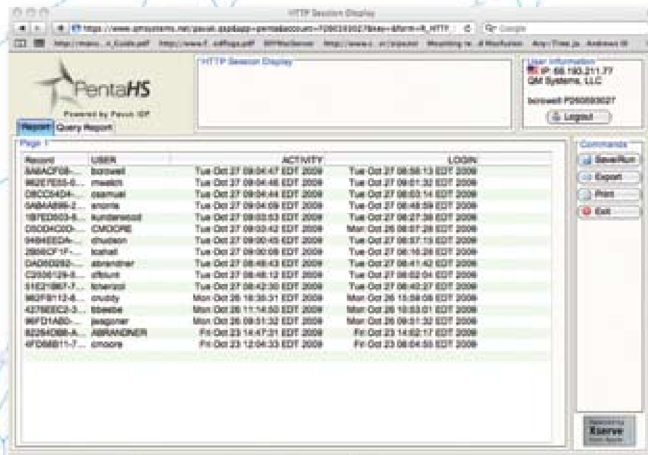

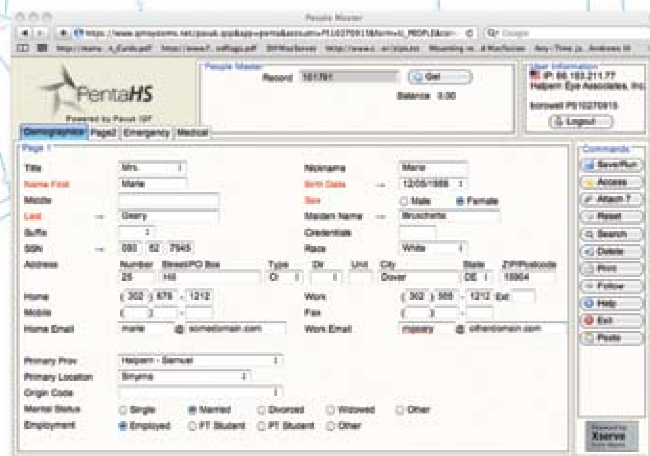

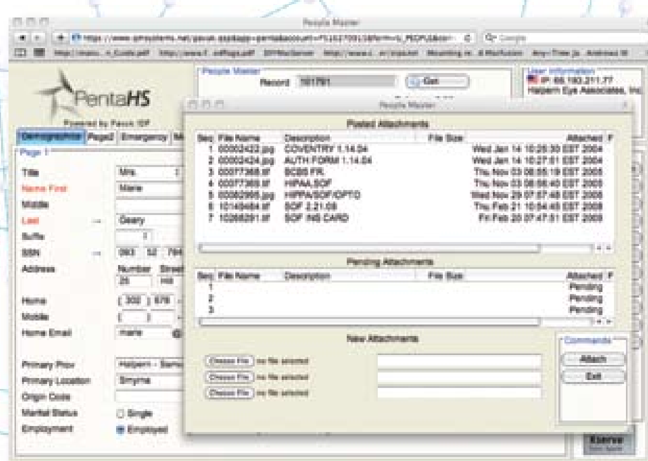

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