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# INTERNATIONAL Spectrum<sup>®</sup>

THE MULTIVALUE  TECHNOLOGY MAGAZINE | MAY/JUNE 2014

## INTERNATIONAL SPECTRUM 2014

# Conference Wrap-up

### ALSO IN THIS ISSUE

- ◆ Marketing without a Marketing Background
- ◆ Unstructured Data — OCR
- ◆ Clif Notes: The Ice Cream is Back!



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## 6 International Spectrum MultiValue User Conference 2014 Conference Recap

International Spectrum 2014 was a hit with new and existing developers. See what you missed at this year's four days of education, networking and fun. Look at what "Start-to-Finish" tracks were available to MultiValue developers and what the attendees had access to.

## FEATURES | MAY/JUNE 2014

10 **Marketing Basics for MultiValue: How to Market without a Marketing Background** Not all of us have Marketing Departments. If your marketing is do-it-yourself, you should be reading this to learn about all the latest marketing terms and what they mean to your business. **BY ANITA MACKIE, MARKETING ASSISTANT, KORE TECHNOLOGIES**

17 **Unstructured Data: Using OCR to perfect Accounting Data Entry** Optical Data Capture has moved from specialized uses into many Line of Business Applications (LOB) as primary input devices. While it is still largely overlooked, it can speed up data entry and accuracy in bookkeeping and accounting departments significantly. **BY NATHAN RECTOR**

23 **Clif Notes: The Ice Cream is back!** Read Clif's point of view on the International Spectrum 2014 MultiValue Conference in Phoenix, Arizona. There was much to experience at this year's conference, not just the return of the ice cream sundaes! **BY CLIFTON OLIVER**

## DEPARTMENTS

**From the Inside** page 4

**From the Press Room** page 13

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# From the Inside

Well, one more International Spectrum Conference is complete. Now it's time to look at my next twelve months to decide what I want to do, change, and plan for the next year.

## Conference News

Let's start with the 2015 Spectrum Conference. We have made a big change in how we are running the conference for 2015 and 2016, and this is likely to affect what we do with all future conferences.

Since 2006, we have been staying in a location for 2 years, and then changing locations. We wanted to move the conference around the country instead of keeping it just on the west coast.

That decision has been particularly popular with attendees on the east coast. Good news: we will be back in Florida for 2015. The two-years-at-a-time idea has been dropped. So, 2016 we will be back in Phoenix, and then in 2017, we will be back in Florida again. We will be moving the conference every year to maximize the chance that everyone gets to keep up with the latest training and technology.

## Magazine News

If you didn't see the press release in the Spectrum Newsletter in May, then this will be news to you. Are we going purely Digital? No we are not. There is a value to the print edition of the magazine, and we would like to continue to leverage it. Having a high-gloss magazine in-hand, or sitting on your desk provides, credibility to the marketplace that doesn't exist anywhere else.

We are transitioning the magazine from 6 free printed issues to 6 free digital issues and 1 free printed issue. If you are still interested in

receiving the the bi-monthly printed issues, you can still get them, but they will only be available for a paid membership or subscription.

If you want to find out more about how to get the bi-monthly print edition of the magazine, please go to: <http://www.intl-spectrum.com/magazine/>

## Webinars and Training Between Conferences

While we will continue providing webinars and training, we are also adding a mentoring service. What is mentoring? Mentoring goes beyond webinars, adding one-on-one training in MultiValue technologies, concepts and integration.

Do you need someone to help you through an integration issue? Do you need to train a new employee? Do you need to understand how a specific concept affects you company? Do you need to have code reviews, or want someone to recommend how to optimize your existing systems?

All these are things a Mentor can provide to you. The mentoring process is all about expanding your knowledge and understanding of how use your technologies effectively.

Our adhoc webinars and training videos will be ramping up over the next few months. I am currently looking at ways to restructure them, so keep an eye out for these changes as well. We are known for teaching, but we are also always learning.

**-NATHAN RECTOR**  
President, International Spectrum  
[nathan@intl-spectrum.com](mailto:nathan@intl-spectrum.com)

# INTERNATIONAL Spectrum

MAY/JUNE 2014

NATHAN RECTOR  
*President*

CHARLES BAROUCH  
*Editor*

SYDNEY BAROUCH  
*Editor*

TRACEY RECTOR  
*Layout*



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**MISSION STATEMENT** *International Spectrum* magazine's editorial mission is to be the premier independent source of useful information for users, developers, and resellers of MultiValue database management systems, open systems business database solutions, and related hardware, software, and peripherals. Published bimonthly, *International Spectrum* provides comprehensive coverage of the products, companies, and trends that shape the MultiValue marketplace as well as the computer industry at large — helping its readers get the most out of their business computer systems.

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*International Spectrum* is published six (6) times per year at the subscription price of \$40.00 U.S. in the U.S.A.; \$45.00 U.S. in Canada and Mexico; \$50.00 U.S. for other countries. Single copy rates are \$7.00 U.S. in the U.S.A. and Canada, and \$9.00 U.S. in all other countries. *International Spectrum* is published by International Spectrum, Inc., 8956 Fox Drive #102, Thornton, CO 80260; Tel: 720/259-1356; Fax: 603/250-0664 E-Mail: [request@intl-spectrum.com](mailto:request@intl-spectrum.com). Copyright 2014 International Spectrum, Inc. All rights reserved. Reproduction in whole or in part, without written permission, is prohibited.

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## NEWS RELEASES/UNSOLICITED ARTICLES

*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](mailto:editor@intl-spectrum.com). *International Spectrum* retains all reprint rights.

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## Spectrum University Webinar Series

### Upcoming Schedule

**MultiValue Aware Excel Spreadsheets**  
July 15, 2014

**Building a Custom Mobile CRM with  
MultiValue Data – Part 1**  
July 22, 2014

**Integrating Salesforce with Your  
MultiValue Application – Part 1**  
July 24, 2014

**Building a custom Mobile CRM with  
MultiValue Data – Part 2**  
July 29, 2014

**Integrating Salesforce with Your  
MultiValue Application – Part 2**  
July 31, 2014

**Accessing MultiValue Data with WPF**  
August 5, 2014

**.NET Entity Framework with MultiValue  
APIs**  
August 19, 2014

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## Conference Recap

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*“We as developers can get caught in a rut and like to stay in our comfort zone. The conference brings together developers and vendors of different backgrounds and expertise. The Spectrum conference has given me new ideas and product solutions which I was able to implement in our business.”*

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The 34th Annual International Spectrum Conference & Exhibition was the place to be for MultiValue networking, solutions, and education. Industry Professionals from all over North America, and around the world, gathered in Phoenix, AZ, from April 7th – April 10th, 2014, for four days of classes and conversations.

This year, we broke the sessions down into tracks. Each track was designed to take attendees — from start-to-finish — through the design and implement specific technologies. These Start-To-Finish tracks each introduced a specific development methodology and explained the underlying concepts, ending with a finished product. Our attendees walked away with over 20 hours of professional development in MultiValue database technologies and integration. That was just the value returned from sessions alone.

“Pretty Printouts and Reports” was a popular track. It focused on taking your raw “greenbar” reports and turning them into PDFs, into Emails, and even into data feeds for Excel, Word, and web forms.

As always, International Spectrum includes sessions on creating desktop applications with .NET as well. These applications showed MultiValue developers how to leverage .NET GUI and event driven process to create powerful UIs and tools. Included were sessions to teach .NET developers how to access MultiValue databases effectively and how to best use with MultiValue data structures.

There were two other tracks which went hand in hand, but actually addressed two different issues: “Presenting Real-time Data on Websites” and “Mobile/

*Continues on page 7*

Special Thank You to Susan Phillips for again providing all the conference photographs!



## SPECTRUM 2014 CONFERENCE RECAP

Continued from page 6

Tablets.” The way businesses are run today, driven by the demands of customers, these topics have moved from “*I would like to have*” into “*I must have.*” All business applications, especially CRM and ERP, must provide some kind of real-time data to the web or to mobile devices. Often, they are required to serve data to both.

In these sessions we covered topics from the basics of HTML, and best ways to control styling and layout, efficient ways to pull your data from your MultiValue database in real-time, and how to present MultiValue Data as JSON.

Mobile and tablet development has continued to become easier over the last few years. There were many discussions on how to create your mobile apps. One hot topic was the differences between a Webapp, NativeApp, and HybridApp, and how to use them to effectively present business information.

On a related note, Bluefinity International launched a new product called Evoke. This product provides MultiValue developers the ability to code-once, run-anywhere applications with MultiValue databases in mind. Evoke brings native mobile apps, hybrid mobile apps, and desktop apps within easy reach for MultiValue databases.

In addition to the Start-To-Finish topics, we had several management based topics: Project Estimation, MultiValue Source Control with GIT, Talking with SQL Programs, Big Data in MultiValue Databases, Disaster Recovering Planning, Enterprise Software (ERP) Must-Have Features, Secure Access to MultiValue Systems, and SQL vs.



MultiValue (A Database and Development Comparison).

Another hot topic was virtualization. With many businesses looking closely at whether to buy new hardware or virtualize their existing systems, these sessions addressed questions about speed, storage, and design consideration. The presenter provided checklists for virtualizing onto the private or public cloud.

Last but not least, Nathan Rector brought back the MultiValue Fundamentals. For the last 3 years, there has been an increase in attendees who are coming to MultiValue databases from other disciplines. This year's sessions on BASIC programming, dictionaries, and MultiValue file design, provided these attendees with a grounding in the fundamentals. Our format allowed other attendees to mentor the newer converts and answer questions that were not covered specifically in the sessions.

On Tuesday and Wednesday, the attendees were able to talk to our sponsors about tools and products that would help their business. As always, we started with our “Vendor Speed

*Continues on page 9*

Dating”, which is always a blast.

### Thanks to our 2014 Sponsors!

**Accusoft**

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**Zumasys, Inc.**

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*This was my first time being able to attend the conference and I really enjoyed it. My stay at the Wigwam was pleasant and the weather was, of course, very nice in Phoenix. I really enjoyed the conference and all the good people that attended. I recently took a position with a company using D3 after working in Universe for over 20 years. Although I had a little exposure to the 10 line dictionaries I never really had to make use of them until now. Several people were very helpful explaining the details of F-correlatives to me.*

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*International Spectrum was a great venue to learn some new technologies. I went on a web track which was from beginning to end a demonstration on how to build applications, not web sites, for devices like cell phones. The web track began with the most basic web, through PHP, style sheets and onto jQuery which makes the web pages into applications on the devices. These sessions are overviews and not really training, but the sources of the documentation are all given out at the sessions for further investigation. It all works with our MultiValue backend.*

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## SPECTRUM 2014 CONFERENCE RECAP

*Continued from page 7*



For those that do not know what “Vendor Speed Dating” is, all the sponsors get five minutes to talk to the attendees before the “sneak preview” party to inform them of things their companies can do for the attendees and the Multi-Value marketplace in general. It is very informal. One sponsor sang a song to the attendees, and another read an excerpt from his upcoming Science Fiction book.

During lunch, and throughout the evening attendees would gather in various places to network with each other. The conference wrapped up on Thursday with our traditional “Closing Conference” party. Attendees enjoyed having one last time to talk, laugh, and connect, as they enjoyed the sun, food, and drinks.

One of the perks of attending the live conference was a chance to revisit popular sessions with our on-demand recordings of the sessions and with the downloads provided by the speakers and sponsors. Most of the attendees took advantage of these post-conference downloads and session videos.

Now that the 2014 Conference is over, it is time to start planning for the next one. International Spectrum 2015 will be at PGA National, Palm Beach, FL on April 13th – 16th, 2015, and plans are in the works to bring the conference back to Phoenix in April of 2016.

If you have a topic or session you would like to see at the Spectrum Conference, please let me know. I am always looking for new ideas, as well as presenters. **IS**

# How to Market Without a Marketing Background

BY ANITA MACKIE

MARKETING ASSISTANT, KORE TECHNOLOGIES

**M**arketing builds brand awareness and recognition. It is essential in every business for us to have direct communication with our target audience. The basic fundamentals and principles of marketing help shape the way messages are created. The resources available to large corporations and chains differ from that of a small business. Agencies can be costly. So, what do you do on the small business level?

I have listed some common terms that we hear during day-to-day operations. Understand the similarities and differences to effectively and creatively connect with your audience.

## Marketing

Marketing is profit driven. It is about the exchange of goods and services for a profit. It is targeted and strategic with messaging to specific audiences.

## Public Relations

Public relations (PR) is the practice of maintaining the *relationship* between a business and the audience(s) it communicates with; employees, competitors, clients, prospects, etc. A good PR person is able to predict how an audience will react to a message before it's sent.

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*Brand yourself as an expert in your industry with news stories, graphics, social media posts, and community involvement. Remember, people want to talk to people.*

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## Advertising

Advertising is **paid** messaging that reaches a larger audience.

## Branding

Branding is another term that pops up in marketing lingo. Branding is how a company distinguishes itself from the competition by means of ideas, concepts and symbols. Take Coca-Cola for example. Its logo and status in the soft-drink industry are relatable to the audience. Next time you see a Coca-Cola commercial, look for the branding aspects; the product brings people together around the world to give you the *feeling* of being connected.

Communication is a life-long process; it's the way we interact with each other to exchange meaning. Traditional face-to-face communication is the most trusted and effective means but,

for most businesses, it's impossible to connect with every client this way. Marketers and public relations practitioners are successful because they are good communicators. They are able to think of innovative and affective ways to persuade, educate and inform their target audience.

- Know your audience

I cannot stress how important this fundamental element is. The demographics and psychographics of your audience will guide you when you plan your next project. Demographics include the age, gender, income, and education level among a group of people. Psychographics measure *feelings*, hobbies, and how a particular group of people react under different circumstances.

- Set goals and objectives

Goals are broad and difficult to measure. Focus on your objectives; on how you're going to achieve your goals. Objectives are tangible, precise and measurable and should affect your target audience's awareness, acceptance and actions. Essentially, you want them to be aware of your orga-

*Continues on page 11*



## MARKETING BASICS FOR MULTIVALUE: HOW TO MARKET WITHOUT A MARKETING BACKGROUND?

*Continued from page 10*

nization and the purpose of your message, you want them to accept it, and you want them to take action.

Keep in mind that most initiatives take time, so your objectives should include a time frame to set the stage for your evaluation process.

- **Language**

Language sets the tone of your message, so determine what approach would work best: conversational direct, or perhaps formal. In the MultiValue industry for example, you communicate with other IT professionals so it's okay

to use some technical jargon. On the other hand, not all projects focus on the same audience. If/when you're speaking to a non-technical crowd think of the language that will work best.

- **Time**

Marketing and PR campaigns will take time to generate results. Think of your sales cycle — for example, if it's six months to a year — your long-term marketing campaign will be longer. Of course, there are other factors at play but I want to keep this article basic. Don't feel that your efforts aren't working if you haven't put the time in.

Today, consumers do their homework before inquiring on a product or service. Your marketing and advertising efforts are designed to grab their attention, and when

that happens, it's time to nurture them with more information to then turn them into a client.

- **Content Creation**

Content marketing is a trending topic among marketers. It is very time consuming. If you're just getting started, don't assume that you have to create, edit and publish new materials immediately. Look at what you already have and decide if your target audience would find it useful. If it is, write a follow-up piece or create a graphic that will link the existing material as a reference. When it's time to create new material, you want it to have a long-term shelf life so you can talk about it in numerous and creative ways.

*Continues on page 12*



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## MARKETING BASICS FOR MULTIVALUE: HOW TO MARKET WITHOUT A MARKETING BACKGROUND?

Continued from page 11

Brand yourself as an expert in your industry with news stories, graphics, social media posts, and community involvement. Remember, people want to talk to people and if you're going the social media route, beware of too much self-promotion.

- Social Media

If you haven't gone the social route, you should consider it. In today's digital age more and more people turn to a company's social media pages before they engage directly. When it's time to go social, remember rule number one: know your audience. Which outlets are they using? When do they check their profiles?

A common trend I've seen among MultiValue professionals is that they are not very active on social media and/or they understand the value, but aren't sure how to incorporate it for business purposes. It's time for you to put on your 'PR hat' and do some homework. Find out the demographics of your au-

dience and how it compares to that of Facebook, LinkedIn, Google+, etc. Remember, social media was not designed or intended for business use so; self-promotion must be kept to a minimum. Keep in mind that it's strategic and continuous. Each medium must be managed in a precise way to generate results.

- Visual Communication

You don't have to be a graphic designer to tell a story visually. A basic understanding of color psychology may sound silly but there is truth behind it. An abundance of red — in some cultures — says, 'warning,' 'alert,' or 'danger.' While blue represents a 'calming' or 'tranquil' feeling. Your advertisements, banners, flyers, graphics, etc. should be simple, not too busy, and not too blank. The use of color and whitespace can go a long way. You don't want too much text in your ads because you want the receiver to visit your website, blog, or to pick up the phone and call you.

- Evaluation / Measurement

The evaluation and measurement processes vary from project-to-project but always ask yourself,

how do the results compare to the objectives? If the numbers are on the rise it's a sign you're on the right track. Always put yourself in your audience's shoes. If they're not opening or clicking links on your emails, ask why? Is it too 'sales-y?' Was the email sent at a bad time? Also, don't obsess about the number of 'likes' and 'followers' you have, it will happen in time. You should be concerned with the levels of engagement you have with your current following. That is the true testament of social media success.

So, there you have it, the basics of marketing. Whether you're a 'one man band' or a director of corporate communications these rudimentary points will help guide you on future endeavors. The Internet is your friend and we marketing people love to talk about what we do. Ask us questions; follow our blogs and connect with us on LinkedIn. We are always happy to point you in the right direction. You just have to ask. **IS**

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**ANITA MACKIE** brought her passion for marketing communications and public relations with her when she accepted the position of marketing assistant at Kore Technologies. She is responsible for content creation, event planning, PR, social media management and assisting with other marketing initiatives. She holds a bachelor's degree in public communication from SUNY Buffalo State College and in her free time she enjoys shopping, cooking and spending time with her husband in their new Calif. home. She can be contacted at: Kore Technologies, [www.koretech.com](http://www.koretech.com), 858.678.0030

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# FROM THE PRESS ROOM



## Entrinsik Informer Receives Top Rankings in Comprehensive End-User Reviews on TrustRadius

Entrinsik Inc. ([www.entrinsik.com](http://www.entrinsik.com)), developer of Informer operational reporting and business intelligence software, has recently announced it has received top rankings on TrustRadius ([www.trustradius.com](http://www.trustradius.com)). TrustRadius gives software buyers access to objective, in-depth user reviews. It is the leading site for business users to share their experiences with various software providers through detailed, categorized reviews, lending valuable insight to prospective buyers with real-world use cases.

Since the first review on March 25th, 2014, Entrinsik Informer has received a record 60 customer and partner reviews, the highest number of any software provider in the BI/Analytics category. With an average overall rating of 4.5 out of 5 stars, Informer users have shared detailed and wide-ranging reviews of how their organizations are benefiting by using Informer.

"The Informer reporting tool is easy to use for users of all

levels of technical expertise, and users can create reports without help from IT. Security administration is very flexible, and dashboards allow immediate access to statistics and key performance indicators."

~ Kara Bosch, Director College Admin Support Training at Central Piedmont Community College

"I find Informer a great product that will compliment any public safety agency by giving them the ability to create their own tactical reports with tools that are very user friendly. End users are now more educated regarding software applications. It just seems like sense to put the right tools in front of them to enhance their work environment."

~ Joseph Riquelme, Senior Technical Solutions, Consultant at Motorola Solutions

See all reviews of Entrinsik Informer on TrustRadius at [www.trustradius.com/products/entrinsik](http://www.trustradius.com/products/entrinsik).

Entrinsik Informer is recognized as an innovative solution in data management, providing access to real-time data from multiple sources, multi-dimensional analytic capabilities, and intuitive data visualizations, all accessible anytime, anywhere from an end-user friendly web-based interface.

For a demonstration of Informer or a free trial, call Entrinsik today at 888-703-0016 or email [sales@entrinsik.com](mailto:sales@entrinsik.com).

## About Entrinsik

Since 1984, Entrinsik has been developing, implementing, and supporting information management solutions that enable organizations to maximize performance and improve bottom lines. Selected by Database Trends and Applications (DBTA) magazine as a top Trend-Setting Product in Data for 2014, Entrinsik Informer software is an innovative, reporting, analysis, and dashboarding solution used by organizations around the world every day. For more details visit [www.entrinsik.com/informer](http://www.entrinsik.com/informer). ■



## Dealer Management Services Completes Migration to OpenQM

Dealer Management Services (DMS), a leading provider of ERP software solutions to the Automotive and Leisure markets in the UK, has completed migration of over 75 client systems running their cloud based Navigator application to OpenQM. The key advantages of QM over their previous MultiValue environment cited by DMS is that it is a high performance but low resource footprint product which offered an extremely cost-competitive proposition.

Working closely with Ladybridge Systems, the initial port was completed in a matter of weeks, with only a part-time resource.

For further details, see the Case Study document on the [openqm.com](http://openqm.com) web site or contact Ladybridge Systems. ■



## Ashwood Computer Inc. is offering a NEW Python to jBASE Connector

Programmers can now write web applications using Python. They'll be able to directly read and write jBASE files from those applications.

One customer, doing medical case management, is using the new connector to put a browser front end on a portion of their internal application. They are also using it to integrate their jBASE application with the company's web portal and some of the google / chrome applications they use.

Users may provide their own Python/Django developer talent, or contract directly through Ashwood for the services they desire. This new connector is offered with several different levels of consulting services. You can choose from basic setup and installa-

*Continues on page 14*

# FROM THE PRESS ROOM

*Continued from page 13*

tion services, hourly services and assistance as desired, or contract for a complete customized implementation and programming services offering.

Contact Ashwood for more information and get your questions answered today.

Ready for a live demonstration? Get in touch! Contact Doug Owens at [dougo@ashwoodcomputer.com](mailto:dougo@ashwoodcomputer.com) or call (800) 513-6431 ■



## Tech Company Makes Commitment To Higher Education

Kore Technologies announced that it will be an exhibitor and presenter at this year's Southern Regional Datatel Users Group (SRDUG) Conference on June 9-10 in Dallas, TX. The theme for this year's conference is, "Dancing with Data" and will cover a vast array of topics pertinent to higher education technology.

Kore Technologies' role and expertise in the information technology industry have prompted the decision to attend SRDUG 2014. "We (Kore) provide best practice solutions to our clients. We want to share our expertise with the higher education niche,"

said Keith Lambert, vice president of marketing and business development.

Frank Kertai, partner of Kore Technologies is scheduled to present, "Partner-up with Kore to Learn the Two-Step: SQL Integration and Business Intelligence," which will cover data integration and visualization solutions. Key highlights of the presentation are, Colleague to SQL integration using Kourier Integrator as well as reports, dashboards and graphs with CorVu NG from Rocket Software. As more information becomes available it will be posted on Kore's event page on Facebook.

This conference is one of several events Kore Technologies is attending this year as a part its commitment to higher education initiative.

- Chief Information Systems Officers Association (CISOA) Feb. 2014
- Southern Regional Datatel User Group (SRDUG) June 2014
- California, Hawaii, Utah, Guam, and Arizona Datatel User Group (CHUGADUG) July 2014
- EDUCAUSE 2014 Sept. 2014
- KORE TECH 2/2

SRDUG is a network of information technology professionals in higher education in the Southwest region of the United States. Attendees and members focus on Colleague (Ellucian) products and services and other ways to improve the industry. "SR-

DUG gives us an opportunity to network and develop long-term relationships with members of the higher education industry. It's an important consideration when we make tradeshow decisions," said Kertai. For more information about SRDUG visit [www.srdug.org](http://www.srdug.org).

## About Kore Technologies

Kore Technologies was founded in 1999 as a professional services and software development company. Today, it is a leading provider of enterprise integration, business intelligence and eCommerce Web solutions for MultiValue and Microsoft SQL Server databases. Kore's two main products are Kourier Integrator and KommerceServer. As a partner of Microsoft and Rocket Software, Kore leverages its technology capabilities to provide the upmost services and products to its clients. For more information about Kore Technologies visit [www.koretech.com](http://www.koretech.com) or call 866-763-5673. ■



## UnForm Document Management (DM) Version 9.0

Announcing a major, feature-rich upgrade of the UnForm Document Management Solution, including enhancements

to the full suite of UnForm products. UnForm v9.0 is currently in beta, with the release date soon to be announced. Read more about UnForm DM v9.0 at <http://unform.com/sdsi.cgi?p=unform9>

## Print Manager

- HTML5 driver provides a flexible and powerful document format for active documents, supporting embedded forms, toolbars, external content, and more
- More flexible rule set design, allowing UnForm commands inside of code blocks and unlimited conditional logic ("if blocks) outside of code blocks
- Overlay support to allow uniform PDF images to be the background of any page in any output format
- PDF text parsing engine (for AFO streams) built in, rather than relying on a Windows Support Server
- Barcode improvements, including QR codes, and enhanced features that do not rely on a Windows Support Server
- New daily job logging, and detail levels by type (server, job, etc.) simplifies log management
- Mail reader object, including full message parsing to extract attachments
- Scheduled jobs, for automated jobs run on a timed schedule rather than by command and print stream

*Continues on page 15*



# FROM THE PRESS ROOM

Continued from page 14

- Browser-based design tool
- Cloud-friendly enhancements to licensing and client-server model

## Archiving

- All new desktop-focused, tablet friendly, browser interface
- New internal library structure, including keyword indexing and indexed user-defined fields; conversion and migration tools for the new structure
- Library transaction logging provides more robust and faster corruption recovery
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- Updated library and libraries objects for more rule set capabilities for managing archive libraries
- Marked Documents, different from Marked Images, provides same copy/transfer/export functionality as Search
- Streamlined HTML export

## Server Manager

- Browser-based server manager
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# Using OCR to Perfect Accounting Data Entry

BY NATHAN RECTOR

No Line of Business (LOB) or Enterprise Resource Package (ERP) can live without its accounting and bookkeeping tools and packages. Yet, these software modules are some of the most archaic, monolithic, ugly systems in your business.

When dealing with bookkeepers and accountants, they want speed, but they also want accuracy. Accuracy usually means that they want checks and balances within checks and balances so that the data entered is not screwed up.

The software is slow to evolve because what we have “just works” and that blunts progress. Accounting departments have long understood the value of converting from paper to digital records, and searchable image archives; they are slower to embrace the OCR automation that would benefit them.

Despite the mass adoption of email and user-friendly portals that deliver information to consumers, the electronic interchange between businesses is still largely not used. There are many reasons for this: cost, complexity, laziness, lack of standards. Due to the limitation of implementing these in-

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*OCR, Optical Character Recognition, turns an image into searchable text. While that is all fine and nice for document archives, it takes more effort to turn it into structured data.*

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terchange formats, every two out of three invoices are still sent through the mail, faxed, or sent as a PDF, HTML, or some other static format which creates an unstructured image of the data. Simply, data designed for eyes, not designed for import.

In many businesses, these static formats are entered into a document archive system as they come in and separately — *manually* — entered into the LOB/ERP systems. In my opinion this is a waste of time and resource, and very prone to errors. Our accounting modules have many checks and balances in place to address these errors, but the data entry is still very time consuming. Getting it right the first time is far more efficient.

The classic example I like to cite for OCR is bank statements. Everyone has to balance their checkbook somehow. Wouldn't it be nice to scan the bank statements and have it done for you? This could save hours of data entry.

## **OCR Is Just The Beginning**

While OCR is a common term that developers and bookkeepers understand, it is really only one part of the process.

OCR, Optical Character Recognition, turns an image into searchable text. While that is all fine and nice for document archives, it takes more effort to turn it into structured data. The process of turning the unstructured OCR text into structured data is IDC (Intelligent Data Capture).

The current tools available for IDC use predefined templates to identify the document that is to be OCR-ed, and then it uses those identified regions on the document to generate the structured data. While this gives you text with *context*, even this doesn't take us far enough.

Ideally, Intelligent Data Capture should also be taking this information and validating it against your LOB/ERP. We need to make sure the data

*Continues on page 18*

## UNSTRUCTURED DATA: USING OCR TO PERFECT ACCOUNTING DATA ENTRY

Continued from page 17

captured is correct and accurate. Providing error checking and limited rules to adjust for changing conditions within the digital images adds another level to the accuracy.

### It's Not Really That Complex

This seems really complex when, in reality, it is not as complex as it sounds. The hardest part is training your IDC system to identify the forms that are being scanned. Most IDC systems have a template creation program that allows you map out what to look for and how to extract the information. This is the most time consuming part of the process.

Once you have the data extraction mapped, the next step is getting it into

your LOB/ERP systems to be processed. Many developers consider this to be the tricky part. I don't necessarily agree, but it does require you to decide how, when, and what tools you want to use.

Treat captured information like any other input feed for your systems: validate it. We do that already with our data entry screens, so we have a list of rules for validation embedded in those programs. While it isn't hard to validate and update our systems – we do it all the time – there are a couple questions that need to be addressed first.

### What Do You Do With Errors?

You will get errors; either conversion errors or database errors. Conversion errors include an OCR process turning a '1' to an 'l' or a '0' (zero) into an 'O' for example. Many template programs

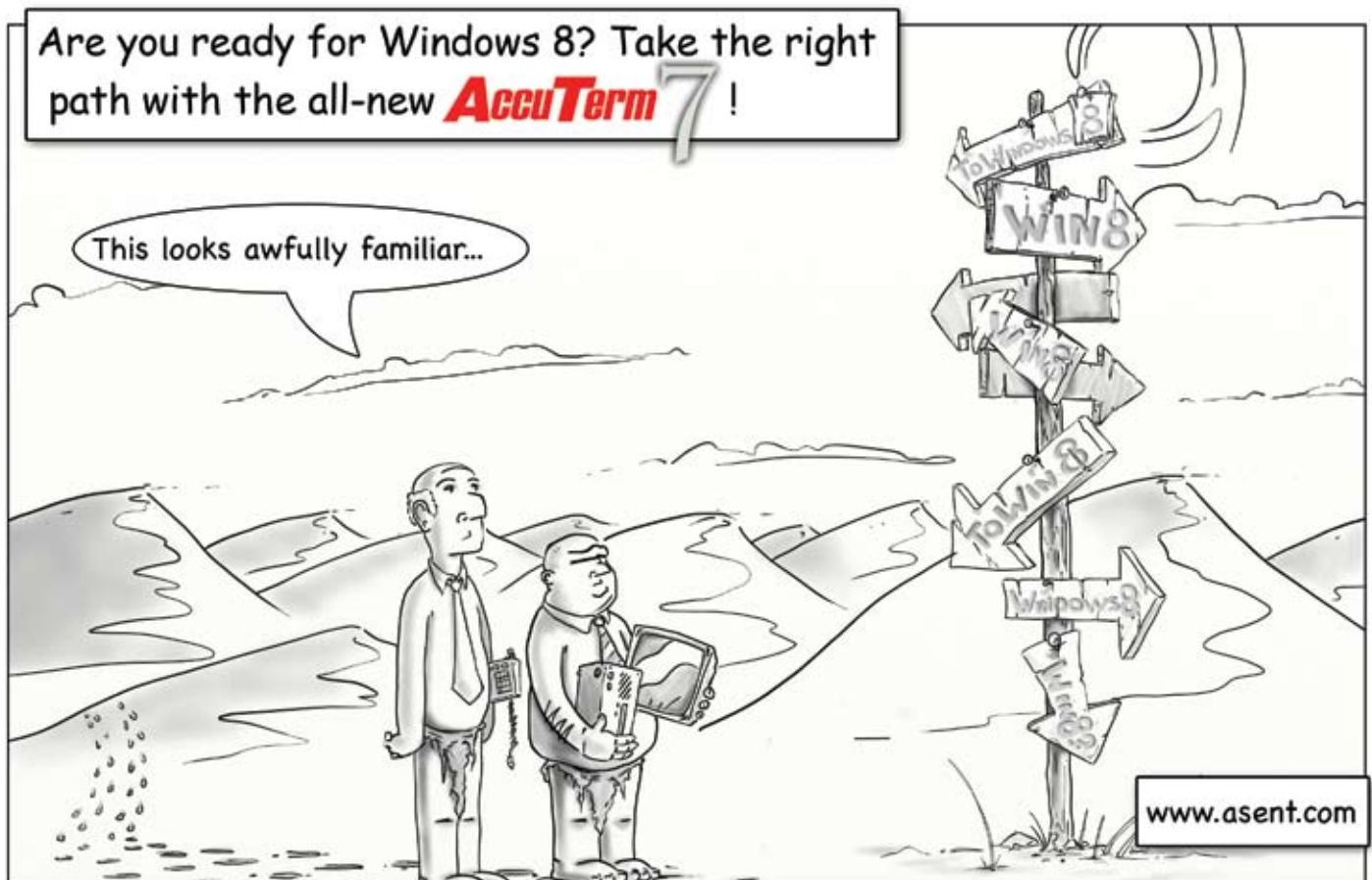
will address some of these OCR errors for you.

So, if you mark a section of your template as numbers only, when it finds an 'O' in the OCR conversion, then it will change it to a '0' (zero). Another simple error correction that IDC software performs is basic spell checking. If there is '0' (zero) in the middle of some letters like 'sh0w', then more than likely this should be 'show', and not *s-h-zero-w*.

Although this helps you when the data is sent into your systems, we still need to validate the information against our data. We would do it for structured data; we have to do it here as well.

I've seen examples of IDC systems that capture the image, extract the information, and then write to the database. Once that is done, it thinks it's done

Continues on page 19



## UNSTRUCTURED DATA: USING OCR TO PERFECT ACCOUNTING DATA ENTRY

*Continued from page 18*

and the information is valid. While this might be okay, depending on your double check procedures, it does not go far enough for today's LOB/ERP software packages. Personally, I never want to let bad data in the door if it can be prevented.

There should be additional checks on each individual data element before getting to your double check system. If the data element is supposed to be a check number, then verify that the check number exists in the checking account database. If the data element is supposed to be a PO number, then validate the purchase order database.

If there is a company name, address, customer number, and PO number on an invoice, then validate that the PO is correct, and the customer number is correct, and if the PO number is for that customer number.

Once you have found errors, what do you do with them? Do you reject the whole document outright? Do you highlight the document where the error exists, and give a user a chance to review and correct the incorrectly converted data?

I don't always agree with outright rejection of the whole document for a single error. If 98% of the data is correct, then the user, or computer, should be given the option to ignore the data or correct the data. Not all data is created equal. Consider which data element has the error.

### How Do You Double Check The Capture?

I've seen examples of IDC systems that would take the captured data, correct

the errors, and then file the information without doing a double check that the information was accurate. Accuracy is more than just error checking.

Let's go back to the bank statement example I mentioned earlier. The process of scanning, OCR, and checking the data capture gets you the majority of the information you are looking for, but it doesn't always filter out all the errors you may want to trap or fix.

A double check system should process the document and then highlight the specific aspect of the document which raised the question. This allows the user to key in what they think is on the document so that we can re-validate against the data that was originally captured against our system.

Remember that not everything can be proved against the database. Sometime the data being captured is not already in the database to be checked against. We need a human element for this. This is a form of double entry error correction to verify that the computer did capture the information correctly. Presenting the questions in a review screen for a human operator allows proper review of the information. The user can see if something is missed that might be required.

Our LOB/ERP systems are very complex, and we cannot always guarantee through unattended automation that the information captured is full and complete, or that we have all the information already in our systems that should be there.

### The Bank Statement IDC

Let's look at the different steps and processes that need to be implemented in order to create a bank statement IDC system.

Depending on your bank, you may be getting the bank statement through the mail or as a PDF in email. Some companies will log into their bank's web portal and download reports that can then be parsed and imported, but in this case we are looking at taking paper statements and turning them into structured data.

If you don't have a document archive system already in place, then I would recommend getting one. It will save you time and storage when you need to access this information again. It is even more important for a small or medium size business to have a digital document storage system, because it costs them more to have someone hunt a piece of paper down than it does in a large company.

Once you have the bank statement scanned, you need to train the IDC system to be able to identify the document and what information is important on the document. This is a one-time process until the bank changes their statements. The reason you need to train the system instead of just letting the user choose is to save time. If the IDC system can recognize the document for the user, then the user can place a stack of documents into a scanner and do more than one process or workflow at a time, because the computer can tell which documents in the unsorted stack are bank statements, invoices, or purchase orders. Many companies only have one scanner for all OCR purposes, so routing documents to the correct people is very important in this workflow as well.

Now that the IDC system knows what document it is processing, it can pull up the data extraction template, ex-

*Continues on page 20*



## UNSTRUCTURED DATA: USING OCR TO PERFECT ACCOUNTING DATA ENTRY

Continued from page 19

tract the bank, account number(s), check numbers, check amounts, check dates, deposits and deposit dates.

You now have structured information. We know how to validate structured data against our check book database. We can validate all the check numbers, check dates, and check amounts. Be sure to check each of these check numbers in your data against the cor-

rect bank. One of the things you don't want to do is clear the wrong check.

You should also capture the subtotals and grand totals on the bank statement. This allows you to total up all the check amounts captured and make sure the information captured totals to the correct amounts.

Once you found the errors from the OCR, present them to the user along with the digital image of the document. Highlight the error on the image, and ask the user what they want to do.

Either before error correction, or after, highlight the statement's grand totals and ask the user to reenter what they see on the image. Validate that total against the total captured by the OCR.

Once you have validated all the information, and had the user review the information, do not discard the image. Send it along to the document archive.

I would recommend saving the document archive ID(s) or reference number(s) with each of your cleared check numbers, or save each of the check number ID(s) within your document archive. Either way, I like to use double linked references just in case something gets broken later on down the road; they are much easier to repair.

### Summary

This type of system is not hard to implement. The most complex part is choosing software to do the OCR and the document recognition. This kind of implementation has more to do with workflow and procedures than it does with technology.

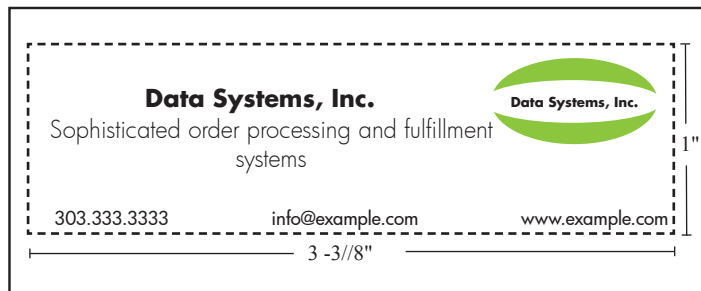
If you already have a digital document archive, you already have the first steps. Your archive should already have the APIs needed to connect your LOB/ERP applications. If they don't, then take a look at our articles on Best Practices for developing external APIs for your MultiValue systems.

If you don't have a digital document archive, look at the MultiValue database aware solutions in your marketplace and keep any eye on additional articles on similar topics. **IS**



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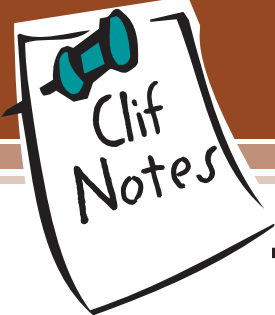
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# The Ice Cream Is Back!

BY CLIFTON OLIVER

**T**he 2014 International Spectrum conference was held April 7–10. It was four days packed with developer technical classes, product demonstration and technical sessions, and tons of professional networking.

There was also the Exhibit Hall where you could talk to vendors about their products, examine new offerings, and network with the other attendees and vendors without having to cut your conversations short and dash off to another session. In addition to that, there was a very important element of the exhibit day that was missing from last year's conference.

*The ice cream social is back!*

Some of you may remember from my post-conference column last year that the ice cream had disappeared and had been replaced by popcorn. My comments were, um, not particularly glowing. Apparently the attendees at that conference were not particularly impressed either. So I am happy to report that the ice cream social returned to overwhelming applause.

I would like to squelch a rumor, however. There was some speculation going around that somehow my Clif Notes column had something to do with the ice cream returning. That is categorically not true. I had absolutely nothing to do with it. My opinion about

whether or not it would be a good idea to drop the popcorn and go back to the ice cream was not solicited. Nor was there any anxiety on Nathan's part that if we were served popcorn, he would again end up as column fodder. Let's face it, my musings, ramblings, and rants are simply not that intimidating.

No. I think it was the torches, pitchforks, and cauldrons of boiling melted butter that got his attention.

Getting serious, I thought that the mix of topics for the daily sessions was very good this year. There were some repeats (including my own) of sessions that were presented previously. But there were a number of sessions on new topics. Now one might wonder why a conference would repeat the same sessions that had been done in a few previous conferences. Let me give you just a little bit of insight.

One of the complaints heard every year is that the sessions are only given at one time on one day. Of course, everybody wants every session to be available at a time that there are no other sessions that they also want to go to. That's understandable. The problem is there is no way to predict which sessions should be given double booking and which sessions should be dropped to make room for double and triple bookings in the schedule. And even at that, there are going to be some sessions that you have to choose between two or

more sessions that you would like to be in simultaneously. The other problem is that if you turn away sessions with different topics to make room for the repeats, now you get complaints of "we're not coming back next year; it's always the same old sessions."

Then factor into this that the conference runs for two years in a row in one location and then runs for two years in a row in another location. In order to try to make the most number of topics available to people who come to a particular location two times, you want to repeat some of the better attended sessions from the previous year so that folks who couldn't attend a particular session due to a time conflict last year might have an opportunity to pick it up this year. But you also have to work in a mix of new sessions so that people who come two years in a row actually have some new valuable information presented. Otherwise they are just coming for the ice cream.

And then you move to the other location. Now what do you do? All new topics, thus denying the attendees who can only come to this location the opportunity to get the information from some of the sessions the previous year? Repeat all of the topics from last year so that the people who come every year have little to justify the travel and the cost other than a bowl of ice cream?

*Continues on page 24*

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## CLIF NOTES: THE ICE CREAM IS BACK!

*Continued from page 23*

I think you can see where this rapidly becomes a rather complex problem in planning. Also realize that all of what I have just said are my suppositions of what some of the problems are. I have never been involved in planning a conference. So while looking at it from the outside of the process I can see how difficult it can be, I have no concept of all of the other factors such as number of session rooms needed, cost of breakout refreshments between sessions, cost of projection equipment per room, etc. And I imagine that even at that I have only scratched the surface.

Let's not even talk about the difficulties of finding knowledgeable people with information to share who are willing to stand up in front of a group and engage in an activity that strikes fear into the hearts of the majority of people polled

in study after study – public speaking. For free.

So they have to look for the balance points, figure out which people have heard what and what they want to hear that they didn't get to hear, arrange the finances, reserve the location over a year in advance, and pull everything together. Of course, they should be able to write an optimization program to help in the process. All they need to do is learn how to predict human behavior.

I'm not holding my breath.

Wait a minute, we forgot about the exhibit hall. That needs to be booked. Vendors need to be solicited and signed up. And we have to order the ice cream. For how many people? What flavors? Toppings? Just thinking about all the details and the logistics makes my brain feel like it is on a continuous tilt a whirl ride! So I'm going to take the easy way out and simply say...

Thank you Nathan. Thank you Tracey. Thank you Howard, Kathy, and the management and staff at the hotel.

An excellent, fun, and informative conference... again. I am looking forward to next year.

In the meantime, everybody stay in touch with each other. Check out the groups available on LinkedIn, see who you can follow on Twitter, and other social media. There's no reason for any of you to feel like you're living alone on a desert island because you're working in MultiValue instead of some other platform. After all, it's not like we don't have the technology.

Now if you will excuse me, I'm going to go put on a white shirt and spill some ice cream on myself. (That always seems to happen.) **IS**

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