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## Business Process Intelligence

**BI and business process management technologies are converging to create value beyond the sum of their parts**

**By Mark Smith**

The business environment today demands that your organization redouble its efforts to improve the efficiency of processes that have a positive impact on financial performance. Fortunately, the capability to be much more responsive to business events is now available, enabling you to eliminate bottlenecks in the decision-making process.

For example, the ability to continuously measure and monitor a business process is now economically and technically possible through years of technological advancements in application integration and servers, business rules and workflow, business intelligence (BI), and process management software. Specifically, the developing convergence of BI and business process management (BPM) software is enabling *business process intelligence* (BPI): the application of BI-oriented performance-driven management to business processes. Instead of simply automating business processes — as they've done for years — forward-thinking organizations are beginning to realize that gaining intelligence about such processes will guide business and IT investments that can result in reduced costs and higher ROI.

Consider the example of a computer technology retailer looking to drive more efficiency in its customer order-to-fulfillment processes to align revenue and service level goals. Recent analysis suggests that fulfillment targets are down by 10 percent, customer satisfaction is down by 15 percent, and out-of-stocked items are up 15 percent, which is probably contributing to a 5 percent revenue decline. The retailer has no systematic method of examining these processes to link and monitor activities among order, finance, inventory, warehouse, and distribution functions. To effectively respond to bottlenecks through notifications that can drive action and inform customers about order delays, the retailer has to find a way to drive more efficiency through measuring and monitoring activities.

## Fusing Performance Management into Processes

There's a lot of noise in the marketplace about corporate, business, and enterprise performance management. Regardless of the term used, the ability to apply performance management principles to daily operations — to optimize overall efficiency, continuously improve quality, and assign value to tangible and intangible assets — is now the ultimate goal of most large business organizations. The question is, how can your organization transform its existing, transaction-oriented information architecture into a performance management network? (See [Figure 1](#).)

The most important aspect of this network is the ability to continuously *manage* performance at all three decision levels, not just *measure* historical performance. Just looking in your rearview mirror and examining the past won't help you optimize your future efforts and align your resources accordingly. The network links the three decision levels — strategic, tactical, and operational — to the information and user requirements that enable synchronization of efforts to reach a common set of goals. At the strategic level, executives outline strategies and goals. At the tactical level, management in the business units sets direction for their

organizations, so that at the operational level individuals can take the right actions.

Unfortunately, most technology investments in this area have diverged, resulting in a web of inconsistent, silo systems and resulting metrics that have no relationship to one another for measuring and monitoring performance. However, a positive aspect of the industry direction toward performance management is the emerging consensus that the fractured, transactional infrastructure typical of most organizations has reached its limit and isn't useful for managing performance across business processes. Furthermore, it's now widely understood that the "business process" — defined as a set of interrelated tasks linked to an activity that spans functional boundaries — should be the most significant focus for organizations, because it can provide value at both incremental and evolutionary levels.

It's a given that a business process is a continuous loop that can be systematically linked and automated. The challenge is deciding where, when, and how you should automate those tasks to ensure that your IT investments are aligned to reap the greatest benefit.

### **Driving Intelligence into Processes**

Several efforts are required to meet those goals. First, you'll need to prioritize process-level improvements through measuring, monitoring, and linking to functional and organizational goals. This goal is critical; automating tasks in a certain set of activities may not have the positive impact you desire if interdependencies allow gains in one area to be eliminated by other tasks.

The next step toward addressing these challenges is to apply a performance management methodology focused on the business process, which will help ensure that performance can be assessed and aligned in the right areas. For example, using the "understand-optimize-align" DecisionCycle methodology, here's how you would define the necessary functional requirements to achieve performance management goals and BPI:

1. To *understand* your business processes, create a business process model that can represent a set of business activities each linked to a set of individual tasks. This model is also supported by the definition of business rules and logic, which bind activities with business process. Then you need to bring real-time and non-real-time data together and flow it into the process model. Consequently, you can execute process measurement by applying analytics to the process model and generating meaningful performance metrics. Using our example from the introduction, in this step, the retail company would create a business process model that defines the order-to-fulfillment process that could be used for measuring performance of activities in a single context.

2. To *optimize* your business processes, apply automated and manual methods to leveraging information and analytics for performance improvement. Several technologies and approaches are available for applying sophisticated algorithms and models to provide a forecast and plan. You should then have a method to collaborate and share insights and knowledge on process-level metrics, which can then manifest into a set of performance metrics that transform into operational task recommendations for optimizing performance and actions. This step could enable you to collaborate and develop a plan that examines alternative approaches to improve performance.

3. To *align* your business processes, you should be able to drive individual actions based on a set of performance targets that compare to internal and external benchmarks. There's also a requirement to support process monitoring that can automate notification to individuals based on detection of thresholds or events that require action. This alerting can also evolve to support decision workflows where agents can intelligently move acceptance and approvals along a process, delivered through dashboards or scorecards that provide personalized and contextual views of process performance. This step could support, through monitoring, the business' ability to notify customers about order bottlenecks so they can take alternative actions — thereby helping the company reach defined performance targets.

This approach materializes into a process model-driven architecture that supports functional requirements and specifies interfaces for business-level functionality across all classes of users. (See [Figure 2](#).) The next challenge, of course, is to integrate that process model with a performance management network. As you'll read in the next section, help is slowly becoming available from a specific sector of the enterprise software market.

## **Market Evolution**

As I mentioned earlier, the entire enterprise software market — from enterprise applications, to BI, to application servers and enterprise application integration (EAI) technology — is shifting to more effectively support business processes. Significant gaps remain, but most vendors are adapting to support these requirements and move toward process-level performance management.

Contrary to the widespread belief that enterprise applications help manage business processes, the reality is that this software merely supports functional tasks; it was only recently that we saw vendors such as Oracle, PeopleSoft Inc., and SAP AG bring new process and integration support into their product portfolios. This fact complicates the situation for organizations that have bifurcated their application investments and ended up with disparate, heterogeneous sets of applications. This state of affairs requires a choice to be made between replacing operational systems or, more likely, using EAI middleware for process integration.

The application server and EAI providers are now seeing the value of BPM, a concept that Vitria Technology Inc. brought to the market at its inception, but now with a management tool — Business Cockpit. This trend will force middleware vendors, such as SeeBeyond, Tibco Software Inc., and WebMethods Inc., to evolve or become extinct as they strive to align their technology offerings in the midst of this market convergence. Although these companies are hyping their technology for its business potential, the fact is that organizations have already acquired enough integration technology: The challenge is how to utilize it for business priorities, which isn't the core competency of these suppliers.

The BI and analytic applications vendors that claim to offer the ability to optimize business processes are even farther from this goal, however: Their strengths in reporting and analysis have yet to be aligned in a process context. Although vendors such as Cognos Inc., Hyperion Solutions Corp., Informatica Corp., and Oracle have added workflow support to enable event and notification-based support, they have remained on the sidelines, focusing merely on adding process metrics to their product architectures for traditional reporting and analysis.

In 2001, Gartner Group coined the term business activity monitoring (BAM), which can be applied to any business area or processes requiring monitoring and alerting. Since then, a rising level of hype has spawned new vendors and product offerings focused on BAM, in addition to driving IBM to acquire Holosofx and Tibco to acquire Praja to complement their infrastructures and provide end-user functionality. However, the reality is that BAM addresses only one small piece of the overall performance management challenges, providing a view of historical performance through monitoring business processes. Many vendors are treading into unknown territories without fully thinking through customer requirements.

The BAM market can play a complementary or independent role in BPM, which has begun to evolve beyond just automating operations to provide enhanced capabilities for measuring and monitoring processes. This trend is evident in vendors such as Lombardi Software and Savvion, and even Vitria has extended its capabilities through partnerships with Crystal Decisions and IDS Scheer to create best-of-breed reporting and process analysis functionality through partnerships. The convergence of BPM and BAM is providing impetus for a wave of vendors (Actimize Ltd., Agentis Software, Categorical, Elity Systems Inc., Popkin Software, Procession Software Ltd., and SeeRun Corp.) to enter this area.

## **No Waiting**

There are new barriers to how organizations manage business processes and look to reduce operational

costs while improving revenue and service levels. By applying performance management to business processes and addressing these challenges, you can reduce process cycle-time — empowering employees to be responsive to business events and make better, faster, and smarter decisions.

Existing investments in enterprise software have created integration and process challenges, but they are finally being addressed. Consequently, you'll now need to focus tightly on technology investments that can provide real value for achieving performance management in business processes. Previous investments haven't always paid off, and the continuous cycles of upgrades must be kept in check to ensure that you can leverage your investments and move to strategic IT projects, such as BPI, that can add value to the business.

A business process model should be the centerpiece of this new strategy as a means to integrate the right technologies to address your performance and process management requirements. Don't wait on promises — look to solutions that can provide this capability today, and don't get sandbagged by projects that won't add value in a six-month window. Enabling BPI is your first step toward fulfilling the possibilities of performance management and building a network that can link strategic, tactical, and operational decisions by empowering users with the right information and the right metrics.

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