

BPM: Taking Flight

Despite current limitations, its future in a service-oriented world seems bright

BY CAROL WEISZMANN
AND SUSAN MESSENHEIMER

To stay competitive, organizations today need more than solutions that automate and simplify application deployment. They need to streamline and automate business processes, which means, ultimately, that business users—not IT folks—need tools to help them design, monitor, manage and standardize the processes they own.

That's where business process management (BPM) tools come in. Users can model, design, execute and monitor processes with BPM tools sporting friendly interfaces that enable them to create processes by linking together assorted objects.

Theoretically, such BPM products provide the means for ensuring that business processes, interactions, decisions and events are dealt with appropriately. Work is routed to those best qualified to do it, and built-in audit trails enable post-event assessments of compliance as well as the opportunity to redesign ineffective processes and examine decision-making in context,

since processes can be linked to the data and content relevant to them.

In actual practice, however, BPM implementations typically have been limited to smaller-scale, departmental process improvements—classic tactical deployments. Why? Disk-based relational back-end data stores generally drive first-generation BPM tools, which limits their scalability and forces them to be integrated into existing environments—an expensive effort requiring third-party support and lots of customization.

Nevertheless, in many cases, using these first-generation BPM tools reduced new-application development time by half, according to a study by Boston-based AMR Research (“Business Process Management Landscape—Tangible ROI Now, SOA Investment in the Future,” January 2005).

But there are clearly limits—at least for now—to what BPM can do. AMR affirms that BPM tools are generally not used to build mission-critical processes, but rather for automating such manual activities as claims processing or loan origination, coordinating existing processes and building processes for regulatory compliance.

AUTOMATION IS KEY

“We knew we had some problems,” said Kathy Nelson, who now is unemployment insurance division director at the Minnesota Department of Employment and Economic Development and was the project manager of the Unemployment Insurance Technology Initiative Project (UI TIP) from 2001 to March 2005. “The system we were using was 30 years old and, clearly, was very inefficient. And our customers—especially the third-party payment organizations—had been pressing us for some time to offer more electronic data interchange. The end result of our analysis was a move to self-service.”

Nelson said everyone understood re-engineering was in their future. “All of our current business processes would have to be re-engineered since they were all highly manual and built around a 30-year-old system.”

In 2001 Minnesota began its BPM initiative. It took a few years to bring together all the needed information and resources, document and analyze current business processes to figure out what should be accomplished, set goals and determine how to conduct business in the future to meet those goals, and determine

both system and business requirements.

All this was pulled into a request for proposal in order to hire a systems integrator. Bearing Point was hired in 2003 and went to work figuring out:

- How to achieve project goals and meet requirements through business process re-engineering.
- The best tools to use as well as the right approach/methodology.
- The business processes and business rules that would need to be designed and implemented.

The new system—which shifts the division from a totally internal facing organization to a self-service model—supports entirely re-engineered rules and processes using no legacy hardware or software.

The first major rollout was June 2005. In July employers began interacting with the system to report wages and make their payments to the state, and 115,000 of them used the new system in July. Their feedback—of which, Nelson said, there was “lots”—spawned changes.

“We continue to welcome and receive feedback so that we can keep improving the system in order to make it easier for both customers and staff to use,” she noted. “Even with the challenges employers and staff had using the system initially, it was a huge success. We were able to cut cycle time in half with a third fewer employees. And employers have immediate access to all their account information, which helps them to manage their UI requirements and costs faster.”

The initiative's ROI is not in yet, but

BPM AND SOFTWARE PROCESSES

“Today, business processes embedded in software are set in concrete,” pointed out Eric Austvold, research director at AMR Research. “Many companies have described the endeavor to change processes as analogous to an act of Congress, requiring a cross-functional team of business and technical professionals to enact.”

BPM will change all that because business professionals will be able to tinker with dynamic software processes. “Changes that will be possible,” said Austvold, “include adding additional participants to an already running process, modifying rules that govern the process, and modifying the process flow itself.”

But all this will require a new set of business process governance policies that have yet to be formulated. As BPM finds a home in software development, key questions that must be asked, and answered, include:

- What is the definition of a process?
- Who will have the authorization to create, modify or delete a process?
- What processes should be kept private because of their value as intellectual capital? What processes should be shared? With whom and in what format should they be shared?

—Carol Weizmann and Susan Messenheimer

BPM Takes Flight in Service-Oriented

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things look promising. "After doing the initial analysis," Nelson reported, "we determined we should be able to run this part of the program with half the staff it previously took. What's more, employers are actually asked to provide less information than they did before and do fewer calculations because the basic information they provide electronically enables the new system to calculate their taxes due."

There's more to come. "The first piece of the project put the employer accounts

online [for wage reporting and making UI tax payments]," she said. "The next phase will put the rest of the organization online [unemployment benefits, overpayments and appeals]. And all of this will need to be re-engineered, too."

COORDINATING PROCESSES

One of Florida's largest public health systems, Lee Memorial has begun using BPM to improve a number of inefficient processes, including integrating patient scheduling with new-

hire processes, accessing master patient information, and streamlining workflow in human resources and finance. The results? New-hire recruitment time has been cut by 50 percent, coordinator-training time was reduced by 80 percent, and nearly 20,300 staff hours per year were saved.

Jeff Ward, manager of general financial systems, reported that Lee Memorial's new new-hire processes identified a total savings in wasted effort of almost US\$300,000.

"We've also been able to use the BPM tool to create real-time interfaces between client/server applications and mainframe-based applications," he said. "These real-time interfaces have allowed us to move toward our strategic goal of using a master patient repository of data for several systems and also enhancing our physician portal."

What's next? "We're looking at controlling our returned-goods process by tracking credits owed to us from our vendors," Ward noted. "We're using BPM to create an automated employee change and termination process, which we expect to generate substantial ROI. We continue to launch new projects based on the business owners' current needs to eliminate duplicate efforts of entered

data. We are now starting projects related to employee reimbursement through the accounts payable system."

MISSION-CRITICAL

"Effectively automating the very complex human intelligence process was not only a primary success factor for iJET, but was an absolute requirement," said Greg Meyer, chief technology officer at iJET, which creates intelligence-based risk assessment systems.

Meyer noted that at iJET, developing an "intelligence object" requires as many as 64 different business processes, and up to 23 decision points are required per business process.

iJET has embedded Fujitsu's Interstage BPM engine into its Intelligence Production System so the company has a continually updated stream of information from more than 15,000 sources worldwide on topics spanning transportation, security, health, entry/exit rules and communications, among others. This enables iJET to model, automate, manage and optimize business processes without IT department intervention so it can react quickly to changing market dynamics, competitive challenges and evolving customer needs.

"iJET," Meyer said, "relies heavily on

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A gauge of interest by component. BPM is eight times more likely to be part of future deployments than existing deployments. Source: AMR Research, 2005

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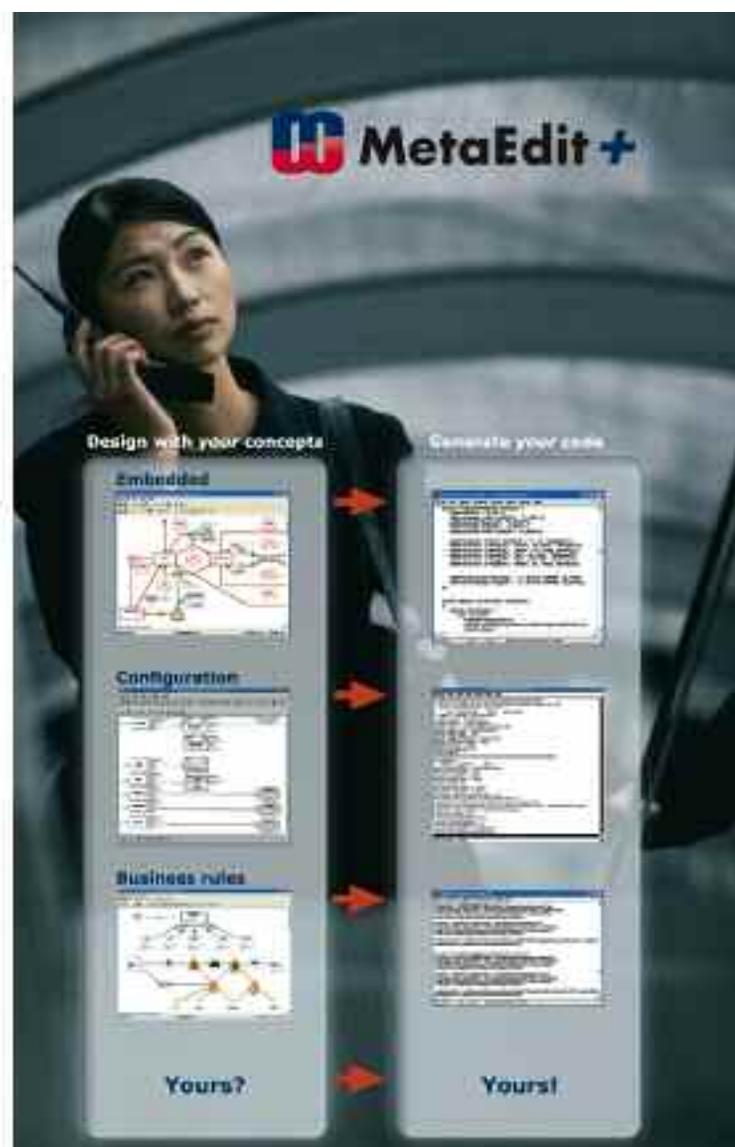
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Keywords:

Model-Driven Development, Domain-Specific Languages, Software Factories, Code Generation

Domain-Specific Modeling (DSM) languages provide a proven solution for improving development productivity by raising the level of abstraction beyond coding. With DSM, the models are made up of elements representing concepts that are part of the problem domain world, not the code world (unlike for example the core UML concepts). DSM languages follow domain abstractions and semantics, allowing developers to perceive themselves as working directly with domain concepts. In many cases, full final product code can be automatically generated from these high-level specifications with domain-specific code generators. Industrial experiences have consistently shown productivity improving by a factor of 5 to 10 compared with current standard practices.

We will introduce DSM from a practical perspective, highlighting real-life examples of DSM from various fields of software product development, ranging from embedded cell phone software to B2B B2EE web sites. Building on that background, we will give guidelines based on a decade of experience in implementing DSM: how to identify the necessary language constructs, different ways of building code generation, and tool support for building and using DSM languages.



World

BPM for achieving agility—the ability to bring new products and services to market more quickly and adapt processes more effectively to changing market demands—as well as flexibility so we can accommodate dissimilar application systems and dynamic business exceptions and visibility, which provides management insight into process-based performance indicators.”

Meyer will keep pushing BPM. “Our primary BPM efforts are at extending our existing environment and culture across the entire enterprise,” said Meyer. “I would love to extend our BPM environment out to our business partners.”

WHAT BPM DOES BEST

“To date, process improvements have come from improved processes within finance, supply chain, sales, marketing and engineering—but are missing across company boundaries, extending to partners, suppliers and customers,” said Eric Austvold, research director at AMR Research. “Implementing software from SAP, Oracle, PeopleSoft and Siebel has helped, but because very few organizations run a single instance of these enterprise software packages and because there are rigid and often inflexible processes embedded in the soft-

ware, companywide process improvements often have not materialized.”

Thus there are some process problems that BPM solves more effectively than traditional approaches, says AMR. Among those are automating processes in about a third of the time needed by classic IT-application developers; changing existing processes more quickly than is possible with custom-coded applications; and integrating the monitoring of a process’s key performance indicators. The latter is something even business

intelligence or enterprise performance management tools generally don’t provide because they tend to focus on business metrics rather than process metrics.

Hence, sectors such as health care that are now scrambling to catch up in terms of technology implementation can use BPM to leapfrog ahead.

“As we look to the electronic health record to achieve patient safety, help with the cost of health care, and improve access to quality health care, workflow/BPM changes will become the

norm,” said John Hummel, senior vice president of information systems and CIO at California-based Sutter Health. But, he added, getting there will require a lot of effort.

“We are in the very beginning stages of changing health care across the country,” he said. “As we do, BPM will become part of our normal medical management, cost control of health care, and, most importantly, patient safety improvement.”

What’s more, any organization devel-

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Improving Odds of BPM Success

BY CAROL WEISZMANN
AND SUSAN MESSENHEIMER

“First, determine how you want to do business,” advises Kathy Nelson, unemployment insurance division director at the Minnesota Department of Employment and Economic Development and project manager of the Unemployment Insurance Technology Initiative Project from 2001 to March 2005. “Then figure out how to use the technology to help you accomplish that.”

To improve their odds of success, members of Nelson’s team did a number of things up front:

- They talked with anyone they knew in government who was involved in a similar sort of initiative.
- They secured executive sponsorship,

making certain the organization was truly committed and had the will to see the project through. “That means,” said Nelson, “being willing to make hard decisions—sometimes you have to stop doing things or not meet performance measures in the short term because your resources are deployed elsewhere.”

- They made sure there was the appropriate financial commitment.
- They articulated several goals in the request for proposal that the BPM vendor would have to fulfill and abide by—including being onsite, bringing a cost-benefit analysis to the table, and the willingness to act as a mentor to both IT staff and business analysts.
- They formed a dedicated project team, removed from operations.

- They did not select a vendor based solely on cost.

Nelson’s people also spent time talking with colleagues who had suffered through BPM failures and learned that:

- Multivendor projects are the least successful.
- Just wanting to modernize systems without re-engineering generally produces less ROI than anticipated.
- Thinking the vendor will come in with some “silver bullet” ends in disappointment.
- IT cannot drive BPM.
- Offsite vendors do not generally produce satisfactory results because too often there’s a disconnect between what the organization wants and what the offsite vendor actually delivers. ■

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Future for BPM Seems Bright

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oping a service-oriented architecture (SOA) strategy will likely need a BPM framework to help contend with what AMR's Austvold called "the post-SOA-implementation burden of

complexity" resulting from software applications not yet modularized to work in SOA environments.

BPM orchestrates the relationship between individual services, making it strategically

important to SOA success.

"Highly modular software services need a common repository to manage the services," Austvold said. "A business process management orchestration layer is needed to facil-

itate a relationship between services, and rigorous IT change management processes are mandatory to guarantee service availability, reliability and scalability."

Guido Sacchi, CompuCred-

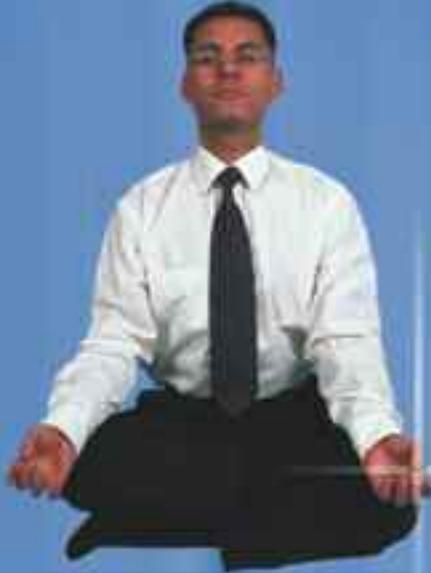
it's CIO and executive director of shared services, agreed. "We want to drive technology solutions through business process. We've started mapping processes and using tools that generate input for modular software development. We want modular, reusable code that can be deployed and managed in 'building blocks' aligned with the business process."

Sacchi pointed to early successes. "But I have not found tools that are fully integrated yet. We still have an 'interface' between process and technology development at the requirements level."

"Early" is the operative word. "We consider [BPM] strategic," Sacchi said. "We're first getting our feet wet trying to demonstrate some tangible successes at the tactical level. Short term, we're looking at improving speed-to-market and software quality, and at better aligning software development with business processes. Longer term, I'd like to align technology solutions development with the business process by integrating our software development life cycle and application change management process with business process mapping and improvement."

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WHAT CORE COMPONENTS DELIVER

Despite their limitations, these first-generation pure-play BPM products have put core components in place, including:

- Process modeling tools that graphically map process task flows.
- Process engines that monitor processes, operations and metrics; interpret business rules, determining where to route tasks.
- Task managers that manage and display task lists of human-oriented work.
- Forms designers used to design the forms required by end users to do their work.
- Process analytics for generating process reports, such as tracking task completion times and spotting lags and bottlenecks.

And in a few cases, such capabilities do drive the creation of mission-critical processes.

—Carol Weiszmann and Susan Messenheimer

BPM Takes Flight

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Those deploying processes designed, monitored and/or managed with BPM have faced challenges.

"The primary hurdle has been stakeholder involvement," noted iJET's Meyer. "BPM has traditionally been viewed as an activity driven by IT. Nothing could be farther from the truth: The primary stakeholders [e.g., business analysts] need to drive the development and maintenance of both BPM processes and culture. Helping these stakeholders to take ownership can be challenging."

At Lee Memorial, the struggle relates to a BPM development process that has engaged its IT staff. "Since BPM is new to people, the design process is more involved," explained Ward. "The IT team has had to learn all of the business rules before designing the process. We do not want to simply automate a broken process." But Ward has good news, too: "This has resulted in a very clean end product for the user community."

AMR's Austvold offered a market analyst's top-down perspective: "The biggest struggle is 'Who is responsible for process improvement?' While it's the responsibility of everyone from the CEO on down, cross-organizational process improvement demands having someone in charge. With the continuous need for process improvement, smart CEOs are appointing executives to the task of process improvement—the chief process improvement officer."

Now a larger-scale second generation of enterprise BPM suites is adding new features to first-generation BPM technologies. Among them are:

- Enterprise/architectural additions that leverage BPM capabilities across the enterprise by improving scalability and real-time data transfer and supporting service-oriented and event-driven architectures.
- Suite additions that boost BPM process functionality with collaborative tools and services that deliver portal and content/document management, improved security, personalization, an ability to simulate or model processes, and a business rules engine.
- More powerful process

engines able to handle high-transaction-volume operations with long-running production processes. They are designed with both load-managing servers and load-execution servers and include support for load balancing and failover, enabling use of multiple engines as processes grow.

BUT IS IT REALISTIC?

"Yes, it's realistic," said iJET's Meyer. "However, I feel that it's a long way off. Before the entire enterprise can embrace BPM, clear ROI must be visible. And, that means that BPM must first be extended out to select business partners—those partners that have a direct and quantifi-

able effect on the bottom line. Once enough direct ROI is visible, I feel that the entire enterprise will be more amenable to fully embracing BPM."

Lee Memorial's Ward also sees enterprisewide BPM as achievable. "A corporate culture must always be looking to reinvent the company and improve

the way it does business," he said. "Here at Lee Memorial, we embrace this philosophy by having a goal of \$1 million in savings achieved through performance improvement. By having this in place, the organization always has its eye on eliminating wasted efforts. And by using BPM, you can hit some home runs." ■

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