



**Alternative Technologies**

# **The Benefits of a BPMS**

## *An Executive Report*

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# 1. Introduction

BPMS (Business Process Management System) has become a widely used, but poorly understood term. The category of Business Process Management has been cited by well-known analysts at firms such as Delphi, IDC, and Gartner as “the next big thing” and “one of the most important business technologies” to be developed. With an expected market for BPM software as high as \$34 billion by year 2006, few executives can afford to ignore this trend or the opportunities associated with it.

At a very high level, a BPMS can be defined as a set of facilities for defining, implementing, and improving business processes. This report defines BPMS in more detail, describes the business facilities a BPMS provides, and discusses the numerous and unique benefits that can be expected from use of a BPMS. You will learn how a BPMS can take you beyond the promises of business process re-engineering and continuous process improvement, providing technology that is intended to enable intelligent business management.

## 2. What Is A BPMS?

Although you may not realize it, if you have any business management acumen, you already understand the use of a BPMS. This claim requires explanation and, having encountered numerous very loose definitions (most implicit), it will also be important to explain the BPMS concept in a little more detail. We begin by first making certain that we understand what is meant by terms like “business process.” A *business process* is a set of business functions, interconnected in time and constrained by various business rules in order to achieve a specific set of business goals pertaining to a specific enterprise over time.

What constitutes a business function is determined by objectives: every task, activity, or operation that contributes to the objectives of the endeavor (a.k.a. the enterprise) is a business function. Business functions are defined abstractly because the specific implementation of a business function depends on the resources available at the time it must be executed. Every business manager is familiar with the sometimes difficult problem of acquiring, assigning, and otherwise managing resources so that the business runs efficiently. In practice, resources are often acquired and assigned based on managerial experience although some very specific resource management problems (such as inventory management and manufacturing scheduling) are commonly solved with sophisticated software.

The business rules that determine which business functions are performed, after which events, in what order, under what circumstances, and with which resources, and also what constitutes success or failure, are much more familiar than would at first appear to be the case. Although the word “rule” may sound like something rigid, only the simplest of business rules prescribe anything so constraining. Business rules can express complex responses to complex situations, building in flexibility and judgment. Whenever a manager makes a management decision that can be applied by, communicated to, or delegated to someone else, that manager has asserted a business rule albeit perhaps informally. The assertion of business rules is simply another way of describing the (possibly repeated) implementation of business management decisions.

There are various methods by which businesses capture and convey the management decisions (i.e., business rules) and interrelated tasks (i.e., business functions) that go into achieving a business objective, that is to say, a business process:

- **Training** – Most often, process information is captured and conveyed almost exclusively through the training of personnel. This method results in the well-known problems of poor consistency (people are fallible), control (communication is not precise), and knowledge asset retention (people change employers). It is not uncommon for training to be informal and poorly planned. Informal (e.g., on-the-job) training is subject to inconsistencies since there is no permanent record of what should and has been taught. Training received from a good teacher who is without real experience can fail to teach a business process so that it is usable by others. Likewise, the most experienced worker will not be able to convey a business process effectively if they are not good teachers. More often than not, employees

are taught how to perform a collection of business functions and not how to implement a business process. When business processes or objectives change, changes cannot be made to on-the-job training, special training seminar, or even on-line or computer aided training courses quickly enough to guide personnel.

- **Policies and Procedures** – A less popular method is to create written policies and procedures. Of course, we all know that written policies and procedures are rarely consulted except perhaps in hindsight. One good reason for this is that written policies and procedures are notoriously difficult to create, maintain, and use. While some use checklists and sign-offs to guarantee that critical procedures are followed, the greater percentage of business processes go undocumented and unmonitored, and so are unenforceable, untraceable, and cannot be audited or managed. Once policies and procedures are written, managers can be led into a sense of false security, believing that they now understand the business or even that they now have control over it. Instead, they end up with documents that are out-of-date, constraining, or simply unused, and are dismayed to learn how much they diverge from reality when problems arise.
- **“Manual” Business Process Modeling** – A more formal approach is found in the methods of business process modeling. These methods permit skilled business process analysts to produce graphical documents that can be easier to read and understand than policies and procedures manuals. In a business process model (depicted graphically as nodes with interconnecting lines), business rules appear as both constraints and as nodes where either process path alternatives branch and fan out or where parallel process paths merge. Business functions also appear as nodes. Process modeling is commonly introduced to an organization through business process re-engineering or continuous process improvement initiatives. While these initiatives are of considerable potential value, business process models in such contexts are essentially reference documents that must be frequently revised rather than active and integral components of the business process itself. Although more formal than policies and procedures manuals, and even complementary to them, manual business process modeling can be tedious and the masses of documentation produced often become mere reference works.
- **“Automated” Business Process Modeling** – Over the last ten years, business process modeling software has been developed that refines and even simplifies the methods of business process modeling. Some business process modeling software is so intuitive that just about anyone with basic computer skills and knowledge of a business process can use it effectively. By combining these tools with a repository and search capabilities, the cost of capture and maintenance has been greatly reduced. Sophisticated tools for evaluating the results of process change, optimizing business processes, and even automatically checking for correct and implementable design now exist. As an integral part of a BPMS, these tools provide an elegant solution to the capture, conveyance, and maintenance of management directives, business rules, business function definitions, and their interrelationships within the context of a business process.

Being somewhat simplistic for the purposes of understanding business process management and therefore a BPMS, a business can be described as an integrated collection of managed resources, business rules, activities, performance measurements, and objectives. The collection may be extremely complex, the resources may include everything from intellectual property to personnel to capital equipment to raw materials, the business rules may be created and implemented once or innumerable times, the activities may be difficult to define or require lots of time to complete, the performance measurements may be subjective, qualitative, or quantitative, and the objectives may be continuously changing. Still, these components serve to define a collection of business processes.

The functioning of every business can be understood as the execution of a collection of business processes, with every business activity being a part of at least one process. In effect, a business is a system for defining, implementing, evaluating, and improving the business processes that constitute its functioning. Thus, every business is a kind of manually-implemented business process management system. As we will see, much value is to be gained by supplementing this manual system with automated facilities – namely, with a Business Process Management System.

### 3. Key BPMS Capabilities

Four key tasks are associated with a BPMS: (1) the specification of business processes, (2) the timely management and monitoring of a target set of business processes, resulting in business metrics, (3) the mutual scheduling of business functions and the resources required to execute them at each step of an instance of the process, and (4) the dynamic modification of business processes and instances of those processes based on analysis of business metrics in order to evolve the business.

These considerations and the tasks listed above imply the following defining characteristics for the *ideal* BPMS (without going into the detailed justification):

- management focus is on the *strategic* optimization of business process definitions in response to new business opportunities (requiring the ability to alter business process instances, and to assess and manage risk through what-if analysis)
- the implementation and timely completion of business processes, and efficient assignment of resources to business functions is *tactical, secondary* goal
- monitoring focus is on evaluating business process effectiveness in meeting *strategic* business goals (requiring information about when and by whom, how, how well, and at what cost)
- quality and cost (including time and resources used) of a business function result may have a greater impact on process decisions (branches) than the mere fact of completion
- business process instances usually cannot be implemented as a forward sequence of business functions without affecting business integrity, and exception or error subprocesses are integral, defining an critical business intellectual property
- business process definitions, and their implementations, may be extremely complex, difficult to comprehend, and frequently changed (concurrent business functions, asynchronous business events, complex joins and branches, and reverse flows often have critical semantic value)
- business functions are mediated by combinations of people and automated means, thus times can range from micro-seconds to months or even years
- the possible paths of a business process instance are often dependent on the internal logical process of a business function and its final state, so that separation of control flows and data flows is only sometimes a possible optimization

A BPMS is intended to help manage and improve the *strategic* efficiency of a business. It does so by enabling the real-time management of a dynamic set of processes inasmuch as these



represent the operations and purpose of the business itself. This is the very essence of “business management.” To be beneficial, a BPMS must have four types of facilities<sup>1</sup>:

- **Modeling** – As discussed above, there must be means to define business processes including business functions or activities, business rules, resources, and performance measurements. The more intuitive and flexible these facilities, the more likely that business process knowledge assets can be captured and maintained so as to reflect with accuracy and timeliness the current goals of the business. A repository acts as a history of those business goals. Through modeling facilities, management decisions and policies can be rapidly captured or changed.
- **Execution** – There must be means to drive the execution of a business process directly from its definition. The core of these facilities is normally called a process engine, a complex piece of software that uses business process definitions to invoke either automated or manual business functions at the appropriate time and with the appropriate resources. These facilities may have interfaces through which personnel can obtain and complete task assignments and definitions, as well as interfaces with other software (such CRM, ERP, HR, and so on) and even machines. Interfaces to entire EAI and CAD/CAM systems are possible. In a very real sense, the process engine is the mechanism by which management decisions and policies can be rapidly implemented in a repeatable, verifiable, and timely manner.
- **Measurement and Monitoring** – There must be facilities for measuring and monitoring every component of every business process. In many cases, valuable measurements can be derived directly from data collected during the execution of a business function, performing ABC (activity based costing), accumulating direct costs, or by monitoring duration, frequency of execution, and expected time-to-completion. This information provides a real-time view of the performance of the business and can often be presented in an “Executive Dashboard.” The data collected should be maintained in database, and correlated to the circumstances under which it was collected. Unexpected or “hidden” errors are often identified in this manner. These facilities become the eyes and ears of those who must manage the business process.
- **Reporting and Analysis** – There must be facilities for analyzing the data collected by the measurement and monitoring facilities and presenting the results of this analysis to decision makers. Such analysis can be a process used to control or even modify other processes. An analytic process may include tasks that are performed using sophisticated data mining or OLAP tools, or even proprietary programs for risk management. In effect, these facilities allow a manager to close the loop, responding to the combination of internal and external events so as to continuously improve the business and make it more robust.

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<sup>1</sup> For a more complete analysis of BPMS components, see Alternative Technologies’ [BPMS Evaluation Scheme](#) or Alternative Technologies’ [BPMS Product Report Series](#).

## 4. BPMS Benefits

Without a BPMS, employees need to know a great deal about the facilities that are used to implement a business process. As such, they are not able to concentrate on the goals of the business process and are disenfranchised from managing the business itself. Such disenfranchisement is an intolerable effect given the need for business agility demanded today's competitive environment, and especially by e-commerce and e-business.

From a business perspective, it is important that every business process be defined in terms of business goals, functions, and constraints rather than in terms of the resources that implement the process. In the evolution of a business process design, there is an iterative interaction that takes place between business managers and those who manage the resources that will be used to implement the business process.

This brings us to a key point: a BPMS provides a means to capture and implement decisions made by those who manage. The realization of those management decisions are business processes. BPMS technology provides managers with the means for defining, changing, and implementing (via integration services) a business' processes with agility and consistency, irrespective of a manager's responsibilities, the customer, product, service, or resources used to deliver those products and services. And therein lies its essential value, whether for B2B, B2C, front office/back office integration, operations management, or infrastructure management. Unlike EAI technologies that merely connect automated business functions, a BPMS provides the coordination and orchestration of those connection business functions in the context of a process. Furthermore, they need not be automated. A BPMS goes far beyond traditional workflow management.<sup>2</sup>

BPMS technology provides those having the need to manage business operations with several defining benefits:

- **Business Agility And Integrity** – The ability to specify controlled changes to business operations rapidly in business terms and objectives, and to implement many of those changes *directly (often without IT involvement), and in near real-time*, results in numerous competitive advantages. Among them are greater responsiveness to market demand, unanticipated supply chain problems, and even disasters.
- **Actionable Business Intelligence** – The ability to measure the effectiveness of business changes and present these in business terms (metrics and analysis), along with facilities to modify business processes, provides the means to control the business in near real-time based on meaningful information.

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<sup>2</sup> Indeed, the objectives, capabilities, and benefits of business process management differ greatly from those of workflow management. For a detailed comparison of workflow management versus business process management, see Alternative Technologies' [BPMS Evaluation Scheme](#).

- **Operational Services Alignment** – The ability to provide implementation services – such as IT and HR – that are continuously aligned with business objectives and goals can reduce operational costs and optimize efficiencies.
- **Flexible Response To Change** – The separation of the “what” (goals) from the “how” (resource management), except insofar as knowledge and use of specific processes are dictated by the goals, minimizes the impact of external, uncontrollable change while maximizing business stability (process and data independence).
- **Business Knowledge Management** – The discipline of using a BPMS for business process definition and change results in the capture of invaluable and reusable business knowledge. Training costs and the risk of business interruption can be significantly reduced.
- **Quality Management** – The causes of reduced quality, and often the solutions, can be rapidly identified, leading to reductions in waste, rework, and returns, as well as improved customer relations and decreased risk of liabilities.
- **Time Optimization** – Unnecessary latencies in the business process can be identified and selectively eliminated, resulting in improved time-to-delivery and time-to-market. This benefit alone often provides the return-on-investment for BPMS implementation.

Today business applications hold business processes captive much as they once did business data. This situation is completely unacceptable in a world that demands that businesses be able to change their business objectives – and therefore their business processes – rapidly. A BPMS provides an opportunity not only to manage business processes *independent of applications*, but to separate those processes from the application as a collection of business functions. Process information is then easily shared by applications, accessed by users, and changed uniformly across applications.

Numerous recent developments suggest that this revolution is well underway. The BPMS will become not only the repository of business process knowledge, but the "database of record" as well, thereby removing business function logic from the application. This means that the BPMS actually controls process flow as well as monitoring it. At the highest level of process abstraction, the BPMS controls the business logic between applications or business functions and activities, permitting the process to be modified without shutting applications down.

## 5. Conclusions

The benefits of using a BPMS are far reaching and no doubt we have not begun to identify them all. Even businesses that have used a BPMS for managing a small number of key business processes report a positive return on investment within a very short time, often in as little as a few months of operation.

As a most important benefit, BPMS products have the potential to put control of business processes back in the hands of the rightful owners – business management. The wise CIO or IT Director will recognize that this change is beneficial to technologists as well, enabling a more rapid, flexible response to business requirements and better alignment. While the adoption of any new technology requires care and is not without its risks, surely the opportunity to make such an important and necessary change cannot be ignored without even greater risk.

## About the Author and Alternative Technologies

David McGoveran is the President and Founder of Alternative Technologies, an independent analyst and consulting firm founded in 1976. Mr. McGoveran has been a pioneer in the definition, technical architecture, and uses of Business Process Management Systems, having defined the marketing strategies and technical direction for companies such as Hewlett-Packard, IBM, Candle Corporation, and others. He has been lecturing and writing publicly on the topic of BPMS since 1997. He is Senior Technical Editor and co-founder of the eAI Journal ([www.eaijournal.com](http://www.eaijournal.com)), in which appears his monthly column *Enterprise Integrity*. Mr. McGoveran provides consulting and teaches seminars on Business Process Management, as well as other topics, helping users evaluate and select BPMS products.

Alternative Technologies publishes The BPMS Evaluation Scheme, a detailed analysis of the purpose, functions, and components of BPMS products. Analyses of popular BPMS products are also available.

For pricing and availability of these or other reports or other products and services (including consulting and educational seminars), please contact Alternative Technologies directly at (831) 338-4621 or via email addressed to [mcgoveran@AlternativeTech.com](mailto:mcgoveran@AlternativeTech.com).

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