



Business Process Management

A Balance Between Process Efficiency & Business Agility

Business Process Management is a rapidly evolving domain within IT. Vendors are entering into this domain from various directions: from EAI, Document Management, Workflow, etc. Despite this flux, though, what business people require from BPM solutions remains relatively stable. The intent of this paper is to describe the domain as a business analyst may view it.

About the Author

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The Origins of Business Process Management

At least since 1993, when Michael Hammer and James Champy published “Reengineering the Corporation” (Harper Business, 1993), business leaders have known that managing an enterprise requires managing its processes. Some experts have gone so far as to argue that an enterprise is nothing more than the sum of its processes. The decade that followed saw Business Process Reengineering (BPR), Business Process Outsourcing, Digitization, Enterprise Resource Planning (ERP), and Six Sigma.

These were worthwhile initiatives, and seemed like the very latest in management thinking, but the spirit that animated them was that of Frederick Winslow Taylor (1856-1915). The unstated assumption was that the primary reason to study a process is to eliminate waste. Another implicit assumption is that the environment will remain sufficiently stable so that improvements to a process have sufficient time to generate a return on the required investment.

As the decade wore on, however, it became obvious that the business environment may never again be as static as it had once been, and that enterprises would need to be able to change at least as rapidly as their circumstances did. These changes would quickly render even apparently optimal processes inadequate for business requirements. Among the developments that can drive a wedge between a process and the business are:

- Mergers and acquisitions
- New markets and distribution channels
- New products
- New technologies
- Regulatory changes

The “new” Business Process Management (BPM) and Business Process Management Systems (BPMS) are meant to strike a new balance between process efficiency and process agility. The optimal balance is now skewed towards more ‘agility’ rather than ‘efficiency’ alone.

What is Business Process Management?

Business Process Management (BPM) refers to the closed loop, iterative management of business processes over their entire lifecycle. It includes designing, optimizing, documenting, communicating, deploying, evaluating, updating, and retiring processes. Well-managed companies have always had robust, but time-consuming, mechanisms for performing all of these functions.

In the past, these mechanisms usually involved the following:

- Designing and documenting processes using paper or software applications like Visio® and MS Word®
- Using specialized products like Crystal Ball® to simulate processes before deploying them
- Deploying processes by developing new applications and by customizing existing applications
- Using specialized products to monitor the performance of processes, and to identify areas for improvement

Any changes to existing processes required changes to be made to the application code.

Business Process Management Systems (BPMS) are a new family of software systems that automate and simplify the task of managing business processes over the entire lifecycle. In the past, IT-enabled business processes were implemented within the boundaries of particular software applications (Examples include Customer Relationship Management systems and Supply Chain Management Systems) Even when processes required multiple applications to be coordinated, the locus of control would remain within a specific application, which would call on others as and when required. With a BPMS, the process management system specializes in orchestrating every business process, and will call on other applications for services, as required.

This means that processes become distinct entities that can be managed and reused in other contexts too. Existing processes may be recombined to create new processes. The business management can own their processes, while the underlying IT infrastructure can be managed by the IT staff.

What Business Process Management is NOT

BPM is NOT BPR: Business process reengineering is a methodology that emphasizes re-creating processes from scratch. This can result in huge improvements in efficiency and effectiveness, but can be time-consuming. Even worse is the risk of throwing the baby out with the bathwater. An organization's processes represent its accumulated wisdom, and existing applications often include highly customized algorithms that are corporate assets. The key is to ensure that these assets are preserved, and are available for use wherever and whenever they may be needed.

BPM, on the other hand does not require the use of any particular methodology. It automates and reuses existing processes, and thus capitalizes on past investments. BPM and BPR are complements, rather than substitutes. Each of them increases the value of the other.

BPM is NOT EAI: Enterprise Application Integration (EAI) refers to a family of technologies that are used to get applications to work together. These may be used simply to move data between applications, or to create composite applications that reuse functionality that is already available from existing applications. Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB) are relatively new developments in EAI.

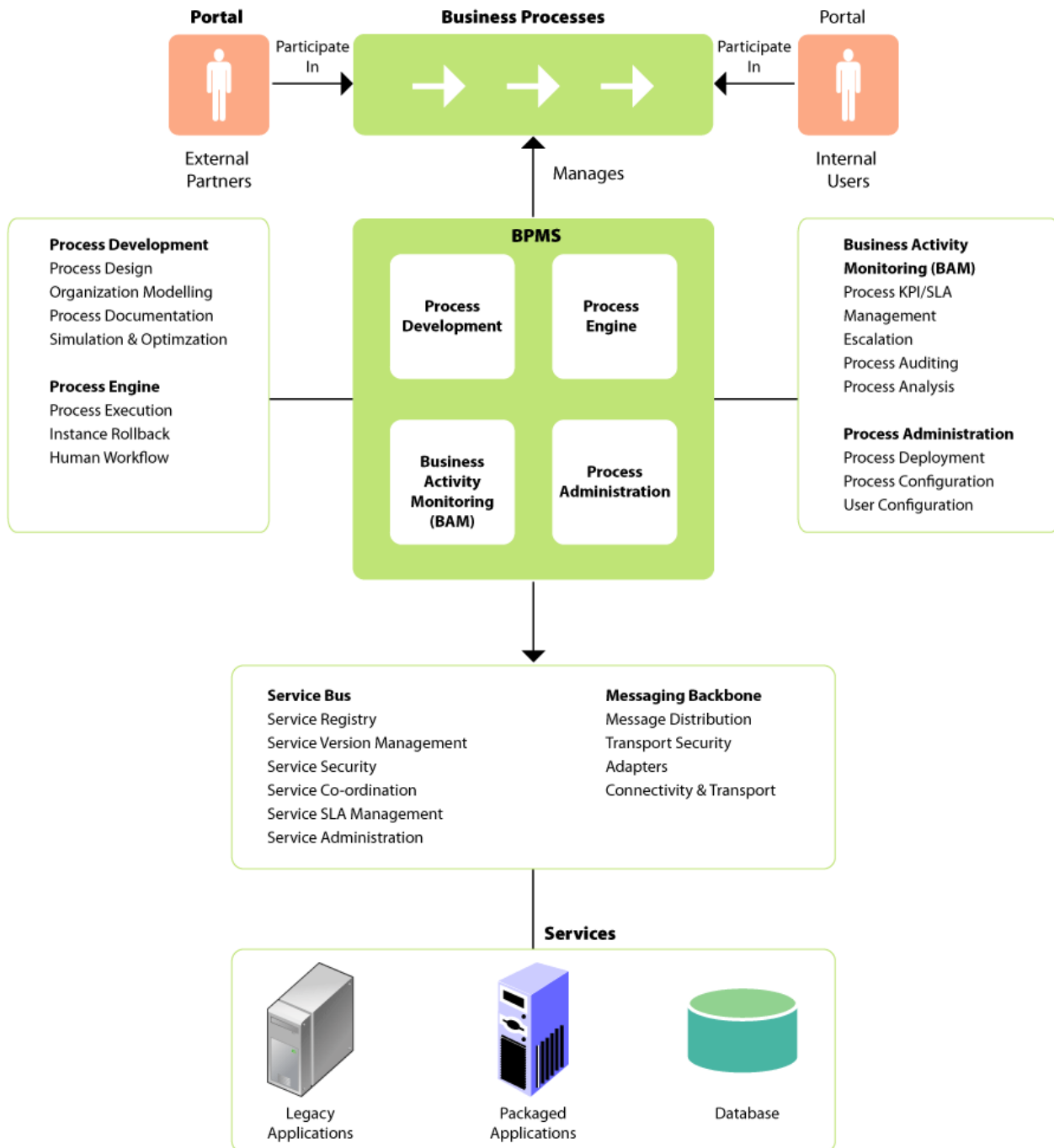
A BPMS, however, sits above the EAI/Services layer, and calls on these resources when required as it executes a business process. Some BPMS vendors assert that their systems work even without an Integrations layer.

BPM is NOT ERP: Enterprise Application Integrations (ERP) are monolithic enterprise applications that automate many standard business processes. Implementing such a system is usually a complex and expensive undertaking that can take years. While they incorporate many "best practices", they can be rigid, and usually require the company to adopt the processes defined within the system, rather than the system adapting to the practices specific to the company. As with BPR (see above), there is also the risk of losing highly customized algorithms that are corporate assets when replacing legacy applications by ERP.

BPMS are relatively modest implementations that can be rolled out rapidly. These are low-cost, and highly adaptable. Processes can be added and refined incrementally, and recombined into composite processes.

BPM is NOT Six Sigma: Six Sigma is a methodology for creating and improving processes. It is independent of any technology. As with BPR (see above), Six Sigma is a great complement to a BPMS.

A Conceptual Architecture of Business Process Management Systems



Given above is conceptual architecture of a BPMS. Its main components are the Process Development Environment, the Process Engine, Business Activity Monitoring (BAM), and System Administration.

Business analysts and business users employ the development environment to define business processes and business rules to be executed on the BPMS. This component also enables processes to be simulated before they are deployed, so that potential bottlenecks are identified and removed.

The process engine is responsible for managing project instances. This includes creating process instances, prioritizing them, ensuring process integrity and performance, managing the interfaces with services and users, executing business rules, and generally ensuring that the business process meet the expectations of the business.

Business Activity Monitoring (BAM) provides the business with data and reports on the performance of various business processes. This enables the process owner to identify bottlenecks and to drill down into the data to obtain even more detailed views of process capability.

System administration refers to the features of the BPM product that enable system administrators to configure users and their rights, administer the servers, monitor performance, etc.

The BPMS uses the Enterprise Services Infrastructure to access the underlying applications and databases. These applications and Databases themselves expose their functionality in the form of services, which are managed by the Service bus, and combined in various ways to create composite services.

When to Use Business Process Management Systems

THE key advantage of a BPMS is agility - processes can be created and managed with minimal changes to application code, and new processes can be rapidly and easily created. The other primary advantage is conservatism: Past investments in business logic and applications can be reused to create new, composite, processes.

Consider implementing a BPMS whenever:

- Business processes need to be maintained in several versions, for different product categories or for different markets
- Business processes need to be extremely mutable
- There are opportunities that have been identified for existing applications to work with one another, but these include a huge element of custom code that cannot easily be moved into an ERP

In fact, any occasion where you are considering implementing a new process, or redefining an existing process, is an opportunity to consider moving to a new “process platform”.

How to Evaluate Business Process Management Systems

A BPMS needs to be evaluated based on its capabilities over the entire lifecycle of business processes. We need to consider its capabilities in the following:

- Requirements management:
 - Ability to integrate with requirements management tools already in use
 - Ability to document process requirements and SLAs within the tool
 - Ability to trace requirements through the process lifecycle
 - Ability to model business organizations
- Process design:
 - Ability to use standard modeling languages like UML
 - Capabilities of the graphical process designer: ability to depict different organizational structures and process flows (role-based routing, relationship-based routing, ad-hoc routing)
 - Ability to reuse processes from other modeling exercises
 - Ability to depict both synchronous and asynchronous process calls
 - Capabilities of the business rules engine
 - Whether the product includes a forms designer, and whether it can work with other forms products
 - Process simulation capabilities

- Process deployment and execution:
 - Ability to work with a variety of EAI products without extensive programming
 - Support for XML over JMS and XML over HTTP(S)
 - Provision for the process to be deployed centrally, without the need for any changes at the client end
 - Queue administration
 - Roll-back capabilities
 - SLA monitoring and escalation
 - Exception handling
 - Process metrics and reporting
 - Scalability

- System administration
 - Ability to work with a variety of EAI products without the need for extensive programming
 - The ease with which end users can be created and authenticated
 - Backup and recovery
 - Process configuration management

- Cost
 - License cost
 - Requirement of Third party software

Conclusion

Business Process Management Systems (BPMS) are the next step in the old trend of constantly increasing abstraction in IT. As with previous stages in this evolution, this stage enhances easy comprehension and use.

The likely impact of this development, however, could be even greater than in past stages. These new BPMS use a process metaphor that business users are very comfortable with. They also employ simple interfaces, and minimize the need for new software code. To that extent, they free business users from their dependence on IT staff, which can now concentrate on keeping applications up and running, and on developing entirely new software functionality, while the business users gain control over the processes they depend on.

The BPMS market is now in a highly fluid phase, as vendors wage war over standards and technologies. The final details may not yet be defined, but the overall direction of BPM is very clear. IT organizations will find that they are being called on yet again - to lead, follow, or get out of the way.



About Enterprise Application Integration Practice

With an experience of executing Enterprise Application Integration (EAI) assignments across the globe, a presence in 50+ countries, multi-skilled EAI consultants, a rigorous delivery methodology and thorough understanding of the local challenges, TCS is uniquely positioned to provide end-to-end solutions for your EAI needs, and to help you realize the benefits of operational excellence within your organization.

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