A new approach in Business Process Management

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Abstract

The new wave of BPM (Business Process Management) is not Business Process Reenginering, enterprise application integration, workflow management or another packaged application – it's the synthesis and extension of all these technologies and techniques into a unified whole. This unified whole becomes a new foundation upon which the enterprise is built, an enterprise more in tune with the true nature of business processes and their management.

In a competitive economy, where margins continue to narrow and the pressure to respond to market shifts is greater than ever, the business rules approach is a great paradigm shift toward the process-managed enterprise and a significant enabler for reinventing ERP and the whole enterprise applications system.

1. INTRODUCTION

Over a long period of time, enterprise applications providers have made a remarkable progress in assuring an easy (as possible) implementation and some pre-implementation alternatives. Indeed, leading ERP systems now offer broad functional coverage, with vertical industry extensions; ever-improving technical architecture; training, documentation, implementation, and process design tools; continual enhancements; global support and so on.

The promised flexibility of today's "standard, best-practice, configurable" applications actually means choosing from a list of existing, predetermined options, and if the required option does not exist in the vendor's menu, there is no flexibility available (Thompson, 2006). These applications attempted to eliminate the need for modifications. In reality, the majority of ERP customers are still modifying their

systems. Very few organizations really run applications as they were implemented, since every business changes constantly, in small or large ways.

Successful enterprises are increasingly taking on new business models and business processes in an ongoing effort to overcome the competition. The source problem is the incompatibility between the desired agility of the business and the static underlying information system – most current commercial ERP systems are architecturally imperfect, inflexible, and embedded in outdated concepts of pre-implementation flexibility and post-implementation rigidity. The main explanation resides in the *material-centric nature* ("make, move, maintain") of both the organizations and the application software in the 1990s as well as in the first years after 2000. The typical information system requirement has traditionally been a common group-wide process control and reporting system. ERP systems accomplish their mission in "material changes", because they easily perform modification and augmentation of machines, operations, materials, warehouses etc.

The above described circumstances set off a few associated courses of action (they do not exclude each other):

a) *Mend the traditional application software*. Important players in the ERP market made attempts to enable post-implementation flexibility with their new product versions through improved product connectivity and openess, role-based user access and communication, improved analytics and reporting tools, user-definable processes and workflow modeling. These efforts assure flexibility, though not always in the areas most important to the customer.

b) *Change the organizational structure by "design for people"*. By assuming that flexibility requires a structural transformation in organizations and their information systems, the enterprise reinvents itself, becoming a people-centric organization ("staff, source, serve"), in order to manage knowledge, skills and intellectual property.

c) *Switch to service-oriented architecture (SOA)*. Further than being a new technology, SOA supports the alignment between the implementation of IT applications and the design of the business. This provides strategic business value because the key to long-term success is business flexibility, and strategic implementation of SOA provides IT flexibility that lines up with the ways in which the business is likely to change.

d) *Build for change using the business rules (BR) approach*. Building for change is concerned with the technology's role in making organizations more flexibile, adaptable, and agile and it ranges from leveraging BR and BPM software to make processes more dynamic, to speeding collaborative software development with new practices and job roles.

2. EVOLUTION OF CONCEPTS AND THEORIES: BPR, BPM, BR

In the 1980s, organizations used *business process reenginerring* (BPR) to improve productivity, quality of service, and cost effectiveness by making radical changes within the processes, based on IT solutions. The concept of reengineering business processes (Davenport, 1992; Hammer and Champy, 1993) led the information system implementation wave in the first place.

The BPR approach of trying to change everything at once seems a bit extreme – few enterprises are interested in radical, clean-sheet-of-paper process design. The practical need is to continually refine and improve key business processes (Bendoly, Jacobs, 2004). In order to maximize and enhance the value of their enterprise applications, organizations should focus three value drivers: integrate, optimize, informate (Davenport et al, 2005).

Experience showed that ERP implementation does not ensure the full integration of information and processes. For most organizations, integration is an ongoing process that continues long after implementation of the core ERP functionality. Certainly, ERP (integration projects, in general) proved to be a journey, not a destination.

Another huge difference between the BPR of the 1980s and the BPM of the present is the fact that BPR involved hard-coded process changes. Organizations not only needed programmers instead of business users to implement these changes, but they were time-consuming. Technologies for process automation, document management, etc., were independent of each other, and could only be integrated through coding. This made integration more difficult than it is now, resulting in it often not being used at all.

When pure-play BPM vendors arrived on the scene, they created a product whose components were already integrated with each other to form one cohesive

solution. These vendors focus on the business side of the organization, creating a user-friendly interface, and involving business analysts in the entire cycle of process modeling and implementation – not just in requirements gathering and user acceptance testing. This means that business users can apply changes more efficiently without relying on the IT department, because changes are not hard-coded and usually do not require programming skills.

3. THE BUSINESS RULES APPROACH

Like human behavior, businesses also make decisions based on facts, and the quality of those decisions is based on the quality of the logical rules. For a business to make consistent decisions, it relies on consistent, high-quality rules and facts that are available to decision makers. These rules and facts are known as business rules. In a large organization there are probably thousands of rules. When business people and information systems have access to adequate business rules at the right moment, they can make informed choices in a timely manner. In this framework business rules serve as the guidance system that influences the collective behavior of an organization's people and information system.

The BR approach is *a formal way of managing and automating an organization's business logic so that the business behaves and evolves as its leaders plan*. A BR approach to information systems development allows the business to automate its own intelligent logic better, as well as to introduce change from within itself and learn better and faster how to reach its goals (Von Halle, 2002).

An organization operates according to many different kind of rules, like legal mandates or specific constructed rules. They guide the way the organization works, they make sure that it comply with legal and other regulations, and they are a source of competitive advantage or a barrier to success. Logically, BR are valuable when they represent the best thoughts of the organization's best "thinkers". Typically, an enterprise constructs a unique set of rules for guiding its areas of core competencies to differentiate itself from its competitors. Regrettably, too often BR have a shadowy existence, being inaccessible or, worse, unknown. This is the case when the rules are "burried" in legacy code, for which there is little or no documentation. Those who use

the system or want to make changes in the business logic don't have access or don't even know about the rules and they have to make assumptions about them that may be incorrect or inconsistent. Such assumptions lead to uncoordinated behavior (human or electronic), not capable of easy changes and adaptability.

Needless to say, the pace of change today, mostly due to technology revolution, has reached unprecedented heights. It is essential for an organization to be able to change. Nevertheless, humans are capable of assimilating new knowledge, adjusting old knowledge, applying it to activities, and evaluating the results – this is called learning. Individuals have a great affinity for learning and organizations should capitalize this ability in order to remain healthy and competitive. Now, more than ever, the organization and its people need to learn more and learn quickly.

The information system's analysis and design should take into account the BR approach. The today's organization needs systems in which the rules are:

- separated from other components, so everyone knows *that* they exist;
- externalized so everyone knows *what* the rules are;
- traceable to their origins and their and their implementations so everyone knows *where* the rules come from;
- deliberately positioned for change so everyone knows *how* to improve them.

By ignoring the BR approach, an enterprise puts itself in a dangerous position for today's businesses. It is no longer secure to separate the business from its ability to reason, the underlying guidance system by which it carries out and justifies its activities. By keeping the memory of BR, an organization can more easily experiment change, learning, growing smarter, and exhibiting more consistent insightful behavior.

4. IMPLEMENTING THE BUSINESS RULES APPROACH

Commercial rules technology will most likely serve as a significant step forward in the evolution of systems' design and implementation. The commercial rules technology promise to deliver better changeable systems faster, putting the business back in touch with itself, by finding and externalizing its own rules.

The base is a change in philosophy, using the BR approach to methodology, management, and technology. A BR approach may provide the organization the most

important business advantage: its own logic in changeable technology. The BR implementation features are described in Table 1.

Table 1. **The BR implementation features**

Issue	**The BR Implementation Features**
The economics of IT	The high cost of rebuilding applications as technologies change is greatly reduced because the business process and rules of the application are stored independently from the software code, and can be re-generated onto new architectures.
Dynamics of business	Business changes are analyzed based on changes to business processes and business rules. The impact on the application can be assessed, and changes can be incorporated and visualized by the business analysts. Once the business is satisfied with the new application, new application code can be automatically generated.
Uniqueness of each business	Applications are built on business processes and rules, which allows business analysts to understand and make customizations to the application without compromising the quality of the application. Custom applications can be built rapidly for very unique businesses or business functions.
Business processes cross application boundaries	Business processes are defined externally to the underlying applications. Existing applications can be assembled into new, composite applications to support business processes. The business process layer shields the users from the complexity of multiple systems. New functionality can be rapidly developed to provide support where existing applications fall short to fill the gaps.
Quality and TQM	The BR approach allow for less complexity in the code and significant automation of the software code development, which promises to result in significantly increased application quality.

Not considering how far and how fast commercial BR technology advances, a fundamental aspect of delivering higher quality application systems is to start collecting and managing the rules of the business. It is no longer desirable to burry rules in specifications and program code where they are locked away, requiring costly intervention and overhead to make changes. Furthermore, the rules can no longer be delivered in a format that is inaccessible and not understood by the business audience.

Commercial *BPM suites* are fully integrated solutions. They combine key technologies into one offering to enable business users and management to control and manage business processes, without heavily relying on the IT department. These technologies include business process modeling, business activity monitoring, a business rules engine, business process optimization, and application integration.

Still, BPM should not be regarded as a "magic wand" that will remedy all corporate maladies. Simply buying a BPM system, installing it, and turning it on will not transform business processes into a clean, efficient, and holistic business management system overnight. The main challenge in evaluating and deploying BPM is that multiple capabilities like integration, workflow, and process modeling tools must be assessed. BPM deployment takes work, commitment, discipline, and careful change management, all of which entail methodical planning and dedication, and a well thought-out implementation.

5. CONCLUSIONS

This paper premise is that integration of applications, information, and business process has become today's #1 IT investment priority. Application integration surpasses the technology borders, becoming a *paradigm* that provides the enterprise with a clear strategic business advantage: the ability to do business in real time, in an event driven environment, and with reduced latency.

To meet these challenges, companies around the world have invested heavily in IT, with a major focus on ERP systems. However, an ERP suite *per se* delivers *zero* value. The power of ERP lies in its ability to improve business processes. The *process* becomes "the hub of the enterprise's universe".

Like some other present-day topics in IT, *business rule* is one of those terms that many people use, but few are able to define. Over the past few years, the level of interest in business rules grew rapidly, which is a useful indicator that might have some value in building modern information systems. BR is not completely new – the newness is not technology, but a renewed focus on what's important.

The collection of rules across an enterprise encompasses its *collective intelligence*. The organization's rules captured, analyzed, automated, and challenged in a business-oriented way, determine who the organization is and… what it can become. Eventually, the best thought patterns of the enterprise could become BR, the inspiration and primary guidance system for *collective behavior*. The BR itself becomes an instrument of change. Some authors predict that a BR approach to systems development

will turn out to be a competitive advantage for any enterprise, by transforming it in a *process-managed enterprise*.

BPM specifically coordinates interactions between systems, business processes, and human interaction in a process-managed enterprise. The goal of BPM should not only focus on solving processes through technology, but also focus on cultural shifts within the enterprise that encourages information sharing, because BPM promotes the notion that a business moves forward based on the collective information that is stored, shared, and circulated among employees. It makes information available to all those who can use it, and enhances the investment that some businesses have already made through the implementation of ERP solutions, allowing for greater efficiencies throughout the entire value cycle of a business.

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