

Marketing Software Review

iCentrix Scores Big With Objects

Like all too many technologies, the reality of object-oriented, component-based (OO/CB) systems development has rarely come close to living up to its promise. While both object-oriented programming and software components do indeed facilitate the development of many of today's major systems, neither

The promise of "OO/CB"

of these tools or concepts approaches its potential in terms of flexibility and configurability in the final product. You have to go beyond the tweaking of interface options to see the value in OO/CB solutions. Only if you include business rules and "meta-data," or a data model, in the OO/CB structure do you get a big pay-off.

Component Framework

One of the few companies to have realized this goal in a meaningful way is iCentrix, with its "Component Frameworks for eBusiness Solutions." The company's "Integrated Component Environment," or "ICE™," is a set of

Profile	
System:	Component Frameworks for eBusiness Solutions
Vendor:	iCentrix
Address:	Newpoint Technology Park 11 Red Roof Lane Salem, NH 03079
Contact:	Mr. Bob Collopy
Tel.:	603-893-3922, x. 13
Fax:	603-893-3849
E-mail:	bob@icentrix.com
URL:	www.icentrix.com
Database:	ODBC-compliant
Language:	C++
Platform:	Windows, UNIX
Base Price:	\$20,000 - \$300,000
No. installs:	14

configurable components, designed using a visual object-modeling tool that permits modelling the interaction of the components, allowing them to create components that are tightly integrated yet highly configurable.

The iCentrix Objects are designed to perform generalized technical tasks that enable developers to think and work at a higher level than typical development tools such as Java, ASP, PowerBuilder, VB and others. Instead of writing a

iCentrix Objects

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The Component Frameworks for eBusiness Solutions from iCentrix is an elegant implementation of an object-oriented, component-based (OO/CB) systems development environment. Solutions are developed or configured using the iCentrix components, designed to perform generalized technical tasks, in a dynamic, prototype modeling process. Separating business rules, attributes, and data presentation (or	user interface), iCentrix developers focus on what data elements are required and how they interact with each other (the developer calls the proper object, passes to it the necessary parameters, and determines what to do with the "result set" returned by the object). The three-year-old company has implemented its eBusiness Solutions in marketing, customer service, order processing, purchasing and inventory management, and production and accounting environments for companies like Crown Books, MuseumShop.com, Myteam.com and Selling Shows.

piece of code that connects to the database, for example, developers focus on what data elements are needed and how they interact with the user. The developer calls the proper object, passes to it the necessary parameters, and determines what to do with the “result set” returned by the object.

Major Clients

So far, the three-year-old company has implemented its eBusiness Solutions in marketing, customer service, order processing, purchasing and inventory management, and production and accounting environments for companies like Kestral Communications, Crownbooks, and MuseumShop.com.

**When To Hold 'Em,
When To Fold 'Em**

iCentrix very rightly considers the toughest part of any object-oriented development environment to be defining both the objects and the relationships among them. In other words, not only do you need to determine the functionality for a system to work effectively, but you also have to figure out how best to encapsulate that functionality in efficient objects that coordinate properly to achieve the system's objectives. The objects can't be too bloated, nor can they be too granular, if the system is to retain its flexibility, extensibility, and scalability.

Easier said than done, that's for sure!

**Business Rules
Logic**

“Each object encapsulates systems logic, and the relationship between the objects is based on business rules logic,” notes iCentrix President Steve Keller.

“Understanding the implications of all the logical relationships is where the really difficult challenges are.”

**Prototype
Development
Model**

iCentrix believes that the traditional “waterfall” development approach, in which requirements and design are followed by coding and testing to achieve a final product, is ill-suited to OO/CB development. Their own approach relies on creating an early prototype of objects and business rules based on an extensible data model and definition of user roles. This usually takes a few weeks, not months and years. Further development is then undertaken based on user feedback from interacting with the prototype.

**Stored
Procedures,
Component
Frameworks**

iCentrix uses stored procedures to encapsulate business rules, which define what things are, how things connect, and what the data means and can do. Each stored procedure is triggered by one or more objects. “Get price,” for example, can be triggered by a promotion object, a product object, a business rule, or meta data about an order.

**Component
Framework
functions**

The company's patented Integrated Component Environment organizes components, which are written in C++, into “component sets” or Frameworks dedicated to primary system functions, which include:

- · Data presentation and forms
- · User accounts and access control
- · Business operations and workflow

- Interactive reports
- eCommerce order entry and payment processing
- Customer service and fulfillment
- Administration

All components are designed for a Web-based environment, which means that the user interface is not only highly configurable, but changes dynamically based on what the user is doing at any given moment. The Web interface is managed through a fast and simplified Common Gateway Interface using executable code, not PERL, like most CGI utilities do (which is a much slower technology). There are also no Java servlets or other utilities to slow the system down.

Web-based environment

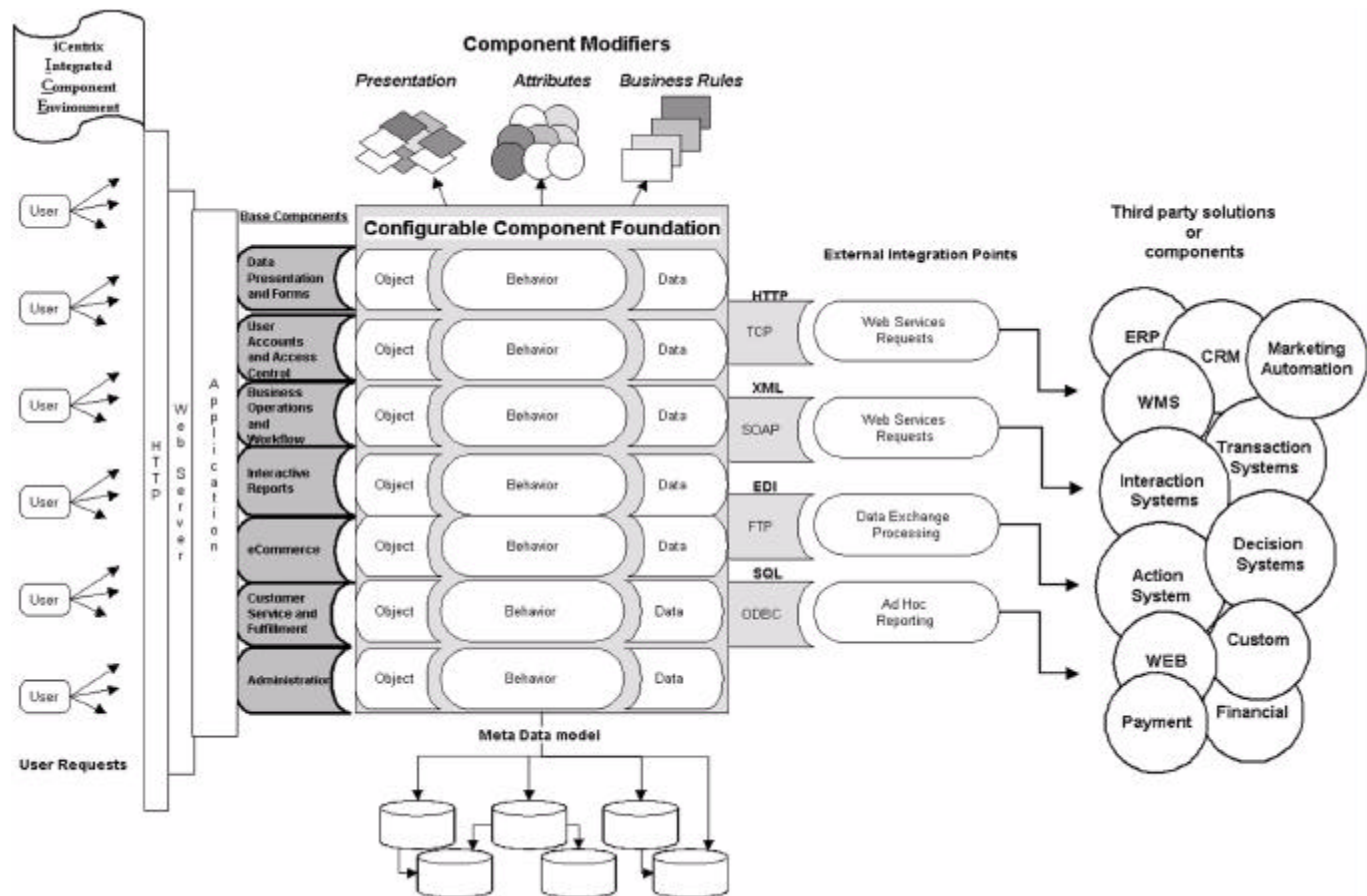


Figure 1: ICE Component Modifiers

The component framework runs on a Windows IIS Web server, or alternatively on an Apache server on Unix or Linux, with any ODBC-compliant database.

ODBC Database

The components function in conjunction with relational databases or at the “meta data” level to create iCentrix's data-driven applications. Figure 1 (above) shows an example of a typical configuration. The “Component Modifiers” shown in the diagram handle the presentation of data, the attributes of the data, and the business rules. The presentation modifiers invoke presentation macros to display appropriate

Data-driven applications

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data on the Web site according to interface criteria set up for the application, while the attribute modifiers change features of the components, including the type and structure of the data each one uses. Attribute modifiers can also be used on an ad hoc basis to change how a component responds to a particular request, without altering its default settings. The components can be controlled by values of attributes or dynamically reconnected to other components to customize the functionality.

Data exchange protocols

The Integrated Component Environment can be integrated with any number of external applications via a variety of methods and protocols, including TCP, HTTP, SOAP XML, EDI, FTP, SQL, or ODBC data exchange.

Applications

The Integrated Component Environment is highly configurable, which is the whole point. In implementations that iCentrix has done, the system has been set up to handle a dynamic online product catalog, order entry shopping cart, transaction processing (including fraud screening rules), order fulfillment, order notification, merchandise management, business rules for promotions, personalized shopping, multi-dimensional pricing, and vendor management.

No "WMS" functions

Note, however, that the "fulfillment" component of iCentrix does not encompass a "Warehouse Management System" with location or pick/pack management. It could be configured to do so, but has not as yet been. The systems support for fulfillment houses consists of order management and customer management functions that a typical WMS cannot accomplish.

***Hosted solutions/
third-party service
bureaus***

Given the Web-based nature of the iCentrix solution, it lends itself well to hosted solutions and remote customer service reps or other remote access applications. Indeed, iCentrix has set up a formal "fulfillment Partner Program" that provides systems support for call centers and fulfillment distribution centers (either in-house or third-party).

MuseumShop.com

In the case of MuseumShop.com, administrative personnel at MuseumShop add and remove products, run promotions and sales, add new partners and vendors, track sales, monitor traffic and perform customer service through a web based interface. Their museum and supplier partners, in turn, have secure remote access to view their own products, inventory, orders, sales, and history. The system supports management of products and related sales from multiple vendors on a single order, plus distributed fulfillment and customer service from multiple service bureaus. It also creates monthly financial statements and interfaces with a number of financial, warehouse management, and payment systems.

Myteam.com

Similar distributed access and multi-supplier functionality has been adapted to Myteam.com for its online amateur sporting goods store.

Selling Shows

An extension of the ICE information management functions was employed for another iCentrix client, Selling Shows, which produces and manages a series of trade shows for the food distribution industry. The solution developed by iCentrix

for Selling Shows (see Web screen sample, figure 2) supports everything from providing show information to prospective sponsors, exhibitors, and attendees and telemarketing activities to attract new participants, on the one hand, to the management of show exhibit space, setting up show deals, taking and processing orders from the trade show floor for the exhibitors, on the other, plus providing Web-based reports on all activity to all participants on a secure, need-to-know basis.

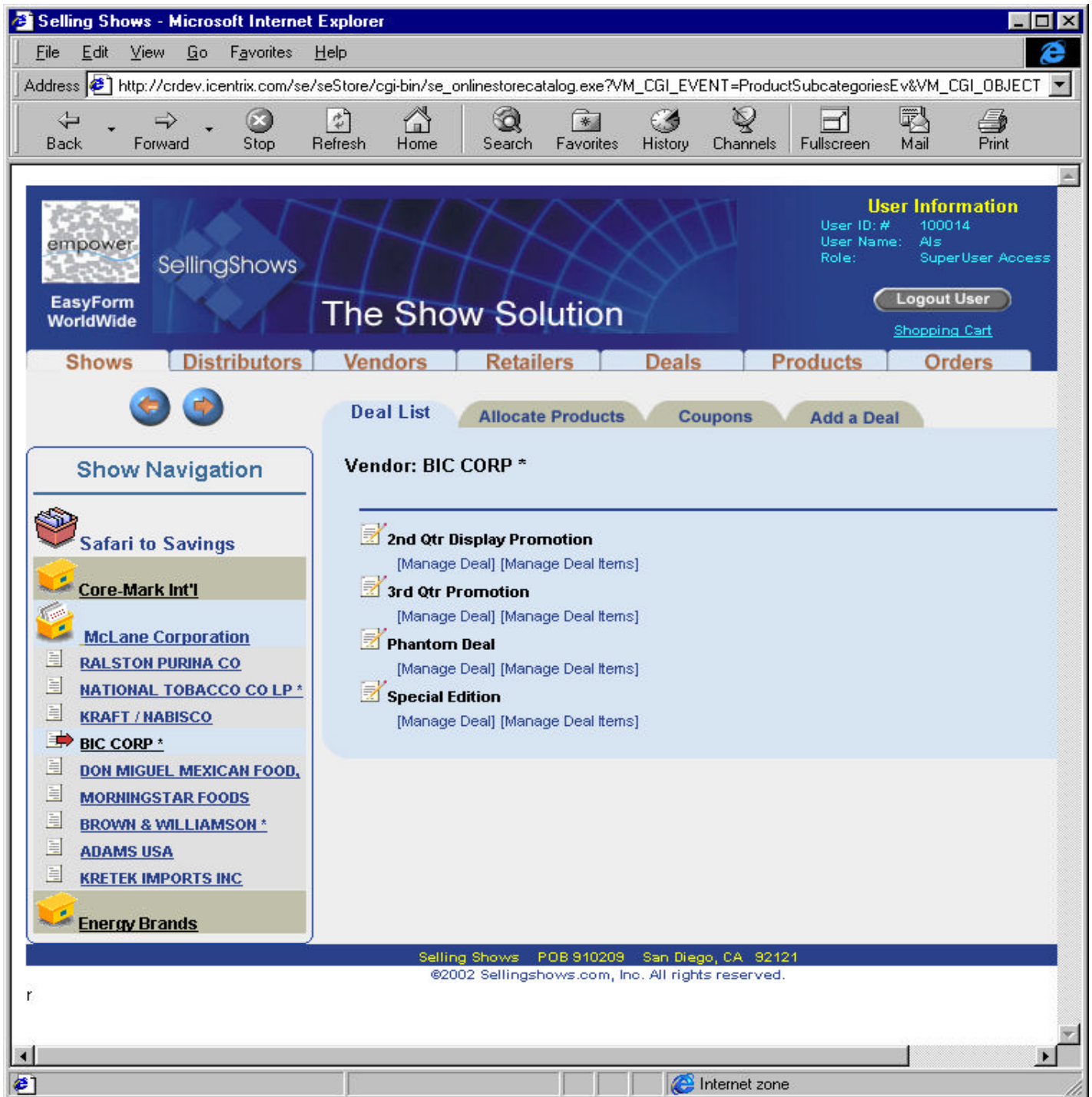


Figure 2: Selling Shows Web Page

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iCentrix has a lot going for it. Its implementation of OO/CB technology is far ahead of anyone else in the direct commerce field. This gives the systems the company creates a dynamic flexibility that is virtually impossible to achieve any other way. Their prototype-based approach also assures that systems are produced both quickly and in response to actual user feedback, reducing the surprise-and-frustration level of the typical development environment.

Those are the “pros.” The “cons” are that you are not acquiring a “packaged” solution with iCentrix. While its development process is streamlined and efficient, you are required to undertake that development in order to make use of the iCentrix tools. This may not differ much from the ordinary “set-up” requirements of many other systems because it is a prototype development process, but it is a development process nonetheless.

With a half dozen of these under their belts, iCentrix has proven its ability to navigate that challenge; you have to be prepared to navigate it with them.

Of course, if you can't find a “packaged” solution that meets most of your critical requirements, then development is absolutely essential, and the ICE framework is likely to be an appropriate platform on which to pursue it, so long as you are comfortable with a Web-based solution. Some companies may prefer a client/server or other non-TCP/IP operating platform (for whatever reason), in which case iCentrix is probably not your cup of tea. Security, though, is not an issue with iCentrix, which uses Secure Socket Layers plus a variety of encryption algorithms to safeguard all data and database access.

Finally, while the company has specialized in working with direct commerce clients, its experience in the field is still in the evolutionary phase. I believe they understand the nature of the business, and can certainly accommodate a broad spectrum of order management and customer management requirements. They will certainly apply their experience in general to your situation specifically to optimize and streamline an implementation. But their expertise is fundamentally in the technology, which means that if you have a very good idea of what your business needs are and what you want the system to do, iCentrix can probably do it. If, on the other hand, you are looking for a systems vendor to provide guidance in terms of functionality, you are probably not playing to the company's strong suit.

The bottom line is that with its OO/CB Web-enabled Integrated Component Environment, iCentrix can implement innovative, flexible approaches to customer management and order management that would likely be much more difficult to develop with a standard systems approach (where customized modifications can be difficult to support). Their “rules-based” component management also imposes discipline on the development process that serves as both a “roadmap” and a “safety net.” By offering highly personalized promotional and sales environments, Web pages, and interfaces, iCentrix does a good job at leveraging a lot of the Web's potential to turn direct commerce into an interactive and dynamic relationship between merchant and customer. ❖

Conclusions

Streamlined development

A track record

Secure, Web-based solutions

Technology expertise

Innovative, flexible approach
