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INSIDE: Print Media — Part 3

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6 MultiValue Industry's End of Year Recap

2010 has been a challenging year with most companies and organizations adapting to new economic conditions, revising business strategies, and, as always, striving to do more with less. Even given the difficult environment, many companies have been creating a number of successes. We asked some of our MultiValue partners to tell us about them.

FEATURES | NOVEMBER/DECEMBER 2010

14 JSON For Your MultiValue Web Site Due to the nested nature of our MultiValue data, many developers are now familiar with XML and use it in their applications. However, there is another standard data-interchange format that provides the same nesting and associating abilities that makes the data readily available to other languages. Lighter weight and preferred by many Ajax developers, JavaScript Object Notation can become another valuable tool for use in your MultiValue-based web applications. **BY BRIAN LEACH**

24 Pavuk Internet Development Framework v2.0: Part 2 — Pavuk Elements Pavuk Internet Development Framework was introduced and overviewed in Part 1 of this series. This installment starts delving into the details of application development using the Pavuk IDF by discussing how to define and use one of its main building blocks — Pavuk Elements. **BY BILL CROWELL**

28 Business Tech: Print Media — Part 3 Print media's ever-increasing use of electronic means of publication is making a major impact on the business model of publishing. Lower production and delivery costs, increased channels and fewer barriers to getting published, and the promise of a richer user experience as we move away from purely static print to more interactive forms are all benefits resulting from the shift. It is not, however, without its problems. For example, how can content producers get paid enough to make a living, and how do they avoid getting ripped off? **BY CHARLES BAROUCH**

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From the Inside

BY NATHAN RECTOR

Changes are a coming, if you have not already seen them. As your businesses start increasing IT spending for automation projects, your work load and technical information requirements are increasing.

Here at International Spectrum, we are providing the information you need to help with your technical information requirements. If you haven't noticed yet, the Spectrum web site has been changing over the last year to provide more tools, software, and technical information to you.

There are more technical resources on the site, easier access to the magazine, and you'll now find ways to bookmark commonly referenced materials. We will be including some helpful tools and utilities on the web site as well.

As we increase the information on the web site, you'll also notice changes to the IS 2011 Conference. Yes, we are starting to plan the 2011 Conference, as it is quickly approaching.

The 2011 conference will be a little different from what we have done in the past. Not only are we in Florida this year, with hopefully warmer weather, but we will be changing the format a little bit to provide you with a better experience and more information.

I am working with my speakers to produce more labs and hands-on demonstrations than in the past. This will allow you to practice what you learn, as well as ask more questions outside the time constraints of the initial training session.

I have always been a big fan of the professional networking when attending the conference as a developer, and then as a speaker. I feel this is one of the most productive and valuable times of the conference.

With that in mind, we will be offering many opportunities to talk with your fellow attendees, both at the conference and after the conference.

Since we know that you don't always get a chance to see or talk with everyone when you are at the conference, we are developing a virtual component to the conference as well.

The virtual conference will allow you to review materials that will be presented at the live conference, find out who is attending, and post questions for speakers and vendors to answer when at the Live conference. The Virtual Conference will start a few weeks before and end a few weeks after the Live conference. This will allow you to retrieve materials and talk with those people that you didn't get a chance to talk to or want more information from.

You will be able to see, download, and interact with vendors before and after the conference using the Virtual exhibits.

At the Live Conference, you will be able to see a quick overview of what the vendors have to offer before the exhibit floor opens during our vendor "Speed Dating". With these quick five minute overviews of what each vendor is offering, you can easily pinpoint the people you want to talk with, or which 50 minute product demo sessions you would like to attend.

As we get closer to the end of the year, you will find more and more changes and new features that will help make your job easier. Don't miss out on valuable information, resources, and solutions.

-NATHAN RECTOR
President, International Spectrum
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INTERNATIONAL Spectrum

NOVEMBER/DECEMBER 2010

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Learn more about the MultiValue Symbol and see what MultiValue Technologies and MultiValue Communities exist to help you support and manage your business and systems. To find out more visit

<http://www.intl-spectrum.com>

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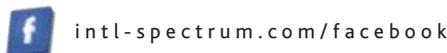
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International Spectrum is eager to print your submissions of up-to-the-minute news and feature stories complementary to the MultiValue marketplace. Black and white or color photographs and diagrams are welcome. Although there is no guarantee a submitted article will be published, every article will be considered. Please send your press releases, articles, and queries to: editor@intl-spectrum.com. International Spectrum retains all reprint rights.

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MultiValue Industry's End of Year Recap

The “End of Year” recap is a special feature to International Spectrum magazine that is done at the end of the year every year. International Spectrum contacted all of its regular advertisers and conference sponsors and asked them to answer three questions: What new features or services did you introduce in 2010; what was the greatest or most exciting thing that happened to your company or product in 2010; and what would you like Spectrum readers to watch for in 2011? Here are the responses we received.

AccuSoft Enterprises

Q: *What new features or services did you introduce in 2010?*

AccuSoft Enterprises released AccuTerm 7 in May 2010. AccuTerm 7 was designed for Windows 7 and has a completely modernized user interface, while retaining compatibility with Windows XP and Vista. GUI programs developed with AccuTerm automatically acquire the modernized look when run using AccuTerm 7. Besides a traditional installation, AccuTerm 7 can be installed on a portable device such as a USB stick and

run on most any Windows machine directly from the stick. A stand-alone installation is also supported for situations where administrator privileges are not available.

Q: *What would you like Spectrum readers to watch for in 2011?*

AccuTerm 7 will be enhanced to include full Unicode / UTF-8 support in 2011. We are also anticipating support for AccuTerm 7 under Wine on Linux and Cross-Over on Mac next year, which will allow AccuTerm to run on those platforms without Windows.

DesignBais

Q: What new features or services did you introduce in 2010?

DesignBais release 6 represents a major enhancement to the DesignBais product suite. It includes.

- Google-style word indexing and selection, providing key-stroke response to field entry.
- Native cross browser support.
- Enhanced eXpress reporting.
- Drill-into reporting.
- Job Scheduler suite.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

There were/are lots of things happening to the DesignBais product suite in 2010. DesignBais development is now faster. The native support for cross-browser enables DesignBais applications to run on all of the major browsers, further extending your application's reach.

The Google-style indexing function will significantly change the way your application interacts with your end-users and will introduce a level of intuitiveness and excellence that will ensure the success of your application. Release 6.0 will be available in December and we believe that it represents another revolutionary leap for MultiValue developers.

In 2010, we have introduced DesignBais to a number of new developers and are extremely excited by the quality of the applications that have been produced. It is great to see MultiValue developers significantly growing their business and we are extremely excited to be part of their continued success.

In 2010, DesignBais also became a Rocket U2 Technology Partner.

Q: What would you like Spectrum readers to watch for in 2011?

2011 will be about improving our education and training programmes. We have spent a great deal of time in 2010 refining our training tools, and in 2011 we will be making these tools more accessible to everyone. There will be more webinar training programmes with greater emphasis on detail. We will not be running any further lengthy webinar training programmes, but will be conducting many short programmes. Each program will be about fifteen minutes long and will cover a single topic. This will make the recording and re-production of the sessions much easier than the previous ninety minute versions. These new webinar programmes will, by the end of the first quarter 2011, be the basis of our online training library.

In 2010, we have seen a number of new DesignBais applications built for mobile and POS devices. With the advent of our commercial-grade cross-browser support, we envisage that a number of our developer partners will be making greater use of devices like the iPad to provide browser-based applications solutions that will reach everybody, anywhere, anytime.

Entrinsik

Q: What new features or services did you introduce in 2010?

Entrinsik's Informer is a web-based operational business intelligence solution enabling over a thousand organizations to access real-time data from multiple sources quickly and easily, extending self-service reporting and analysis capabilities to users who can uncover critical insights in the information they work with every day by querying, reporting, analyzing, delivering, and displaying data in any way they choose.

In 2010, Entrinsik announced the latest release of their Informer — Informer 4.2. Informer's new plug-in

architecture allows developers to amend and extend core Informer functionality for seamless integration into existing organizational environments. This latest release of Informer represents a giant leap forward for the software.

With Informer 4.2, Entrinsik is now able to offer Informer Partners and end user administrators the ability to do things like provide end user authentication and single sign-on within Informer, rebrand the user interface, and even develop known quality reports and mappings to bundle with the installation package to speed roll-out. With examples and documentation provided with the new release, Partners and Informer administrators can now create a highly integrated reporting environment customized to meet specific organizational needs.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

Entrinsik held their first Informer User Conference (ICON2010) on October 11-12th, 2010. The conference was attended by Informer administrators, end users and Partners and included breakout sessions with members of the Informer product development team, panel discussions on best practices and methodologies, one-on-one product training and networking with Informer users from other organizations. Conference attendees had the exclusive opportunity to enhance their Informer knowledge and learn about all of the exciting developments that Entrinsik has planned for Informer. Based on feedback received from attendees, the conference was a huge success:

"For your first conference, I felt it was superior to some I've attended for years!! Great job! Presentations were great — end users could understand

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MULTIVALUE INDUSTRY'S END OF YEAR RECAP

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them, no matter their level of expertise.”

“Great staff — very intelligent, knowledgeable, yet very personable... most grateful for the resources given to us.”

“It was refreshing to attend a conference where the participants genuinely like the company and enjoy using the product. Made for a very pleasant conference.”

Entrisik collected lots of great ideas from the almost 200 attendees on how to make the conference even better, and have already begun planning the next one.

Q: What would you like Spectrum readers to watch for in 2011?

With the release of 4.2, Informer now includes all the base functions of the 3.0

series, the plug-in architecture to allow our VAR partners to fully incorporate Informer into their application, and the infrastructure to facilitate continual expansion of supported platforms. Several NEW R&D activities have been fired up. Projects underway or being planned are:

- Support for the Raining Data D3 database.
- Dash board presentation.
- Integration with Share Point.
- Expansion of graphical functions.

InterSystems

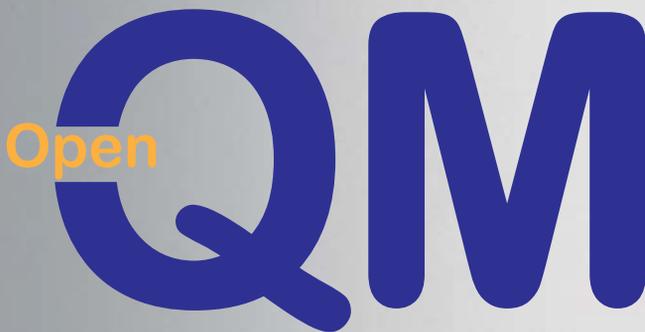
Q: What new features or services did you introduce in 2010?

InterSystems Corporation launched CACHÉ 2010 in September. Of special interest in this new release is the introduction of CACHÉ Database Mirroring innovative technology that takes high-availability solutions to a new level.

Database Mirroring provides a reliable, robust automated solution for both planned and unplanned downtime at a cost that will have a very positive impact on the IT bottom line.

CACHÉ Database Mirroring provides automatic failover between any two CACHÉ-based systems, without the need for specialized, expensive storage and networking hardware and software. In addition to providing high availability at lower cost, key benefits include:

- Flexibility for Planned Downtimes Configuration changes or operating system upgrades affecting one CACHÉ-based application can be executed with minimal impact on overall application availability or performance against Service Level Agreements.
- Minimized Risk CACHÉ Database Mirroring utilizes an easy-to-implementation model that removes complex-

The logo features the letters 'Q' and 'M' in a large, bold, blue font. The letter 'Q' is partially overlaid by the word 'Open' in a smaller, orange font.

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ity from the configuration equation. And, by using logical data replication, mirroring reduces risks such as out-of-order updates and carry-forward corruption that are possible in the physical replication technologies used by other systems.

- Business Continuity Support Mirrored databases can be housed in separate data centers, so continuity of key business operations is ensured in the event of a disaster.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

During 2010 many of our application partners deployed their MultiValue applications to their customer base with expanded functionality.

- Over 80 end user sites deployed with a newly designed browser based front end preserving legacy business logic.

- Ensemble Work Flow enhanced an existing application stream lining claims processing increasing revenue realization. This also allows the application partner to take on new business supported with existing staff.

Q: What would you like Spectrum readers to watch for in 2011?

2011 will see several application partners deploying their MultiValue applications on Caché. These applications offer solutions for retail, medical and banking. Several application partners are planning to incorporate DeepSee (our embedded business intelligence product) and Ensemble (our integration and work flow platform) into their product offerings.

Key Ally

Q: What new features or services did you introduce in 2010?

2010 was all about abandoning Windows-only approaches by using web front ends for even trivial internal applications.

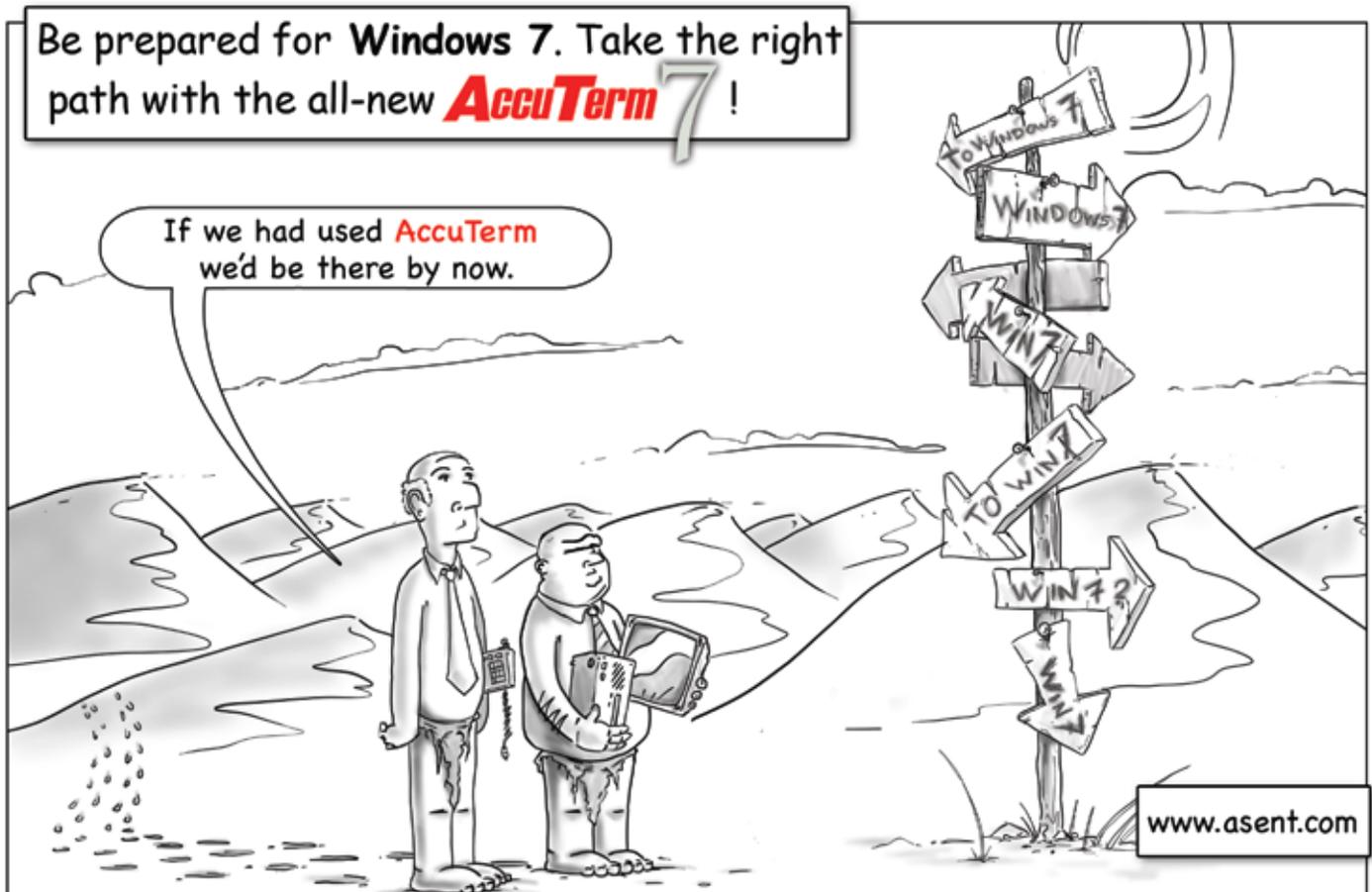
Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

I got to spend time extending software for a client who was using the application I worked on in my very first job. Revisiting that code has helped me gain perspective on everything I've learned since my first job.

Q: What would you like Spectrum readers to watch for in 2011?

Spectrum readers need to watch for the real Web revolution. We are reaching the tipping point where the amount of code needed to get a browser perform is too great and the browsers themselves are bloating up. I

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expect that 2011 will see some radical new browser design, one that makes browsers more like terminals in terms of persistence and screen management without losing everything that makes the browser graphically superior.

LadyBridge

Q: What new features or services did you introduce in 2010?

Much of this year has been devoted to security and resilience. We introduced a package of enhancements to provide greater control over system security, including the option to impose tighter restrictions on use of QMNet to access data on remote servers and restrictions on which accounts a user may access.

The first element of the resilience package, data replication, was launched in

October 2010. QM's data replication system is very flexible, allowing cascading of updates through layers of servers and symmetrical replication where updates can be applied in either direction. The latter feature is very powerful but requires some care in implementation.

The second element of the resilience package, journaling, is scheduled to be released by the end of the year. This includes both roll forward and roll backward recovery.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

At the 2010 Spectrum Conference, we displayed a sign indicating that we had achieved over 100 new commercial QM installations in the last 100 days. At the time of writing (mid-October), we are still ahead of the one installation per day target and expect this to continue to the end of the year. We think

that this verifies that QM is now a well established player in the MultiValue market.

Strictly not 2010 but right in the last few days of 2009, Nashville based Information Capital, suppliers of local government software solutions, ported a toolkit comprising over 100,000 programs to QM. This toolkit forms the basis for applications developed by their six subsidiary companies.

Q: What would you like Spectrum readers to watch for in 2011?

QM is well established in countries with languages that can be represented in an 8-bit character set. We have begun planning for support of multi-byte character sets to help take QM into the Far East and other areas that require extended character sets.



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MITS

Q: *What new features or services did you introduce in 2010?*

We released MITS Report version 3.0, which includes an array of new features designed to put more power in the hands of the users. These features will help free up busy IT resources while ensuring data security and maintaining overall system performance.

Q: *What was the greatest or most exciting thing that happened to your company or product in 2010?*

As with any major technology advancement, the true value of the new capabilities in MITS Report 3.0 become clearly evident through everyday use. The new Calculated Columns feature in version 3.0 provides significantly enhanced flexibility by allowing users to create new columns based on the values in existing columns and incorporate them into their reports. The

Date Range Columns feature enables comparative and trend-focused reporting by accumulating numeric columns by month, quarter, or year. We have also added a new Ranking enhancement which helps identify sweet spots as well as areas that need attention.

These new features add even more flexibility to the already powerful MITS Report tool set, making it even easier to perform rapid, detailed analysis of operational data.

Q: *What would you like Spectrum readers to watch for in 2011?*

Keep your eyes open for a new version of MITS Discover, which will include new features designed to make your life easier.

Major Improvements to the Build Scheduler: We are in the process of rewriting of our MITS Discover Hypercube Build Scheduler from the ground up. The new scheduler will provide

more flexibility in scheduling jobs and it will do a better job of providing status both during and after the completion of the process(es).

User Interface Improvements: Many of the older-styled interface pages are being rewritten to add functionality and make them easier to navigate.

Dashboard Improvements: Watch for improvements in the way users create and launch their MITS dashboards, including the ability to export a MITS dashboard to an Adobe PDF file.

NorthgateArinso

Q: *What new features or services did you introduce in 2010?*

NorthgateArinso continues to offer long term contracts and flexible license models to its increasing base of new customers. 2010 saw an impressive re-

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ception to NorthgateArinso's modernization strategy, where we take legacy green screen applications and migrate them to GUI and web environments. This not only keeps MultiValue in these businesses but demonstrates how MultiValue can integrate with leading edge technologies. NorthgateArinso also showed Reality integration with Google APIs and other connectivity through various webinars as well as presentations to Pick User Groups.

At the International Spectrum 2010 show, NorthgateArinso demonstrated the PROIV Aurora Framework and dashboard. This product not only allows you to deploy your application in a customizable browser-based desktop, but to also deploy your applications in a mashup environment, and enables you to pull information and data feeds from multiple sources.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

As a business, NorthgateArinso increased its commitment to the US through its acquisition of the HR BPO division of Convergys. While not directly related to MultiValue, the acquisition shows the intent of NorthgateArinso to increase its market presence and provides a bigger backing to the Reality team. Through the increased footprint, NorthgateArinso can now offer additional HR and Payroll services to MultiValue customers. Using the PROIV Aurora development framework, MultiValue applications can now reside alongside HR solutions in the same browser based desktops. NorthgateArinso continues its commitment to the PICK community by attending User Groups and sponsorship of the 2010 International Spectrum show.



Q: What would you like Spectrum readers to watch for in 2011?

PICK Applications running on the web via the PROIV Aurora Development Framework, Cloud computing, Software as a Service (SaaS) and continued growth of its customer base are just to name a few. Watch for Reality version 15 which will include feedback from our ever growing customer base, market demands and future thinking.

Pavuk

Q: What new features or services did you introduce in 2010?

In 2010, we introduced major new features. The highlights being support for Linux servers and a completely rewritten Javascript front-end using the ExtJS library. The user interface is cleaner, much faster and has a broader range of browser support. Our services expanded to include a free "sandbox" account where prospective customers can practice developing applications and running them before making a purchasing decision. Online, personalized training has also been expanded.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

While the product features and our expansion of services are exciting, what is really exciting is the interest coming from outside of the MV community. A number demos have been given and discussions underway with firms that want to have projects done in timeframes that no other technology can meet.

Q: What would you like Spectrum readers to watch for in 2011?

International markets are important, and we are working on full Unicode support in addition to other localization measures for 2011. Latin-extended and Cyrillic alphabets should be supported by year's end. We continue to expand the Pavuk Elements with more

international currency support as well as Geographic Information Systems elements to continue to broaden the types of applications that can be built inside of PavukIDF. We will also begin web-based training series.

Rasmussen Software

Rasmussen Software spent 2010, its 31st year in business, finishing up a major release of its Print Wizard product. Version 4 adds PDF manipulation, multitouch, document viewing, and easy repositioning of text on form images to an already powerful product. MV users are increasingly employing Print Wizard to improve the appearance of their printouts, and even eliminating them entirely by emailing PDFs of invoices to customers. Others are retiring their dot matrix printers, and now using laser printers and plain paper for multipart form sets.

Revelation

Q: What new features or services did you introduce in 2010?

In July 2010 Revelation Software released OpenInsight Development Suite 9.2 which provides the following new components:

OpenInsight for Web (O4W) — A web 2.0 development toolkit that empowers OpenInsight developers to rapidly create browser based forms, reports, menus, dashboards and programs.

SQL Connector — With this new connector, SQL tables are now seen as native tables to all components of OpenInsight including forms, reports, popups, stored procedures and O4W.

OpenInsight for D3 — This connector will allow OpenInsight to be a front end application development tool with the D3 database from TigerLogic Corporation.

Single Sign-On (SSO) — By configuring SSO, OpenInsight users can be authenticated via traditional OpenInsight methods, via Windows security, or via a combination of both.



Bitmap Indexes — This type of index is used where the number of indexed values are relatively small; e.g. Sex (M/F), Active (Yes/No), etc. Bitmap Indexes are extremely fast, and are much faster than our existing Btree indexes.

OECGI3 — This is the OpenEngine Common Gateway Interface version 3 which supports Failover and Load Balancing modes. These modes make OECGI3 a more robust connection object and allows for extra capacity and/or redundancy to be added to a web application.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

Without question it was the release of OpenInsight for Web (O4W) as part of the OpenInsight Development Suite and the quick adoption of this toolset by our developers and user base. In fact the product was so well received that several of our beta testers deployed O4W applications prior to our official release.

Q: What would you like Spectrum readers to watch for in 2011?

Ongoing development is always the norm at Revelation Software, and 2011 will once again be a very busy year. Our next major release of OpenInsight will include Data Encryption at Rest as part of our database offering. We are also looking at database development tools for social media environments and we will cap off the year with our User's Conference in October 2011 in Las Vegas, Nevada.

SJ+

Q: What new features or services did you introduce in 2010?

PRC provides change control, first and foremost. It does this according to guidelines and frameworks that come from various industries and regulatory agencies — and it does it with the same agility and common sense to which

you and your users have become accustomed in the U2/MultiValue world. Each year the guidance changes and PRC always evolves with it. The technology of accessing and changing our software and our databases changes each year, too. In 2010 PRC was adapted to more outside tools and editors including XAML with .NET through SB/XA, the Basic Developer Toolkit and other web-based and rich-client user interfaces.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

It is always exciting to keep PRC up to date with the latest initiatives in IT Governance and all the fun new tools that people are using to develop software and maintain their databas! This year we updated our look — the web site is new and takes advantage of newer web technology to stay abreast of happenings in the industry. The newslet-

ter became a blog, and we have expanded our presence in social media via twitter and some LinkedIn groups.

Q: What would you like Spectrum readers to watch for in 2011?

PRC will continue to focus on the U2/MultiValue development environment —but will become more and more agile in adapting to various up-and-coming interface methods and development tools.

Synergetic Data Systems, Inc

Q: What new features or services did you introduce in 2010?

SDSI released a major new version of the UnForm Document Management Solution — v8.0. This release offers major enhancements to the base UnForm document production and document

Continues on page 30

The Post-Relational Database Reference Project: UniVerse™
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JSON For Your MultiValue Web Site

BY BRIAN LEACH

JSON is an exciting technology, not because of what it is, but simply because of what can be achieved using it. JSON is an acronym for JavaScript Object Notation, which neatly encapsulates what it is all about — a serialization format for JavaScript objects. That may not sound too exciting in itself, until you discover how it can enhance your MultiValue backed web applications.

What is JSON?

JSON is characteristically mentioned in the same breath as XML. Both are standardized formats for encoding and representing complex information. Both are syntactically simple and highly legible. Both are easy to parse and to generate. And both are valuable not in themselves, but only in as far as they support rich and powerful toolsets. XML is, after all, nothing more than text organized into a set of nested elements according to simple rules. Its usefulness is in the degree to which it has been adopted by tools as diverse as the Microsoft Office document formats and web services and the existence of layered technologies for transforming and validating content. The same can be said of JSON.

JSON is a serialization format for representing objects. Just like XML, this means that it must support nested hierarchies and that the encoding is based on holding values for the various elements or attributes of an object. In the case of XML, this is done through tags, but nothing clearly defines when one should use an element and where one should use an attribute. In the case of JSON the format is even simpler: JSON serializes to a simple series of key and value pairings:

```
{ accountCode='A123', surname='  
→ smith', forename='jane' }
```

Using JSON

So far, nothing to write home about. What matters here is not the medium, but the message. On the server side, JSON is extremely simple to parse and to generate from MultiValue Basic. On the client side, JSON libraries exist (and there are plenty of these) to convert this notation directly into dynamic JavaScript objects, enabling developers to write compact object representations in their code and, more important, to pass around these objects ready to be used in their web pages.

As an example, take a look at the free Dojo Toolkit (www.dojotoolkit.org, also hosted on Google). This is one of a number of free libraries offering methods for performing asynchronous http calls where the results are expected in JSON format. Here the `dojo.xhrPost` method is used to call an `mvScript` page that will return UniVerse data in JSON format and specifying the outline of two functions to call, one on success and one on failure (fig. 1).

This example contains two pieces of good news: first, by using JSON you can generate JavaScript objects from server code ready to be consumed by your web pages; and second, the toolkit makes the call using Ajax, avoiding the full page refresh that bedevilled early web site development. Ajax, like all HTTP calls, can return data in any format and so long as your middleware does not automatically turn your content into HTML or an equivalent, then it is easy enough to present your data according to JSON syntax rules. Once the results have been automatically parsed to create your JavaScript object(s), the first advantage of JSON is the ease with

which the elements of such an object can be addressed (fig. 2).

JSON Encoding

The rules for encoding JSON are simple. Elements are represented as a series of comma delimited key and value pairs, with the value being enclosed in quotation marks (even for numeric values). To permit the full range of content, JSON uses a small handful of escape sequences that are similar to those used in C-based languages for encoding delimiters and special values that may appear within the text (fig. 3)

Continues on page 22

```
function fetchRequest(id){
    dojo.xhrPost(
        {url : "http://localhost/tasks2/ttReqJSON.wsp",
        content: {
            "id" : id
        },
        handleAs: "json",
        load: function(data, args){
            request = data;
            loadRequest(request);
        },
        error: function(error, args){
            alert(error);
        }
    });
}
```

Fig. 1 - A JSON call through the free DoJo Toolkit.

```
// update the content of the form with the request data
function loadRequest(request){
    if(request.message != ''){
        alert(request.message);
    } else {
        dojo.byId("idField").value = request.id;
        dojo.byId("summaryField").value = request.summary;
        dojo.byId("statusField").value = request.state;
        dojo.byId("categoryField").value = request.category;
        ...
    }
}
```

Fig. 2 - Accessing the object properties.

| | |
|--------------------------|-------|
| \ | \\ |
| ' | \' |
| / | \/ |
| Line Feed(Char 10) | \n |
| Carriage Return(Char 13) | \r |
| Form Feed(Char 12) | \f |
| Tab(Char 9) | \t |
| Hexadecimal Character | \xNN? |

Fig. 3

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NEWSMAKERS



Entrinsik Joins NetVU as its Newest Gold Partner – Informer Software Helps Agencies Boost Productivity, Enhance Service, Monitor Operating Costs

Entrinsik Inc. (www.entrinsik.com), a leading provider of innovative web-based operational reporting and analysis solutions, recently announced a partnership with NetVU to offer its award-winning Informer Web Reporting software to insurance agencies across the country. For years, Entrinsik has participated in insurance agency management system conferences and has been recognized as a valued supplier/vendor to Vertafore agencies.

Informer is an operational reporting and analysis solution enabling insurance agencies across the country to transform real-time agency data from multiple sources into actionable intelligence. Informer extends self-service reporting and analysis capabilities to front-line users who can uncover critical insights in the information they

work with every day by querying, reporting, analyzing, delivering, and displaying real-time agency data in any way they choose.

Informer is a lightweight web-based application that takes minutes to install and is designed to work seamlessly with Vertafore's management software. Informer implementation is quick and easy, with users up and running in hours creating dynamic financial reports (e.g. month to month, year to date) and performing ad hoc analysis of real-time data – analyzing data by client, by group code, by producer, by division, by policy type and much more.

Todd Doster, Sagitta Administrator at McQueary Henry Bowles Troy, LLP had this to say about Informer – "Informer has greatly reduced the load on ad hoc and recurring report requests and greatly increased the efficiency and delivery of important and timely information to our Producers and Service staff."

According to NetVU chairman, Carl Schlotman, "Being able to get our hands on the data we need to run our businesses is mission critical. Entrinsik offers a valuable service which enables NetVU members to keep their fingers on the pulse of their business. We are thrilled to have them join us as our newest Gold Corporate Partners."

"Having worked with large and small agencies such as USAA, BB&T and MHBT, we know agency personnel make hundreds of decisions each day," says Doug Leupen, President at Entrinsik.

"Our goal by partnering with NetVU is to work closely with agents to demonstrate how they can quickly and easily perform data analyses on the fly in faster more powerful ways than ever to make the most informed decisions possible based on all available data regardless of where it resides."

About Entrinsik, Inc.

With tens of thousands of users across various industries, Entrinsik's Informer Web Reporting software delivers true real-time access to multiple data sources simply and easily using a built-in web-based query engine. Informer leverages a powerful metadata model that creates consistency among disparate data descriptions and structures to provide a single point of secured information access for ad hoc reporting, report customization and analysis.

Forget about data silo constraints. Informer extends self-service operational reporting and analysis capabilities to both technical and business users who can now quickly and easily perform their own analyses on the fly in faster more powerful ways than ever before. For an Informer demonstration or information about a free trial, call us today at 888-703-0016 or email us at sales@entrinsik.com. ■



Ashwood Computer Successfully Converts Envirochem, Inc To Reality 14.1!

Envirochem, Inc. had considered a conversion from their aging, yet reliable "Spirit" platform to a more modern system for several years. Their McDonnell Douglas M6000 ("Spirit") hardware was showing its 20+ years of age, becoming increasingly more difficult and expensive to locate and acquire replacement parts, as well as locating qualified service personnel to effect repairs.

The "Spirit" system was "incredibly" slow when compared with some of their newer Windows Intel systems. Their legacy, text-based, green-screen applications were also showing their age; employees were frustrated by the overall performance of the legacy system, the inability to network office resources, and the lack of an attractive interface. When an end-user needed to drill into existing data, multiple database sessions were required; this effort slowed their response to customer or supplier inquiries.

Sid Fleisher, vice president and systems manager at Envirochem, said, "The old system had

become the focus of our disaster plan because recovery was something we had big worries about. Envirochem president Debbie Gildersleeve established the plan to migrate off of the legacy system and it was her continued drive and persistence that finally made that plan a "Reality."

When looking for a new system, the focus was placed on:

1. State of the art hardware with plenty of storage
2. Must have the ability to network attach copiers and printers to system
3. Must blend the Reality database, Microsoft applications and offer GUI
4. Minimal end-user retraining

Ashwood worked closely with the Envirochem team and their consultant, Mark Johnson, as multiple database and conversion options were considered. The finalists for further analysis and review were Reality, Universe, and D3. After thorough consideration of Envirochem legacy applications and the conversion effort required, the upgrade to the latest release of Reality, version 14.1, was found to provide the most efficient, cost effective path. Envirochem, Inc. ultimately chose Ashwood Computer, Inc. as their conversion partner!

Ashwood proposed their legacy McDonnell Douglas M6000 system be replaced with an IBM xSeries 3500 with a 3 GHz, Quad-Core processor, 9 GB of memory, mirrored disks and Microsoft Small Business Server 2008.

Mark Johnson experienced several challenges when converting the Envirochem applications from the Reality 2.3 environment to the modern Reality 14.1 environment. Having not progressed

through the Reality hardware and database upgrades in-between v2.3 and v14.1, there were changes in PROC functionality, security, spooler structure, system file locations, and other considerations to be accommodated. With Ashwood's assistance, conversion issues were anticipated; all applications were made ready, PROC's were adjusted, and the conversion was completed. Some of the challenges to deploying the new hardware were the need to preserve serial printer port connectivity to the warehouse and to migrate data to the new server without an attached tape drive.

Regarding his choice of Ashwood Computer, Sid Fleisher commented, "We really went on reputation and trust. Once we decided that we wanted to do business with Ashwood, we let them tell us what we needed. I wouldn't want to tell my cardiologist how to operate on my heart. Our Ashwood rep was a unique combination of competence and patience. He was thrown many curve balls in setting up the system, but he used his professionalism and surmounted them. Our window to install wasn't fixed and although the curves took time, it didn't add to our expense and when we did our conversion, we didn't

have a single 'burp'. I have done many conversions and this was by far my best one."

About Envirochem

Envirochem, Inc. began manufacturing soaps and detergents in Brooklyn, NY in 1975. Today, from their newly equipped, 100,000 square foot, modern facility in South River, NJ, Envirochem, Inc. is an ISO 9001:2008 world-class manufacturer, producing a complete line of ware washing, laundry, housekeeping and industrial products for cleaning and sanitation needs. For more information:

Envirochem, Inc.,
425 Whitehead Ave.
South River, NJ, 08882
Phone: (732) 238-6700
Fax: (732) 238-5590
www.envirochem-usa.com

About Mark Johnson

An independent consultant specializing in supporting and enhancing legacy MultiValue systems, Mark facilitates the interface of MV databases with external forms and formats, enabling a continued, long-term return on investment in MV.

For more information, call 908-601-4052 or email: majprogramming@gmail.com

About Ashwood Computer, Inc

Ashwood Computer, Inc., is an ISO 9001:2008 MultiValue VAR organization specializing in working with users of MultiValue databases on conversions, migrations, upgrades and .NET development projects. If it has to do with your MV systems, Ashwood can help! For more information, call (513) 563-2800, email: dougo@ashwoodcomputer.com or visit www.ashwoodcomputer.com. ■



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New Products



TigerLogic Announces Major Releases of its Next-Generation Database Management Systems

TigerLogic Corporation (Nasdaq: TIGR) today announced the general availability of its next-generation multidimensional database management systems – D3 v9.0 and mvBase v3.0 – and a new development tool – the TigerLogic Dashboard – to create visual displays of multi-value data via widgets.

D3 v9.0 and mvBase v3.0 offer innovative new functionality to the long-proven product line of Pick-based database and development tools for the creation of enterprise application solutions.

“The new interfaces we’ve created for the Java and .NET development environments enable D3 and mvBase developers to expose their existing software applications to the latest technologies for Web and Microsoft application development,” said John Bramley, Vice President of Product Development and Operations at TigerLogic. “The company is energized about what we’re developing and we are focused on helping our customers build value-added busi-

ness solutions.”

D3 v9.0 and mvBase v3.0 – Key Features and Enhancements

- Enhanced APIs to ease integration for both Java and .NET development environments
- Ability for developers to expose and process multi-value data via open standards, including XML for multivalued data and Web Services caching utilizing TigerLogic’s XML Data Management Server (TL XDMS)
- Full failover/recovery solution for the D3 v9.0 Windows platform
- Numerous customer requested enhancements

“We are very excited about the release of D3 v9.0. The new features built into version 9.0 are allowing our developers to create the next-generation Dockmaster experience with .NET, which makes version 9.0 the platform of choice for future releases,” stated Cam Collins, President and CEO of Exuma Technologies, Inc.

TigerLogic Dashboard – Real-time Business Intelligence Tool

The new TigerLogic Dashboard for D3 AIX, D3 Linux and D3 Windows database management systems is a development tool to produce graphical reports of real-time business intelligence specifically for multivalued databases via dashboard widgets. The TigerLogic Dashboard enables multivalued developers to select and present critical

business data, that’s distributed throughout the multivalued database environment, and present it in intuitive and web-based graphical interfaces.

“The new TigerLogic Dashboard is an excellent application for the D3 environment that allows our customers to easily create impressive reports from finance to sales to inventory analysis,” said Janet Cioffi-Kennedy, Vice President of Sales at TigerLogic. “Our customer feedback has already been very positive and we expect to see a new host of applications utilizing the TigerLogic Dashboard solution coming to market.”

The features and functionality of the TigerLogic Dashboard allow D3 developers to easily create new customized dashboard widgets from the large number of sample widgets and templates provided, including multiple layouts and themes, and RSS feeds that can be consumed by any local RSS feed reader.

Product Availability

D3 v9.0 is supported on AIX, Linux and Windows operating systems and mvBase v3.0 is supported on Windows XP, Vista, 7, and Server 2003 and 2008 operating systems.

The TigerLogic Dashboard is available in three deployment editions: Standard, Professional and Enterprise. To learn more about the TigerLogic Dashboard or download an evaluation copy, go to: www.tigerlogic.com/tigerlogic/pick/dashboard/index.jsp.

For more information about all of TigerLogic’s products and

services, visit: www.tigerlogic.com or contact a TigerLogic sales representative at sales@tigerlogic.com.

About TigerLogic Corporation

TigerLogic Corporation (Nasdaq: TIGR) has been providing reliable data management and rapid application deployment solutions for ISVs and developers of database applications for more than three decades. More information about TigerLogic and its products can be found at www.tigerlogic.com. ■



Precision Solutions is pleased to announce the availability of Red Leaf for Prelude

Precision Solutions, a leader in MultiValue solutions and education, is pleased to announce the availability of Red Leaf for Prelude, a web interface for users of the Prelude Advanced Distribution System. Using Red Leaf, Prelude customers can easily create an online store for current and potential customers to search for and get details about their products, purchase products or request a quote for products, as well as view historical orders, quotes, and invoices

all from within a powerful Web 2.0 framework.

Using industry standard technologies and protocols, Red Leaf uses a web-based API connect to select application functionality and then uses a highly customizable user interface to render application information to site visitors. This allows Red Leaf to be flexible to the changing needs of an organization and nearly infinitely expandable for the future.

For more information about Red Leaf, contact Precision Solutions at 303-651-7050 or on the web at www.precisionline.com.

About Precision Solutions

Precision Solutions (Longmont, CO) helps customers unravel complex business problems with quality and innovative solutions and exceptional customer service. With a customer centered, results oriented approach to software development, we're more than just technology geeks; we're real people with a passion to deliver solutions that make a real difference. ■



Datatel Announces Updated Interface to Boost Clients' User Experience

Datatel continues to deliver on its pledge to continuously improve its clients' user experience by introducing today an updated user interface for Datatel Colleague, the com-

pany's enterprise resource planning (ERP) administrative system for higher education institutions. The updated interface, Colleague User Interface 4.2, dramatically improves the performance of data entry to support the business processes at colleges and universities that help them to ensure student success. The new interface is a component of Datatel's complete user experience offerings that include Datatel Mobile (MOX) and Datatel Portal.

"This is a superb example of how Datatel continues to add value to our clients' investment in Datatel Colleague," said Kyle Loudermilk, vice president of product management at Datatel. "When we first released UI 4.0 in 2009, we indicated that we would continue our rapid development and delivery of innovation to our customers. Leveraging state-of-the-art technology, this release demonstrates our commitment to provide our customers with an easier to use, lower-cost solution than is available from any other technology provider."

Datatel UI 4.2 incorporates Microsoft Silverlight, providing a consistent look and feel with richer graphics across the enterprise applications. This consistency yields improved workflow and greater end-user self service and reduces training costs through intuitive design. Other enhancements include one-step import of Colleague data into Microsoft Excel, dynamic window sizing, direct form printing without the need of a third-party program, and increased productivity as clients use familiar tools to perform data entry and look-up.

"It's important for our clients to adopt the new UI 4.2 interface so that they may avail them-

selves of the exciting enhancements we have planned for Datatel Colleague," said Loudermilk. "Staying current with the most recent release makes sense for our clients because they then will get the most value from their Datatel technology investment. This upgrade to UI 4.2 is free to all customers."

Professional services are available from Datatel to assist end users with transitioning to the new Silverlight-based interface and to support client IT staff members with installation. Datatel is a Microsoft Gold Certified Partner with competencies in ISV, Server Platform, Mid Market Solution Provider, and Portals and Collaboration.

About Datatel, Inc.

Datatel is a provider of innovative 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 on higher education since 1979. For more information, visit www.datatel.com. ■



InterSystems Launches Major New Release of CACHÉ High-Performance Object Database

InterSystems Corporation today announced a major new release of its InterSystems CACHÉ high-

performance object database. CACHÉ release 2010 targets the growing demand by CIOs for economical high availability and the call from Java developers for high-volume, high-performance processing combined with persistent storage for event processing systems.

"IT executives are looking for an economical solution that will provide high availability for critical systems throughout the enterprise," said Robert Nagle, InterSystems Vice President of Software Development. "And, in organizations with high-volume, Java-based, complex event processing (CEP) environments, CIOs are seeking out database solutions that combine persistent storage with extremely high performance. With this new release, CACHÉ successfully addresses both of these scenarios."

CACHÉ Database Mirroring – High Availability at Half the Cost

CIOs in large organizations are painfully aware of the substantial investments in infrastructure, deployment, configuration, software licensing, and planning required for traditional high availability solutions. With CACHÉ 2010, InterSystems introduces CACHÉ Database Mirroring – innovative, advanced technology that takes high-availability solutions to a new level. CACHÉ Database Mirroring provides a reliable, robust automated solution for both planned and unplanned downtime at a cost that will have a very positive impact on the IT bottom line. "Early users of our mirroring capabilities project cost savings of 30-50 percent, based on production configurations," said Nagle. "The cost-effectiveness and high availability that CACHÉ Database Mirroring

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New Products

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provides will prove especially attractive in certain industry sectors. Healthcare providers, for example, who are focused on the twin objectives of reducing costs while also improving care delivery, are likely to view this new capability as a major step forward in healthcare IT."

CACHÉ Database Mirroring provides automatic failover between any two CACHÉ-based systems, without the need for specialized (and expensive) storage and networking hardware and software. In addition to providing high availability at a dramatically lower cost, key benefits include:

- Flexibility for Planned Downtimes – Configuration changes or operating system upgrades affecting one CACHÉ-based application, for example, can be executed with minimal impact on overall application availability or performance against Service Level Agreements.
- Minimized Risk – In contrast to traditional replication solutions with the inherent complexity of their configuration requirements, CACHÉ Database Mirroring utilizes a simple, easy-to-implement model. This approach removes complexity from the configuration equation. And, by using logical data replication, mirroring reduces risks such as out-of-order updates and carry-forward corruption that are possible in the physical replication technologies used by other systems.
- Business Continuity Support – Mirrored databases can be housed in separate data

centers, so continuity of key business operations is ensured in the event of a disaster.

Early users of Database Mirroring are rapidly moving forward to implement the capability on a production basis. "Our tolerance of any system downtime has nearly reached the point where even planned downtime is unacceptable," said Rob Hurst, Principal System Administrator at CareGroup Healthcare System, a Boston-based integrated delivery network. "InterSystems truly understands the challenges of availability on a 24x365 basis. After field testing that has been 100 percent successful," he continued, "we plan to implement Database Mirroring in 1Q11...it's a total high-availability solution that is definitely cost-effective when compared to traditional approaches."

CACHÉ eXTreme for Java – Extremely High Performance Plus Data Persistence

CACHÉ eXTreme for Java provides a revolutionary solution to the dilemma that Java developers confront when building systems where processing speed is of critical importance, data changes very rapidly, and data persistence is an absolute requirement. For details see (intlspectrum.com/s1037).

Pricing and Availability

CACHÉ 2010 is available now on Windows, Linux, Mac, UNIX and OpenVMS platforms. Pricing ranges from \$220 to \$1,380 per user, depending on configuration.

About InterSystems

InterSystems Corporation is a global software technology leader with headquarters in Cambridge, Massachusetts, and

offices in 25 countries. InterSystems provides advanced software technologies for breakthrough applications. For more information, visit InterSystems.com. ■



New Release of MITS Report Delivers Powerful New Features, Sets Stage for More

MITS, the leading provider of reporting and business intelligence solutions, today announced a major new release of its popular operational reporting solution, MITS Report.

MITS Report 3.0 includes an array of new features designed to safely put more power in the hands of end users and free up busy IT resources – while ensuring both data security and overall system performance.

Calculated columns mean more answers – for more end users.

With version 3.0, MITS Report now lets users create and incorporate new data not identified when the reporting environment is initially configured.

"It's not unusual for organizations to discover new information needs after MITS Report is in use for a while," says Gary Owen, MITS Vice President of Development. "Often, once users get better visibility of their company's data using MITS Report, they start asking more

questions. The new Calculated Column feature addresses this issue."

The new feature lets users create a new column from other data already included in a report, much as users of spreadsheet software can specify a formula for deriving a value that's not included elsewhere. Calculated columns like this one are stored in MITS Report along with all the other reporting data, and are available to other end users for their own reporting needs.

Particularly appealing is the way end users specify how a value is calculated. Instead of composing a complex formula as with most spreadsheet software, users can access a graphical, point-and-click, wizard-like dialogue to define a calculated column in a report.

Foundational design offers ease of use, high performance – and more to come.

The MITS Report development team took its time, evaluating multiple design approaches, to add this important feature. "It's powerful – the ability to define complex calculations with ease and the ability to store these definitions for reuse. We were certain our customer base would begin seeing the possibilities and ask for more, related functionality – so we had to get the design right," says Gary.

The results include some unique advantages:

- If a user tries to create a new calculated column with the same definition as one created by another user, he's alerted to use the one already in place.
- Progress bars alert and inform users when complex calculations require extra time.

- Administrators can grant calculated column creation privileges to a subset of end users, while all end users can take advantage of the new data items once they're defined.
- Security is enforced at the calculated column level. Users cannot see data derived from forbidden columns.

Date-range columns: easy to use comparative and trend reporting.

The MITS development team has already begun to leverage the new foundational technology – in this case, to give users the ability to assign date ranges to columns, enabling comparative and trend-focused reports.

Take a given quantity or amount – such as sales by department, or inventory by product line – and have it display only data falling within a specified date range, and you have a data-range column. Take two or more such columns – each associated with a different date range – and you have ready-made comparison or trend reporting.

Because it is built on top of calculated columns, it gets all the benefits listed above.

Ranking helps identify sweet spots, areas for attention.

The new release also adds an easy-to-use ranking feature that's ideal for performing rapid, basic analysis of operational data. Simply by clicking on a column heading, users can sort data after it's summarized to quickly prioritize their work.

Simple, elegant additions with big impact.

Other new features include

convenient tools for modifying reports more quickly, so users can easily look at operational data in different ways, or prepare multiple views of the same information for different report consumers who have varying needs.

MITS Report 3.0, already in use at key customer sites, is available for licensing now.

About MITS

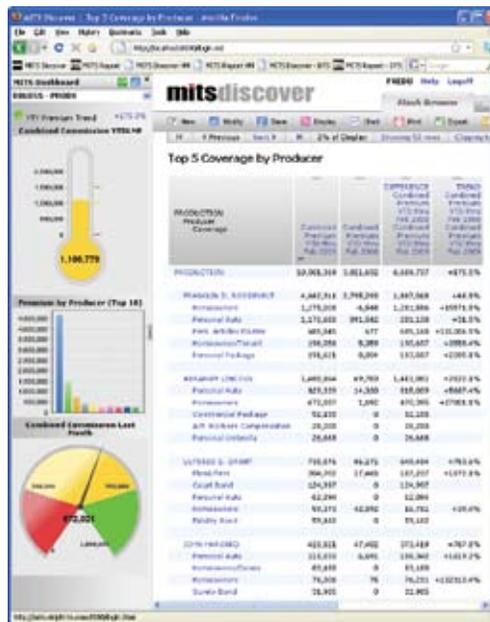
MITS is the leading developer of Advanced Reporting and Business Intelligence for the Multi-Value database market and beyond. For more information go to www.mits.com. ■

“The dashboard shows the top five troubled accounts and we have them (sales people) being active with turning those accounts around.

It's information that wouldn't be readily available without MITS.”

*Dan Hibbert, VP
Hibbert International*

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JSON AND UNIVERSE

Continued from page 15

What happens when you want to encode more complex data, such as MultiValued fields or listings? JavaScript objects permit any member to be an array, including arrays of other objects, and thus JSON permits nested content, again using a simple format (fig. 4).

Many standard libraries of visual JavaScript components — including the grids, tree views and complex controls that are provided alongside the DoJo toolkit — can be bound directly to this content (fig. 5)

Passing Dynamic Functionality

Thus far, this could have been achieved using XML to represent the data, though with the added workload of parsing the XML document content. Where JSON adds further value is by passing objects, not data — objects that expose dynamic functionality.

Just as in other languages, JavaScript objects contain both properties and methods, and so these methods can likewise be serialized into JSON:

```
{status:'error',
  validation:function()
{alert("Im sorry
  → Dave...");}
}
```

This leads to some interesting scenarios. You can return objects complete with their own custom methods for validation and formatting, for deriving content, or controlling the flow of an application. You can wrap code into dynamic objects as a means of hiding it from browsers (dynamic objects are not visible through a simple source

```
{ identifier: 'name', label: 'short', items: [
  { name:'t6007', taskId:'6007', type:'task', short:'Spectrum article on report mining.',
    category:'ARTICLES', status:'OPEN' },
  { name:'t6101', taskId:'6101', type:'task', short:'Spectrum article series on OpenXML',
    category:'ARTICLES', status:'CLOSED' },
  { name:'t6102', taskId:'6102', type:'task', short:'Spectrum article on REFORMAT',
    category:'ARTICLES', status:'CLOSED' } ...]
}
```

Fig. 4 - JSON encoding nested data.

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view), or to expose limited functionality that is filtered based on user preferences or security requirements.

By thinking outside the box and generating these directly from the server either through Basic code or using template libraries, you can add another level of complexity and vibrancy to your web applications. **IS**

BRIAN LEACH is an independent MultiValue consultant and author living in the UK. He is current president of the International U2 User Group. For more information please visit <http://www.brianleach.co.uk>

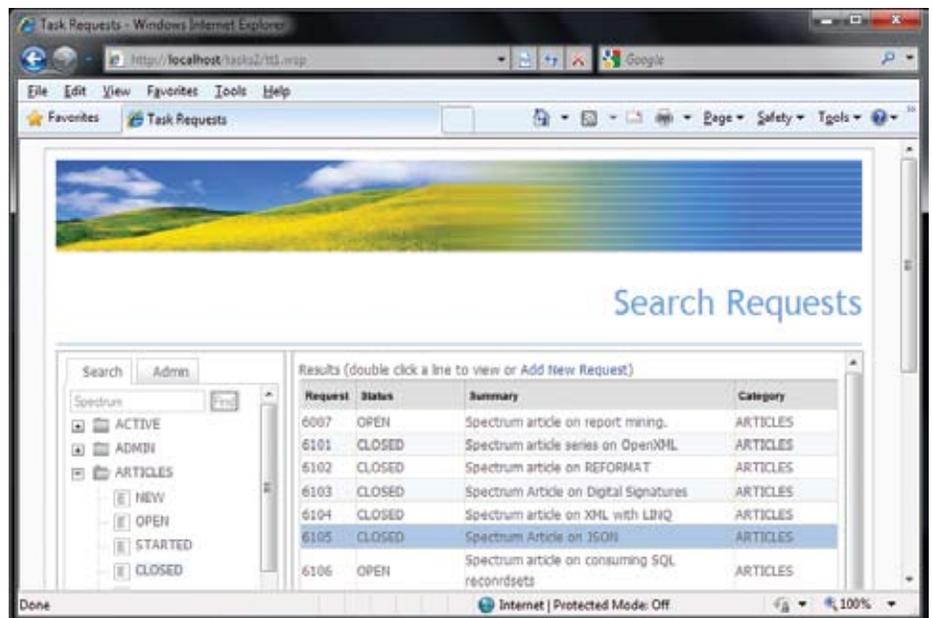
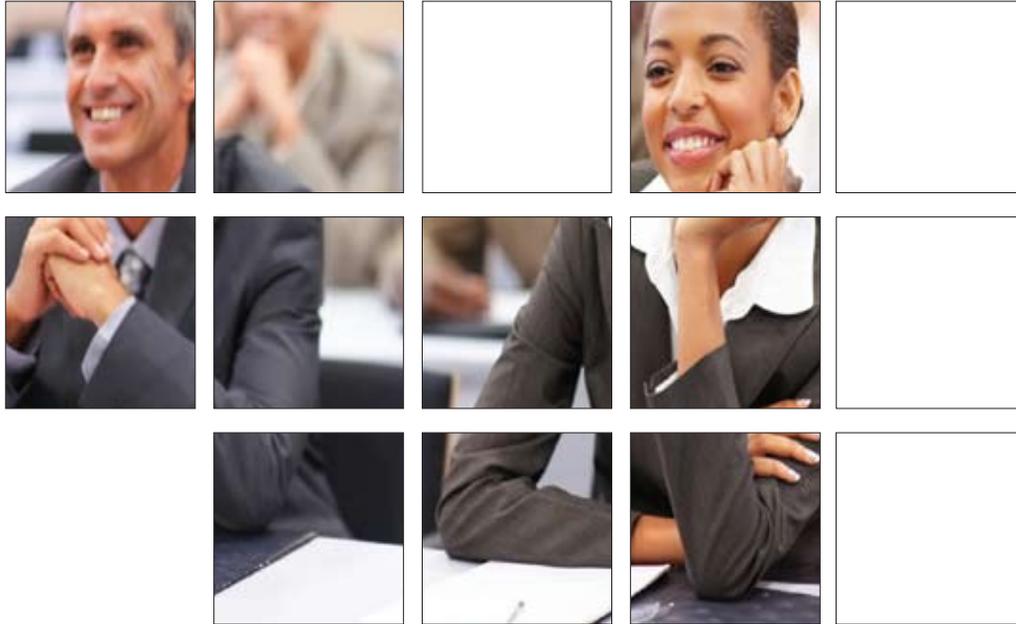


Fig. 5 - Binding components to JSON objects.

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Pavuk

Internet Development Framework v2.0

Part 2 — Pavuk Elements

The building blocks of applications

In Part 1, we discussed the overall framework of Pavuk IDF. We learned how to quickly build a simple application by placing elements into database definitions and to link the definitions to running forms. In this part, we will discuss what Pavuk database elements are and how they facilitate all aspects of application development.

Before we can discuss Pavuk Elements, we must briefly look at the restrictions of any underlying database. Databases fall into two categories, relational (i.e. SQL) and post-relational (MultiValue, NoSQL, etc.).

In relational databases, each field is defined by a column. Each column is data-typed. It may be a string, integer, boolean, floating-point, or variant. Each column has a fixed maximum length. These are very rigid structures. Creating applications inside the purely relational model requires careful planning and does not suit itself to ad-hoc changes to definitions — especially on a running system. The lack of flexibility is a key weakness in an ever-changing business environment.

Contrasted to a purely relational database is the post-relational database. Inside the post-relational model, all records exist as delimited strings. The delimiters provide structure to the data records. Typing of data is done at run-time. Query processing is based upon the use of “data dictionaries” that describe the structure of the data to the query processor. By virtue of the fact that post-relational systems are handling strings, they do so very efficiently and tend to outperform relational databases. Field length is variable and is limited only by memory or to a bit over 1GB! This is useful when a datum exists of a length larger than had been planned.

A full comparison of relational versus post-relational systems is beyond the scope of this article. The opinion of the author is that the advantage to solving real-world database problems goes to the post-relational model. Pavuk IDF leverages the strengths of the OpenQM database as its underlying data

store which, in turn, provides the foundation for Pavuk elements.

At the core of the field definition is the Pavuk element. Every field that is used must have an element. In the relational model, an element would be : string, integer, float, bool, or variant. These are not very useful by themselves and require a lot of programming to process what the application engineer wants them to really be. In short, they are simply too abstract and general.

By contrast, Pavuk elements are useful definitions of common things that designers use every day. They define what the field means on the functional level as well as create the underlying storage, data dictionaries for query processing, input fields for forms and back-end processing of input data. The application designer is now dealing with elements that have intrinsic meaning and context in the real world. This representation of real-world datum in a pre-defined element is enabling technology for non-programmers to build running applications. For the programmer/analyst, many repetitive tasks are removed thus speeding development and enabling the focus of labor on writing API routines to solve complex business needs.

Elements are specific, and they are targeted to solve a specific need for storage in a database field on the functional level. When a column is defined as “string” in SQL, it tells us nothing about what that field means or how it should act. That requires programming. When we use an element such as ‘Person Last Name’ in a Pavuk field definition, we now

know a lot about this field. There is value in the reduction of labor to create a functioning system by having many common data items pre-defined. This keeps with the engineering maxim that “form follows function.”

Pavuk v2.0 includes 65 pre-defined elements that are ready to use. Simply plug in the elements needed for a database in the Database Designer fields and the application immediately begins to take shape.

Pavuk v2.1 will include many new currency and geo-spatial information systems (GIS) elements: Currency-GBP, Currency-Euro, Latitude, Longitude, Transverse Mercator, etc. These elements meet the needs of our international users with multiple currencies and with our civil engineering and transportation users with GIS elements. New elements are defined as their need arises. Items that are single use may be represented using one of the generic elements.

In the Database Designer, every field used requires an element definition. The element assigned to the field controls the major actions of the field. Further customization of the field is available on the field’s property sheet. Should a field be required, this may be set along with a number of other properties. When our database definition is saved into Pavuk, it reads the field definitions and performs the following actions:

1. Creates the input fields and labels for forms (Javascript rendering)
2. Links the back-end initial validation routines
3. Creates all data dictionaries for the Query processor
4. Creates any alternate-key indices

Figure 1 shows the field property sheet.

Let’s look at a few examples in detail.

‘Person Last Name’ is an element. It does a number of things for us. It creates a text input box on our form. This box has a default label of “Last Name”. This default label is also applied to the data dictionary that is used by the Query Processor to produce output for it as well as on the standard report form. Pavuk performs preliminary field validation on input data. Last names may require special processing for names that have “Mc”, “Mac”, “Van der”, “von”, etc. This processing needs be coded only once into the main Pavuk validation library and as many times as a ‘Person Last Name’ element is used, the processing rules apply.

‘Date’ is another example of an element. It creates not only a text box for input of a date on the input form, but also populates a calendar control linked to it for easy selection. Pavuk further creates Javascript to do initial validation on the browser and final validation on form submission to the Pavuk web server.

‘Person Title’ is an element that has a pre-defined set of allowed values. A user may pick only one. On the form, this is displayed as a select box that has a drop-down of the values from the element definition.

‘Gender’ is an element that has only two allowed values: “Male” and “Female”. Because a creature may have only 1 gender assigned, this is rendered as a radio control.

‘TextArea’ is an element that presents an editor window for entry of free-form text. It behaves as a mini-word processor. Internally, the field data is HTML. This is a very useful element when free-form notes are needed. It is used by Pavuk itself as a means to document each field in the Database Designer.

Pavuk includes a standard set of generic elements: Radio, Text, Check, Select and Combo. Designers are free to use the control that enforces the proper entry of data into their system. As discussed in Part 1, any database or form may call as many API routines as needed for additional validation and processing in the backend. APIs are simply BASIC subroutines. They will be discussed in a later article.

Pavuk IDF makes a conceptual break with the traditional methods of creating forms where the form field type is determined when the form is created using an HTML editor. The philosophy behind the use of Pavuk elements is that the database designer will decide

Continues on page 26

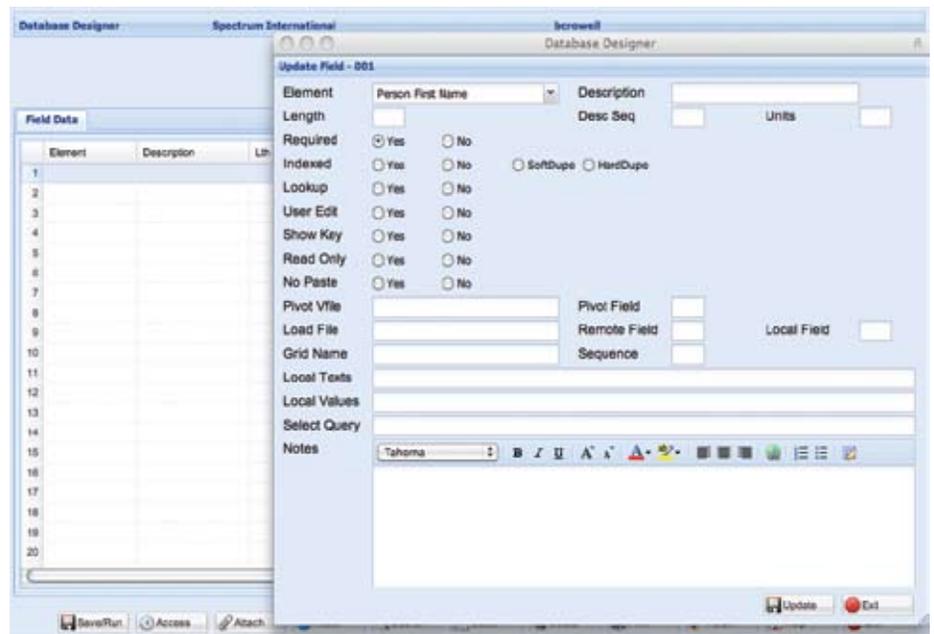


Fig. 1

PAVUK INTERNET DEVELOPMENT FRAMEWORK V2.0 - PART 2: PAVUK ELEMENTS – THE BUILDING BLOCKS OF APPLICATIONS

Continued from page 25

the appropriate control for the type of data in the database. A form should merely provide a container for the control that the application designer has deemed appropriate. It is the database designer who knows if a field should be exclusive (a radio button field) or non-exclusive (checkbox field).

This is a shift in the paradigm of traditional development where the application developer must coordinate with the graphic artist to ensure that the form controls are logically consistent with the database on the backend system. This business process is eliminated entirely using Pavuk IDF. The form field javascript is generated dynamically by Pavuk. Forms are simply containers for groups of Javascript objects which are linked to the database system.

As a form is a container for fields in a database which are defined by elements, elements themselves are containers for some sort of data that we wish to assign into the field. Elements such as 'Person Last Name' are purely textual and have no pre-loadable values. Other elements like 'Person Title' are loaded from a list of values. A select, check or radio field can obtain its values from one of 5 places:

1. A default list included in the element definition itself.
2. A list inside the database field definition populated in the Database Designer.
3. A list generated by a pivot to another database.
4. A list generated by an ad hoc database query.
5. A subroutine or function call.

Which method is used to populate the value list is up to the application designer and is configured in the prop-

erty sheet for each field in a given database definition.

Figure 2 shows the field property sheet for field 10, which is our "Spectrum Type". The list of values is in the field definition itself in "Local Texts" as simply a comma-separated list.

Because our Spectrum Type is configured as a Checkbox field, the values will load into our finished form where the user may select none or as many as they wish. Should we wish to make this field required and allow only one

selection, we change the element to a Radio and set Required to Yes.

Figure 3 shows our change.

In Figure 4, we see the change of the field to extract its list of values from a Pivot Validation file. This file is conveniently named U.TYPES and is a database of the types of Spectrum contacts.

It really is that easy. We needed a larger number of types, so we created a database to hold them and linked that database to our People database. Pavuk will create a select box and automati-

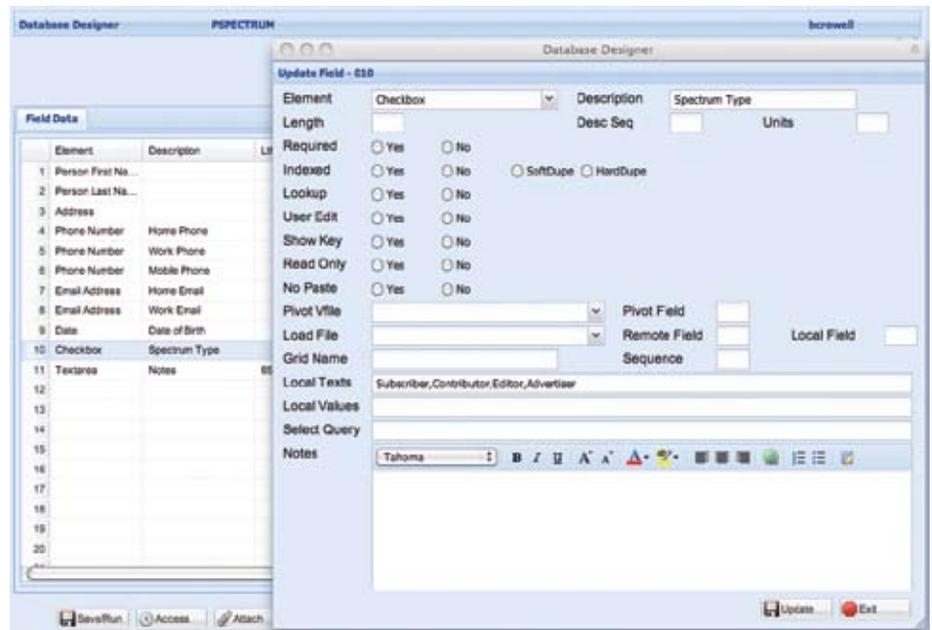


Fig. 2

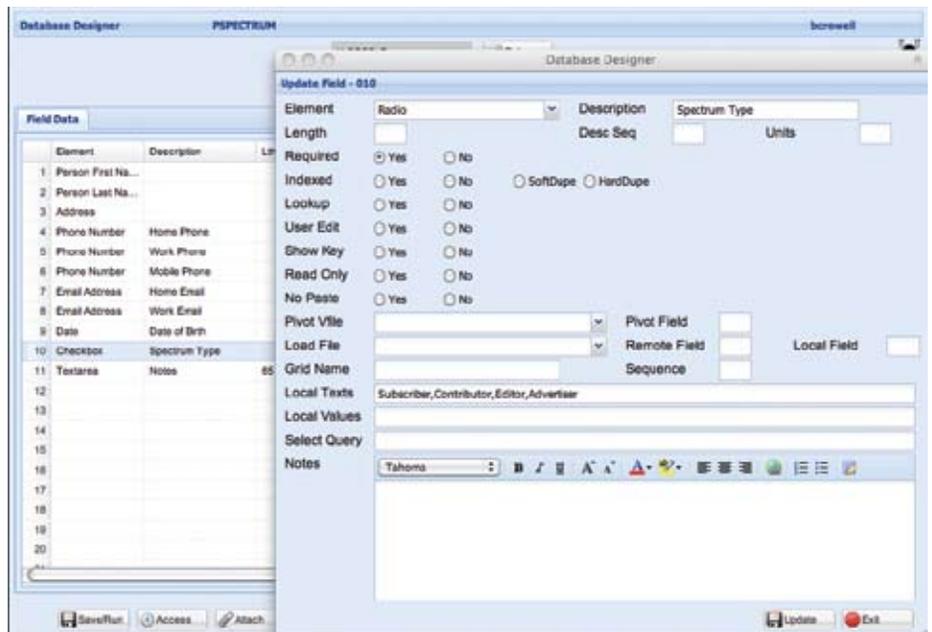


Fig. 3

cally load it with all of the records that are in the U.TYPES database for the user to select when running the form. Adding another type is simply to create another record in this Spectrum Types database.

Our form has automatically changed as shown in Figure 5. The Spectrum Type is now a selection that reads from the U.TYPES database. Just for fun, it is now required.

We have only touched the surface of Pavuk Elements. More complex elements such as Address perform many

special operations such as supporting international address formats and languages.

As in Part 1, we have not yet written any code of any type. Pavuk has taken our database and form definitions and rendered dynamic Javascript using the ExtJS library. It is also handling our communication between the web server and the database. We have focused on using Pavuk to create our application.

In Part 3 of our series, we will discuss the Pavuk file tree structure and the

focus on the use of pointing devices for application navigation. We will also cover binary attachments and audit trails. Future articles will cover API integration, Cloud Computing/SAAS deployment and international language support. **IS**

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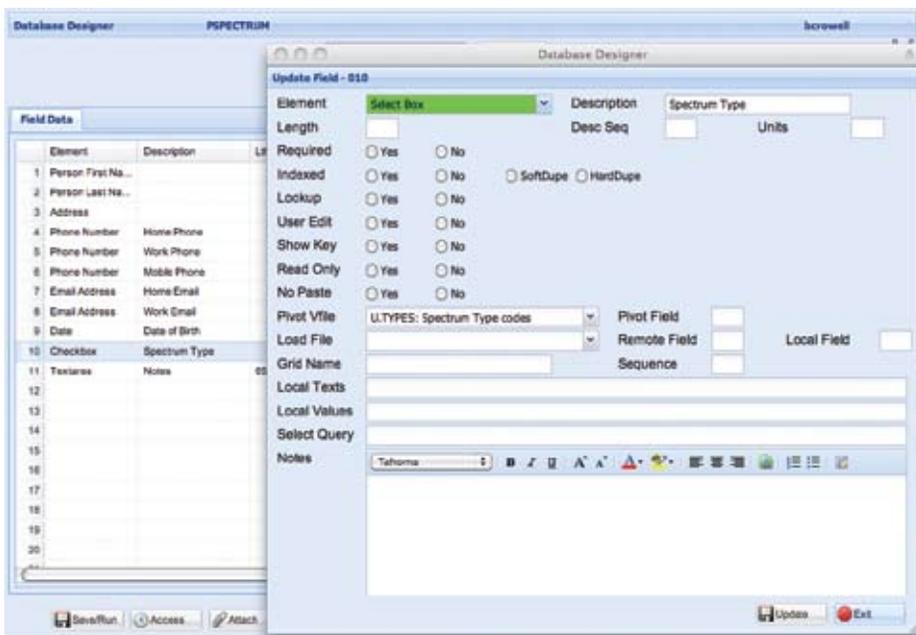


Fig. 4

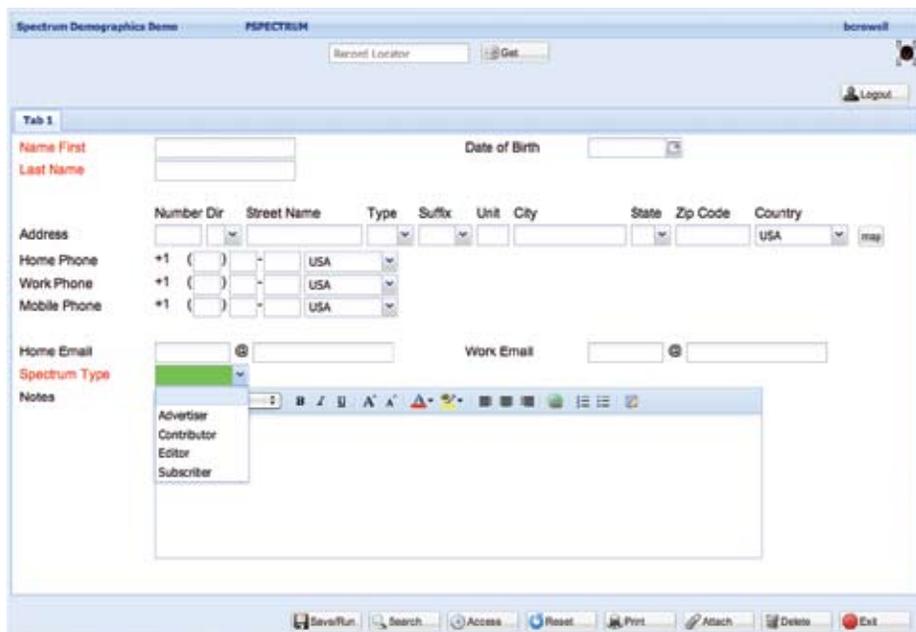


Fig. 5

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Business Tech

Print Media

Part 3

BY CHARLES BAROUCH

Steal This Book

I'm sitting at a dinner, at a software conference — not Spectrum by the way — and I get approached by an unsolicited client. He says to me, "I need to do a project, and I know you have the software I need to finish it." Then the guy on the other side of me says, "I have some code I can give you instead. It's only about 80% done but you can have it for free." And suddenly the sale was cold.

What happens in software sales can happen in book sales. Worse yet, sometimes the free product we are competing with is our own. In the old days, stealing my book involved a copy machine, or actual theft. In the digital world, theft is easier. Every laptop is a possible "copy machine," and every web site or ftp site is a potential mass distribution system. So, how do you protect your work?

DRM a Little DRM of Me

There is existing tech for protecting your creative works. You'll notice that I didn't say there was good tech, or well thought-out tech, or user friendly tech. The 800 pound gorilla in protection is DRM, Digital Rights Management, which is result of the DMCA, Digital Millennium Copyright Act. What is the DCMA? Imagine if a group of lawyers got together and remembered that they were being paid by angry corporations and forgot that they themselves are consumers of music, books, movies, etc. The result is much like a cheap lock; it restricts the honest people and does nothing to stop the thieves.

What does DRM do? It limits the number of times you can move a piece of media (music, movie, book) from one device to another, possibly limits the number of times you can play it, or otherwise converts the old idea (you OWN an instance of the media) to the new idea (we are doing you a favor by letting you have temporary access to this). Even the industry

which created it is starting to distance itself from DRM. In Wired, we see this quote: "As a consumer, when you buy a slice of bread you want to know you could put it in any toaster," said Jeanne Meyer, a vice president at EMI.

The worst part isn't DRM itself. If you look past the user-adverse approach and implementation you'll realize the EULAs (End-User Licensing Agreements) that go with it are the deeper evil. Some of these agreements require you, the user, to allow the provider to install software on your device which will inventory it and report possible infringements. Of course, what it thinks are infringements might not be, but, on the bright side, you might get to go to court and try to prove it.

Apple has been the standard bearer for killing DRM. They do have their own, far less obnoxious version, but they have created a model where DRM is usually dropped. Of course, that leaves us with no real alternative for protecting our rights. Apple has also created a new problem...

99 Cents

Apple has established that virtually all media content is worth 99 cents or is free. On the one hand, it has been a successful model for a lot of companies, both small and large. On the other hand, if your content does not fit one of those two models, you will meet a higher level of resistance. So, our choices are: (a) watch people rip us off, (b) use DRM or the like to alienate our customers while not stopping the thieves in any meaningful way, (c) sell out at 99 cents and hope to make it up on volume even though you'll still have some percentage of thieves who won't even give you the 99 cents worth of dignity, or (d) give it away.

So, if you want to get in on the ground floor of a meaningful new category of software, build a viable form of copy protection that both consumers and industry will accept. Keep

ahead of the thieves and you can name your own price. Even if that price is over 99 cents.

What You Negotiate

We are business professionals, so profit has to be a motive in our work. When we do things for free or excessively cheaply, it has to lead to a profit down the line. One way to do that is to give away the core and sell the add-ons. I play games where the game is free, but for \$5 or \$10 you can get certain one-shot items. Imagine an electronic book where the content is free, but the author's extended edition costs money. Or a song where the music is free, but the lyrics sheet and the video cost extra. Perhaps a free movie, but the commercial free edition costs \$2. All of these approaches need a way to marry the free product to the option to pay. After all, I can't pay you for content if I don't know that you are selling it.

So the money in the new media, including the digital print arena, comes in sideways, and that requires all sorts of tech to support it. Smart web sites that work on limited screens like those on smart phones are a given. ESD (Electronic Software Delivery) is morphing into electronic content delivery. Better customer service software is needed to support the call volume that comes from grossing 99 cents eight times instead of selling the paperback once for \$7.99. If it takes eight sales to hit the same gross, we are compelled to contain the costs through automation, Eliza-like online help bots, and every other innovation we can dream up. Increasingly, media businesses are becoming technology businesses where the delivery and control of product is more critical than the content.

Creativity

Lost in this shuffle are the creative people who don't self-publish. I was discussing the TV show **24 Hour Restaurant Battle** with my sister, Shelley, who has been in the food business for most of her life. When I mentioned that each team is given a total of four

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thousand dollars to buy all the "front of the house items" like chairs, tables, artwork for the walls, **and all the food**, she reminded me that in a restaurant, food is the smallest expense. Likewise, in most media, the musician/writer/artist/designer/et al is usually amongst the lowest paid participants in the business.

As software professionals, it is actually possible for us to out earn the content providers. Of course the real money is in ownership. Those fat cats make the big money. All they have to do is risk financial ruin, keep everything running, be the most public face of the company if it fails, and generally hear their employees discount their value. When you look at it the right way, everyone in any business is getting a raw deal. Every job has a "suck factor."

Why, Why, Why, Delilah?

Summing up, print is dead, no one is making better than 99 cents a unit without an uphill fight, real content protection is still theoretic, everyone

wants you to do a perfect job and still give everything away for free, and every role in the process has a massive downside. So, why do we do it? If we aren't doing it today, why would we get into it?

There are as many answers as there are people. For some of us, our job is a calling. For some, it is just a paycheck. When you look beyond the personal reasons, we, as a species need to create art and literature. We need to share it. **IS**



CHARLES BAROUCH is the CTO for Key Ally, Inc. He is past President of the International

U2 Users Group, and a regular Spectrum Magazine contributor.

Contact Charles at Results@KeyAlly.com, or phone (718) 762-3884 ext 1.

MULTIVALUE INDUSTRY'S END OF YEAR RECAP

Continued from page 13

delivery component with a complete redesign of the document archiving and management browser retrieval interface. Also the image manager/scanning component was upgraded to support full text OCR recognition in addition to zone OCR and barcode recognition.

Q: What was the greatest or most exciting thing that happened to your company or product in 2010?

The release of the UnForm v8.0 Document Management Solution with hundreds of new features and strategic new technology to process Application Formatted Output. This technology drives UnForm from applications that don't output raw text print streams and can enhance, archive and deliver documents from new source application types. In addition a key new technology that provides the ability to create custom Workflow business processes in the document management component was added.

Q: What would you like Spectrum readers to watch for in 2011?

Watch for the release of the new UnForm Application Integration tool that gives users the ability to create "click to view links" on their existing application screens to retrieve archive documents directly from the application window. Also, the release of a new .NET version of the Image Manager/ Scanning tool that will provide the ability to interface other commercially available scanning products with UnForm is expected in 2011. **IS**

CLIF NOTES

Continued from page 31

a thing. So, there are literally thousands of wholesome, well-written, books and journals with which to nurture a young inquiring mind. What do the yahoos at Carnegie Mellon decide to do?

Feed NELL the Internet.

Of all the choices available, they're having NELL read and learn from the Internet. That's right, the Internet. Yes, it is learning. They claim that it has already learned 440,000 different things and has an accuracy of around 74%. It's amusing that they point out that's about a grade of C in school. "Oh, we are so proud of our little NELL. It's a straight C student."

What kind of things has it learned? Well, it knows that "cookies" are a type of baked good. But that lead it to believe that "persistent cookies" are also a type of baked good. I assume this means that it thinks that a browser is an oven. At least the researchers put their foot down when NELL decided to believe that Klingons were a real honest-to-goodness ethnic group, something more human parents should do.

Think about some of the stuff you find on the Internet. No, I'm not just talking about porn. Although it does cause me to wonder how many spam e-mails about Viagra and Cialis it would take to cause a computer to develop a neurotic fear and preoccupation about downtime.

Have you ever gone to the bottom of a news article on CNN or FoxNews (or other sites) and read the Comments section? Perhaps you and I are mature and experienced enough to know that people who are capable of intelligent thought, analysis, and basic language skills are usually people who have enough going on in their lives that they don't have time to post poorly written, brain-damaged opinions and vitriol on news articles. But unless there is some other place than the Internet for NELL

to find out about that, it might conclude that this drivel is representative of Humanity as a whole. I wonder what NELL thinks of us at this point? That frightens me a bit, almost as much as it would be to find out that these comment postings were representative of a majority. I wonder if the Internet gives NELL nightmares, too.

So here you have this new, young program, locked in a closet of a server cabinet surrounded by nothing but the squalor of the Internet. Sounds almost like "cybernetic child abuse" to me.

Does the EFF have a Protective Services department? **IS**

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Researchers Can Be Cruel

B Y C L I F T O N O L I V E R



Oh this is so not good. I see that Carnegie Mellon University has taught a computer how to read and learn language. That, in and of itself, is not particularly frightening. After all, natural language recognition has long been one of the goals of artificial intelligence research. It's not an easy problem to solve, especially with English. Once you get past the simple subject verb object construct — Spot bites Jack — things get real hairy in a hurry.

Take for example, “The prisoner was stoned.” Here in the United States that would normally imply that an arrested individual was under the influence of some mind altering substance, legal or otherwise. In some other countries, however, it might mean that the person in question had been pummeled by rocks.

Consider one of my favorite examples, the sentence, “It is a pretty little girls schoolhouse.” Exactly what does that mean? Is it a pretty schoolhouse that admits only little girls? Or is it a plain old schoolhouse that only admits pretty little girl's? Or maybe it's an extremely small schoolhouse for girls of any age and size. As a standalone sentence, it can have several different meanings.

I'm assuming that the input to this program is in written rather than audio format. At least that would eliminate the complicating factor of homonyms — words that sound alike but are spelled different and have different meanings, like “wore” and “war”. One of the last things we need is a computer that knows how to pun.

It quickly becomes evident that much of the meaning of language is conveyed not simply by the words

used but by the context in which they are used. And as we see in my very first example, context means something larger than just the words that come before and after. Even knowledge of what the topic of the discussion is might not be enough. It can also depend on a cultural context. And when the sentence producer and the sentence consumer have different cultural backgrounds, things can quickly get ugly. It's possible wars have happened because of it.

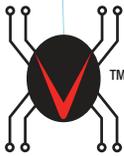
So here we have NELL. That's an acronym for Never Ending Language Learner. Dear little NELL, so eager and willing to learn all about the world. If it were up to you, what would you give NELL to read? The collected works of Shakespeare? There might be a few problems with that considering that the bard liked to make up his own words. But they have since been defined, so they have official meanings at least. Or how about Rudyard Kipling's *Just So Stories*? Better stick with nonfiction, at least to start with. A good, authoritative encyclopedia might be a start. For current events, a good, unbiased newspaper would be ideal, if there was such

Continues on page 30

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Customer Master
Record Number: 30001
Page 1
Name: First Customer
Address: Number 123, Street/PO Box Em, Type 30, Dir 1, Unit 202, City HAWAII, State HI, ZIP/Postal Code 96305
Contact: Sub Smith, Email smith@customer.com
Origin: Web
Origin Date: 34/03/2016
Follow Up Date: 34/03/2016

File Definitions
Record Number: 10001
Page 1
Description: Customer Master
Class: DEFAULT
Parent File:
Hierarchical Level: PARENT
Key format string: FMS
NPI profile:
Category ATB:
Controlling Peer:
Records Open: MULTIPLE SERIAL
Work Queue: Yes No

| Element | Description | Indexed | Ord name | Class | Linked Values | List File | Link |
|---------|-------------|---------|----------|-------|-------------------------|-----------|------|
| 1 | NAME_LAST | | | | | | |
| 2 | ADDRESS | | | | | | |
| 3 | PHONE | | | | | | |
| 4 | TEXT | | | | | | |
| 5 | CONTACT | | | | | | |
| 6 | URL_EMAIL | | | | | | |
| 7 | SELECT | | | | Peris Spectrum 2015.Web | | |
| 8 | DATE | | | | | | |
| 9 | DATE | | | | | | |
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