



## **Business Rules for Business People**

*Dynamic Business Rules Solutions  
For Customer-Driven Applications*

**Authored by:**

*David Kelly*

*Upside Research, Inc.*

[www.upsideresearch.com](http://www.upsideresearch.com)

## Contents

### ❑ **INTRODUCTION**

*This white paper provides a perspective on the challenges that traditional business rules engines and technologies face in addressing today's dynamic business needs. It examines a number of issues driving today's need for greater business agility. In addition, this paper looks at the new business rules requirements needed to bring processes and applications to the edge of the business to help organizations meet rapidly changing user and customer expectations and needs.*

### ❑ **MEETING DYNAMIC REQUIREMENTS**

*Business logic and business rules need to be pushed from centralized, monolithic applications out into appropriate components that can be managed locally. Why? Because organizations need to respond more quickly to customer or partner requests. The creation of more compelling applications (dynamic sales pricing applications or customizable customer needs analysis applications, for example) will help them successfully meet ever-changing market demands.*

### ❑ **BUSINESS RULES ARE A GOOD IDEA, BUT...**

*Business rules solutions are the logical evolution of leveraging resources. They remove the silos of rules that are hard coded across separate applications and enable agility.*

### ❑ **DYNAMIC BUSINESS RULES FOR CUSTOMER-DRIVEN APPLICATIONS**

*Unlike traditional business rules solutions that focus on back-office, straight-through processing scenarios, newer, dynamic business rules solutions address customer-driven, front of the value chain applications. The front office is where interactions between an organization and its stakeholders occur. It's driven by a set of variable, complex, rapidly changing requirements.*

### ❑ **BENEFITS OF DYNAMIC BUSINESS RULES**

*For most organizations, there are compelling business benefits to using this dynamic business rules approach, including: enabling higher levels of customer satisfaction; reducing time to market; enabling better product or service differentiation; empowering and managing (through rules) applications for mobile or untethered users.*

### ❑ **INTERACTIVE BUSINESS RULES WITH RESOLUTION iR™**

*With its patented dynamic interactivity, the Resolution Interaction Rules Platform™ (iR) enables organizations and business users to easily and rapidly create, execute, and maintain the business rules that support front-office applications. Such applications include CRM, BPM, mobile sales force sale configuration applications, dynamic workflow processes and much more. Resolution iR enables organizations to add interactivity within the application itself, so that users can start anywhere and go anywhere. In addition, iR provides users expert guidance on potential choices as they move through the application. Also, the iR rules creation process eliminates code generation during rule creation. Rules are accurate from the start. This means there is no maintenance/support issue. Since an aspect of agility is speed, this is important.*

### ❑ **THRIVING ON CHANGE**

*With the right type of dynamic business rules environment, organizations can achieve greater organizational agility, flexibility and speed to change.*

## INTRODUCTION

Today, business success is not just a matter of how effectively an organization can create or sell products. It's also about how fast it can react to changing market conditions. Speed, flexibility, and organizational agility have become critical success factors for all companies.

Many companies are experiencing some of their fastest rates of change and the most important process requirements at the edge of their business or the front of the value chain. That's where the business connects directly with customers, suppliers, and partners. It might be through something as simple as an application used to interact with suppliers or something as complex as customer self-service or B2B supply chain integration processes.

Improving business agility increasingly depends on the ability to quickly and easily modify the decisions and business logic that drive and manage its fastest changing and most dynamic business processes.

As a result, business processes and applications must be brought out to the front of the value chain in order to meet rapidly changing customer requirements, increased user expectations, more competitive market pressures, coupled with the need to increase revenue, customer satisfaction, and other key performance indicators. Unfortunately, most companies have realized too much of their business logic is tied up in applications that are difficult to modify rapidly and adapt to the challenges at the edge of the business.

That's because business rules technologies traditionally focused on providing greater flexibility for back office applications. Now, however, these traditional rules solutions have proven inadequate at meeting the challenges constant change presents. They're simply not designed to address the rising demand for agility in front office applications. The architecture of traditional rules solutions can't cope with the more dynamic environments found in customer-driven applications.

For example, most organizations need CRM applications, sales configurators and other dynamic front office processes to provide users and customers with the flexibility to explore a myriad of options and outcomes as they progress through a business process. Business rule solutions should help drive this agility. Yet, because of their architecture and original purpose, traditional BRE solutions limit users. Such BREs can't provide dynamic interactivity—what people refer to as “start anywhere, go anywhere” capabilities.

An example: You may think the most important thing when choosing a computer is screen size. Why not start there and choose other options further on down the line? Why does a customer have to start or to go where the company traditionally dictates? Why take a straight-through, single-path approach? This ultimately

translates into lost revenue, low customer satisfaction and decreased opportunity for companies.

What's needed is a new business rule approach that dynamically crosses a wide range of front office business processes and applications: from stand-alone or embedded applications to business processes crossing application and business boundaries. Think of it as dynamic business rules solutions for customer-driven applications.

This white paper provides a perspective on the challenges traditional rules engines and technologies face in addressing today's dynamic business needs. It also focuses on the new business rules requirements needed to bring processes and applications to the edge of the business, enabling organizations to rapidly meet changing user and customer expectations and needs as well as to run more effective organizations.

### **MEETING DYNAMIC REQUIREMENTS**

Traditional business boundaries are falling just as customer and user expectations are rising. The "edge" of the business—external self-service applications, internal CRM and customer-service applications as well as B2B connections and process integrations with business partners—is now the most dynamic, visible part of the IT infrastructure.

Until now, however, the front office has eluded complete automation: It's difficult to capture its inherent complexity and variability. Unlike back office operations, which are straight through, repeatable, transactional processes, the front office is inherently dynamic. But it's the back office where traditional rule engines have focused on adding value.

To enable faster, better responses to customer requests, to integrate more rapidly with business partners, or to create more compelling applications that meet changing market demands, business logic and business rules need to be pushed from centralized, monolithic applications out into appropriate components that can be managed locally—often at the edge of the business—by the business user. Moreover, they must be deployable quickly to reduce time to market.

Such dynamic and flexible business applications empower anyone who interacts directly with organizational stakeholders: sales people, customer service representatives, employees looking to quickly and efficiently address customer requests, among others. This benefits customers and typically pays off for companies in the form of reduced operational costs. By slicing the time it takes to satisfy customer needs, organizations raise the level of customer service that comes from providing expert advice without adding headcount.

Growing user sophistication is also pushing the need for agility at the front of the value chain. Users are getting comfortable with technology. As this familiarity grows, so does the demand for a better experience. For example, instead of simply filling out an application and waiting for a response, customers now want flexibility to fill in a variety of responses to gauge the best solution for their needs. They want choices and they want advice about those choices. Putting a live person on the line is expensive. Having an application with built-in intelligence is not.

Or, consider a manufacturer that offers a complex product line with hundreds or thousands of product combinations. What's the best way to guide its distributors and salespeople to sell higher margin items rather than simply selling the products with which they're most familiar? While many organizations such as financial services, insurance, and retailers have evolved their applications over the past few years to handle these types of requests, the challenge remains: Find a cost effective, easy to use, responsive way to do this.

How can organizations build into their business processes and application effective ways to respond to change? In other words, what's the best way to affect the types of changes needed to keep up with the dynamic pressures of the marketplace?

Most organizations agree: The answer is to increase business agility. This typically means moving decision points and business rules towards the "edge" of the business, where change is most prevalent and apparent.

For example, using a business rules-based portal application, a custom manufacturer reduces order-to-fulfillment time, achieves 100 percent order accuracy, and makes it faster and easier for salespeople and distributors to place orders. In addition, the application ensures the accuracy of the customer configurations ordered.

Or a health care insurance company experiencing increasing customer churn and policy turnover deploys an interactive rules-based solution. The result is a competitive quote that has reduced the discrepancy between the initial rate quote generated by sales and the final proposal that underwriting generated. How is this done? By enabling sales with an interactive rules-based application that closely aligns with the business model its underwriting department uses. These applications can

### **BUSINESS RULES AREN'T JUST FOR ENTERPRISES ANYMORE**

Enterprises aren't the only organizations that need to consider the benefits of dynamic business rules. Many independent software vendors (ISVs) face the same dilemmas as companies—how to create solutions that can help drive front-office business processes and be adapted quickly (and by business people) to changing market requirements.

Dynamic business rules environments can help ISVs in multiple ways, including: enabling them to deliver applications that are easier to customize, modify, and adapt over time; providing ways to enable business users to control their applications; and facilitating faster and more complete integration with customer-driven applications.

consider all the choices a prospect or customer faces, provide expert guidance based on the options, and then generate a more accurate quote based on this information.

From these examples, it's easy to understand the need for a new approach to business rules based on the ability to handle ever-changing, complex, and variable input. This is a key requirement for meeting the need for increased agility.

### **BUSINESS RULES ARE A GOOD IDEA, BUT....**

For years, some organizations have used business rules technologies to enable more dynamic business processes and decision-making.

In theory, business rules solutions are a great idea. They help automate, centralize, and manage the hundreds of business decisions and rules that have ended up (one way or another) in software silos throughout the organization. And they allow organizations to define and deploy business-oriented, rules-based solutions (e.g. "A premium customer is a customer with an account balance over \$10,000").

In fact, business rules are an inherent part of creating software applications. Regardless of whether a company specifically uses business rules technologies or not, it's explicitly defining and codifying business rules in any application it creates. However, without using an explicit business rules solution, organizations are left with applications that:

- Contain lots of scripting or application code to define business rules, creating silos of business logic embedded in individual applications.
- Are hard to modify since the business decisions and rules are buried in the application code.

While business rules systems enable efficiency, they don't necessarily have the architecture to support today's business front office requirements. Traditional business rules technologies are designed to solve "back office" problems such as batch-oriented mortgage applications. Such problems are processed in a linear fashion, without any support for the types of dynamic change that today's customer-driven, front office applications demand.

A good example is a business rules-driven mortgage loan application. Designed to be processed from start to finish, all at once, it won't allow the customer to alter the amount of loan request, change the down payment information dynamically, or request alternative payment methods during the processing of the application. Developer intervention is required to modify rules or modify the associated applications. This was and is expensive and time consuming.

Traditional business rules solutions have a number of other fundamental limitations that make them much less suitable for front-office, dynamic applications. Among others, they:

- Are transaction oriented and run completely through, from top to bottom.
- Require developers/programmers to make changes to the application logic and even business rules.
- Are not designed to handling problems that might start at any point or go to any point (such as customers who want to dynamically alter their mortgage loan applications).

What's needed is a business rules solution that complements these back-office rules approaches. Built specifically to handle the complexity and variability of the rapidly changing front office environment, a dynamic rules solution enables companies to run more profitable, customer-centric, efficient organizations.

## **DYNAMIC BUSINESS RULES FOR CUSTOMER-DRIVEN APPLICATIONS**

### ***BEYOND THE LIMITATIONS OF TRADITIONAL BUSINESS RULES SOLUTIONS***

While most organizations know they need to become more agile and dynamic, they face a big challenge: How can they create an IT infrastructure that can handle the dynamic requirements that customer-driven applications demand?

With the right technologies, this can happen. Business rules engines are one of those key technologies that are allowing organizations to deal with change effectively and efficiently. By using business rules technologies that enable dynamic change, organizations can modify the business rules faster than ever before and enable their applications and employees to react to changing business requirements.

*But enabling agility and flexibility in customer-facing applications requires more than a traditional business rules solution.* Front-of-the value chain/edge-of-the-business applications have a number of specialized requirements that organizations need to address to gain agility and flexibility. These include:

- **The ability to deal with high variability.** Customer-driven applications can vary considerably from application to application, making re-use difficult and development expensive. Moreover, they need to respond to the wealth of diverse needs of their customer base.
- **The ability to handle high complexity.** Customer-driven applications tend to have a high degree of complexity or sophistication and may require on-going modifications or adjustments to meet customer requirements. In addition, they need to answer customer's complex questions. In a Coordination of Benefits scripting application, for example, customer requirements are varying and complex. So applications must ensure that the

right questions are asked at the correct time within the process so that the insurer delivers accurate and timely payments.

- **The ability to be inherently highly dynamic.** Customer-driven applications tend to change frequently and have widely varying requirements. Can the application handle the stress?

If your organization is facing the need to create more customer-driven applications that can meet these types of requirements, a key component of the solution will most likely involve a dynamic business rules solution.

#### ***THE MAKINGS OF A DYNAMIC BUSINESS RULES SOLUTION***

What actually makes a business rules solution “dynamic?” What characteristics enable a dynamic business rules solution to support business agility by generating customer-driven applications?

- **Dynamic interaction.** Customer-driven business rules solutions need to enable dynamic interaction during rules processing. They need to support the ability of the application (or users) to redefine the goal or reset the requirements without breaking the decision making process or requiring that the user start all over again. Unlike traditional rules applications, today’s front-office requirements dictate that business rules systems support the creation of applications that can start from any decision point and reach any goal without restricting the user. This type of dynamic interaction capability is particularly important if an organization wants a business rules service to provide value both within traditional IT architectures as well as in emerging IT ones such as a Services-Oriented Architecture (SOA). The ability to invoke dynamic, front office rules as a service within an SOA environment is becoming an increasingly important requirement for effective management and centralization of business decisions and logic. Regardless of the architecture, however, the business need for agility remains.
- **Elimination of coding requirements.** Naturally, to enable faster business change, modification to business rules must be completed by business users—not programmers or IT developers. The elimination of code generation in the rules creation process is also important. This takes rules testing and maintenance out of the process altogether, thereby speeding up time to deployment and, consequently, time to market.
- **They enable constant change without breaking.** An important advantage of a front office business rules solution is that it can be modified and changed without breaking the rules or decision process. A business process must support constant change and revision of the goals without breaking the rules—something that back-office business rules systems are not designed to accommodate. Typically, traditional rules solutions are code-based and therefore run on a rigid, linear architecture.



- **They can be deployed anywhere.** Implementing business rules-based applications at the edge means deployment flexibility, from desktops to laptops to mobile and wireless devices. Therefore, the footprint must be small enough to accommodate all deployment possibilities so it can function in an untethered environment.
- **They carry minimal infrastructure requirements.** Complementary to the ability to deploy anywhere, implementing business rules in front-office environments requires a solution that has minimal infrastructure requirements. It must not require massive server capacity or involve extensive layering into an existing infrastructure to be effective. If a business rules solution calls for extensive support and maintenance, it is simply not going to be agile or flexible enough to meet rapidly changing front-office requirements. Like traditional business rules solutions, it will carry a heavy cost in time and resources to support and maintain.

Dynamic business rules solutions complement existing, back-office business solutions, enabling organizations to retain any existing investments and skill sets already deployed.

### **BENEFITS OF DYNAMIC BUSINESS RULES**

Organizations benefit significantly from dynamic business rules technologies when they have processes that: require dynamic decision points; have process steps that will vary over time; or have an environment that is highly variable, highly complex, or highly dynamic. (Financial services applications, an online portal, or call center applications are a few examples.) In addition, dynamic, front office business rules solutions can be particularly valuable since they reduce the time required to make modifications to applications. This enables not only more rapid change of existing processes without IT involvement, but also allows organizations to define standard business rules (or rule services) that can be used consistently across processes and business applications

For organizations, there are compelling business benefits to using this dynamic business rules approach, including:

- Higher levels of customer satisfaction
- Reduced time to market
- Better product or service differentiation
- Empowering and managing mobile, untethered applications

For IT departments, there are also a number of important benefits:

- Less involvement in the maintenance of the rules and rules-based applications, freeing IT to concentrate on more strategic projects

- Code-free, business-driven modification of business processes and rules means a lower cost of maintenance
- Greater efficiency and IT productivity

### **INTERACTIVE BUSINESS RULES WITH RESOLUTION iR**

Business rules and process management are critical components of an IT architecture that allows an organization to respond efficiently and effectively to today's highly competitive business environment. The Resolution Interactive Rules Platform™ (iR) from Resolution EBS is an example of a front-of-the-value chain, rules-based solution that enables organizations to meet dynamic customer-driven application requirements today.

Resolution iR is designed for deployment in both enterprise and ISV OEM applications. The solution is comprised of two components: the Resolution iR Engine, which executes business rules and logic and enables interactive end user applications; and Resolution iR Manager, which is used to define and manage the decision logic.

Features of the Resolution iR Solution include:

- **Rapid time to ROI.** Its patented technology eliminates all coding from the rules development and deployment process, cutting out the expense and time it takes to generate rules and applications as well as maintain and support code testing and maintenance. One leading safety equipment manufacturing customer experienced 90 percent reduction in order processing time and 100 percent elimination of order errors.
- **Dynamic interactivity.** Resolution iR supports dynamic interactivity during rules processing, allowing users to alter conditions and goals without breaking the decision procession or application.
- **Support for "untethered" and intermittently connected devices.** For example, Resolution iR can be used by field sales force for sales configuration while at customer sites, with or without an Internet connection.
- **Extremely small runtime footprint.** At approximately 150k, the Resolution runtime engine can be deployed on any browser supporting Java 1.2 or above. It can also be embedded into existing sites or applications.

With its dynamic interactivity, Resolution iR enables organizations and business users to easily create, execute, and maintain the business rules that can support front-office applications with rapidly changing needs and requirements, such as CRM and BPM applications, mobile sales force sale configuration applications, and dynamic workflow processes.

## THRIVING ON CHANGE

With today's changing business requirements, it's difficult for companies to accurately and reliably predict the future. But they can become more adept at managing the change that takes us there. Being able to efficiently and effectively do this is especially important when it comes to business-critical front-office applications and business processes at the "edge" of the business, where activities and business requirements are highly dynamic, very complex and extremely variable. As companies increasingly seek to push applications to the edge to gain operational efficiencies, higher levels of customer satisfaction, and greater revenue opportunities, the front office becomes the center of the business universe.

Therefore, both organizations and software vendors need to build broader and more flexible rules-based solutions that can meet the challenges of the front office. Having business users define and manage rules is only the first step. An effective dynamic business rules solution needs to support the constant change and revision of goals and dynamic interactions with users, as well as have the ability to be deployed anywhere: from mobile computing devices with limited memory and platform abilities to high-end servers capable of meeting the needs of thousands of users.

Resolution iR is one example of a dynamic business rules solution that enables business users to easily create, execute and maintain business rules that drive interactive processes such as sales configuration, CRM, BPM, self-service portals and other front office applications and workflow processes, as well as supports the platform flexibility requirements dictated by customer-driven applications. Like a global positioning system or GPS, Resolution iR pivots around users, giving them the freedom to change their minds, offering them advice at decision points and getting them to their goals rapidly and safely.

A dynamic business rules solution for customer-driven applications enables organizations to effectively manage and deploy a wide range of customer-facing applications—everything from stand-alone or embedded applications to business processes crossing application and business boundaries. With the right type of dynamic business rules environment, organizations can achieve greater organizational agility, flexibility and speed to change.