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BUSINESS PROCESS MANAGEMENT TODAY: PUTTING THEORY INTO PRACTICE

The pace of BPM is increasing. As it does, implementers encounter new types of challenges. In this special issue, SearchSOA looks at elements that drive the fervent interest in BPM today, with special focus on the problems teams run into when they convert theory into practice. Read about workflow do's and don'ts, BAM strategies, and CEP implementation challenges in this first edition of SearchSOA's BPM quarterly.

BAM and the Art of Integration

When getting started with the BPM off-shoot known as Business Activity Monitoring (BAM), it is important to know the problems you actually want the system to address.

BY ROB BARRY

THERE IS SOMETHING of an art to setting up an effective business activity monitoring (BAM) dashboard. Business analysts and developers must work together to determine which subsystems to monitor, how to get at the data, which metrics are relevant, and how to visually display all of this for business people. Especially in service-oriented architectures with numerous protocols and formats, successfully moving data from live events to a graphical dashboard can be difficult, said Roy Schulte, analyst at Gartner Inc.

The art is in collecting and formatting the right information. "I call it the first mile problem: Where do you get the data in the first place?" said Schulte. "Some [systems] are easy to tap and some are hard to tap."

The main idea with BAM is gaining visibility into business events as they occur. For this to work, a BAM system needs to listen into the messaging that goes on between certain applications and services. As enterprise applications can use a variety of protocols, Schulte said, it can take some maneuvering to hook the right ones into the BAM system. In general, you can save a lot of time on integration if you have built applications to emit events that are tailored well for end-user consumption, he said.

THE MAIN IDEA WITH BAM IS GAINING VISIBILITY INTO BUSINESS EVENTS AS THEY OCCUR.

A BAM system handles much of the integration through adapters, which translate event data into a format that can be visually displayed. But not all BAM products have the same set of adapters. Schulte said most offerings can listen to JMS, Web services, and SOAP, but some have richer developer tools and adapters than others.

"The reality in real enterprises is that there are many different messaging buses, ESBs, databases and technologies coexisting in the same environment," said John Bates, CTO at Progress Software Corp. and general manager of its Apama division. "But until you've got messages flowing into your BAM system, you can't really do anything. Integration is always the biggest piece."

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>
> **—JODY WALSH**
> *Software Engineer, Boeing*

DISPLAYS AND ALERTS

It took some training for aerospace and defense corporation Boeing Co. to integrate the dashboards it created to monitor the applications interacting with a U.S. Air Force satellite. For the project, Boeing selected Enterprise RTView, a product from Corte Madera, California-based SL Corporation, and hooked it into its Java Message Service and Oracle database.

"From a technology standpoint, hooking the displays into the custom Java code was the biggest challenge," said Jody Walsh, a software engineer at Boeing. "RTView does have an API that we used to make that happen, but there was a learning curve."

While getting displays to work with the more standard Oracle database was mostly drag-and-drop, he said it took several months for his team to be proficient in using RTView's API with the custom code.

One of the major objectives of setting up real-time event monitoring is having a system that can predict when something is wrong and trigger an alert. The alert will then either notify a living person, or set off an automated process.

"Alert processing is also an art form," said Walsh. "If you cry wolf too many times, the operators eventually just ignore the alerts."

A monitoring system needs a certain balance to alert users only when their attention is needed, he said. One way Boeing approached this is to have alerts set off automated, rules-based processes to correct issues where possible. Only when several processes cannot correct a problem will an operator's attention be required.

Overall, Walsh said he has been pleased with the results. The team now has graphical displays instead of textual ones and automated alert responses have lowered the need for operator intervention, he said.

This ability to respond to changes as they occur is one of the key benefits to BAM over business intelligence (BI), said Rodney Morrison, VP of products at SL.

"In a BI application, often times they're trying to slice and dice really more static information," Morrison said. "From a BAM perspective, they're really looking at some real-time aspect to make decisions now."

So how fast is realtime? Morrison said you can expect response time between sub-second and a few seconds. This does, of course, depend a lot on your underlying architecture and the volume of events it must process. Customers monitoring a large volume of events (many thousands per second) often use distributed caching or in-memory data aggregation he said.

BAM CAN ENHANCE BPM

The difficulty of sourcing events for a BAM system depends on the skills and competencies of the implementers, said Mark Smith, CEO and EVP of research at Ventana Research.

"If they've come from more of a business process management (BPM) and SOA background, it's not that difficult," said Smith. "They're used to modeling services and processes, and they realize that services are generating events and those events need to be consumed."

On the other hand, if you're working with a person who comes from more of a BI or database background, it can be challenging because BAM involves much more abstract data modeling, he said.

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BAM has become a normal presence in BPM offerings over the past five years. Many of the pure-play BAM vendors have been absorbed by larger BPM vendors and, in many cases, setting up a BAM dashboard is just another part of setting up a BPM system. In 2008 Oracle Corp. bought BEA Systems Inc., in 2007 Software AG bought webMethods Inc., in 2006 EMC Corp. bought ProActivity Inc., and in 2005 Progress Software bought Apama Ltd. All of these acquisition targets had BAM on the menu and wound up tied into some flavor of BPM.

Still, it is one of the myths of BAM

that BAM is just about monitoring a business process, said Gartner's Schulte. The same technology can provide visibility into areas outside of recognized business processes—as was the case at Boeing.

SL Corp. is one example of a BAM vendor that also focuses on infrastructure and application monitoring. Indeed, BAM is probably most widely known as part of a BPM suite, said SL's Morrison. But in these cases BAM tends to be tightly wrapped into the BPM suite and it can be even trickier to integrate with external systems, he said.

On the other hand, having a BAM dashboard plugged into a BPM system can be a bit of an integration shortcut if you are mainly monitoring events inside business processes. With Software AG, the BAM system is based largely on the company's BPM system, said Matt Green, VP product management at Software AG. He said BAM integration is different from vendor to vendor.

"We tend to pull from our infrastructure," said Green. "For us it's just a tie-in." He said it is easy enough to get at the process events and volume is less of an issue because webMethods is built on Complex Event Processing. Where customers have trouble, he said, is in setting up alerts based on complex rules. For instance, a cable provider might be monitoring into the activity of 2,000,000 set-top boxes and comparing that against behavioral norms every second, he said.

When getting started with BAM it is important to have an idea of the problems you want the system to address up front, said Christian Plaichner, Sr. director of worldwide product development at UC4 Software Inc. In most cases, BAM is used to pull data from business events to solve business problems. And nobody knows more about a business than those who run it. Coming to a vendor knowing only that a dashboard might help can lead to a lot of guesswork, he said.

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> *Senior Director, UC4 Software Inc*

"And also start small," said Plaichner. "If we talk about big companies, you often have 20 departments involved and you want to fulfill so many requirements. Trying to cover everything in one shot never works in IT. Start small and scale it out."■

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BPM WORKFLOW GETS DYNAMIC

Today, Business Process Management (BPM) systems are looking to become less strict, and more open to process variation. BY GEORGE LAWTON

ENTERPRISE ARCHITECTS FACE challenges when the world of IT and the world of workflows carried out by people collide. Tools and techniques are emerging to help bridge the gap between highly codified business processes and real world actions that are dynamic in nature. Among these tools are case management, social networking and ad hoc process tools for Business Process Management (BPM), leading analysts tell us.

In order to achieve the fluidity required for competing in a dynamic business environment, changes are required to enable processes which are finer grained and agile, said Jess Thompson, research director with Gartner Group. Historically, BPM has not always been noted for such dynamism.

Handling unique events—not stumbling on the exceptions—is required when BPM meets the real world.

This move to enable more flexibility in BPM is one of the big trends in workflow said Sandy Kemsley, an independent analyst. "We are starting to see more collaborative function and more ad hoc flow, which is called by many names including case management, dynamic BPM, collaboration, and social BPM," she explained. One of the main aspects of these tools is that they provide the ability for users to more dynamically control what they are doing instead of having the process defined ahead of time.

HANDLING UNIQUE EVENTS—NOT STUMBLING ON THE EXCEPTIONS—IS REQUIRED WHEN BPM MEETS THE REAL WORLD.

"Case Management is a hot topic again. It goes up and down in importance. It is a style of BPM that conventional BPM suites don't handle well," said Bruce Silver, independent

(Continued on page 8)

CASE STUDY: STREAMLINING A WATER TREATMENT WORKFLOW SYSTEM

WASHINGTON STATE—Increasingly, BPM efforts call for systems that effectively mimic current processes, and which can make changes on the fly when exceptions occur; in other words, systems that respond to ad hoc needs.

Jacobs Engineering recently deployed a major BPM workflow system in order to manage the contracts associated with a $1-billion-plus water treatment construction project in King County, WA. The system stands as an example of streamlining the communications and management of large complicated work processes that modern BPM seeks to achieve.

The water treatment engineering group must process thousands of documents associated with various parts of the construction process. In 2007, it deployed Interneer Intellect from California-based Interneer Inc. to manage and standardize the processing of contract-related paperwork. Much of BPM is rooted in such document-centric efforts, and this area continues to be a hotbed of BPM. Savings, of course, are essential.

"We estimate the system will save about a quarter-million [dollars] per year in management overhead," said Anthony Pooley, project manager at Jacobs Engineering. "It reduces human error and miscommunication, and focuses everyone on the requirements f their roles."

When the group started the project, all of the paperwork was managed using Excel spreadsheets, which created a lot of headaches. Documents were lost, processes were dropped, and finger pointing ensued. Now 13 processes are managed online, and 300 people regularly log-in to upload new contracts, drawings, and reports.

"You define the process and it manages it. Users get assigned a bit of work, the system tells them what to do," Pooley explained, "and everyone knows the next step of the process. We are more efficient because we have complete track of information flow."

One of the biggest challenges in managing workflow is all of the variations that creep up. In Jacob's case the basic processes in the systems are defined fairly rigidly. But different teams manage different contracts differently. Pooley said they chose Interneer Intellect because it made it easy for teams to organize themselves differently to carry out the same business processes. He explained, "In some of the models we have allowed the users to reassign tasks, while in others, we have retained that for the administrators. If someone goes on vacation, we can reassign roles in bulk." —G.L.

HOME

BAM AND THE ART OF INTEGRATION

BPM WORKFLOW GETS DYNAMIC

FOR COMPLEX EVENT PROCESSING, USE 'JUST ENOUGH' ROCKET SCIENCE

(Continued from page 6)

analyst.

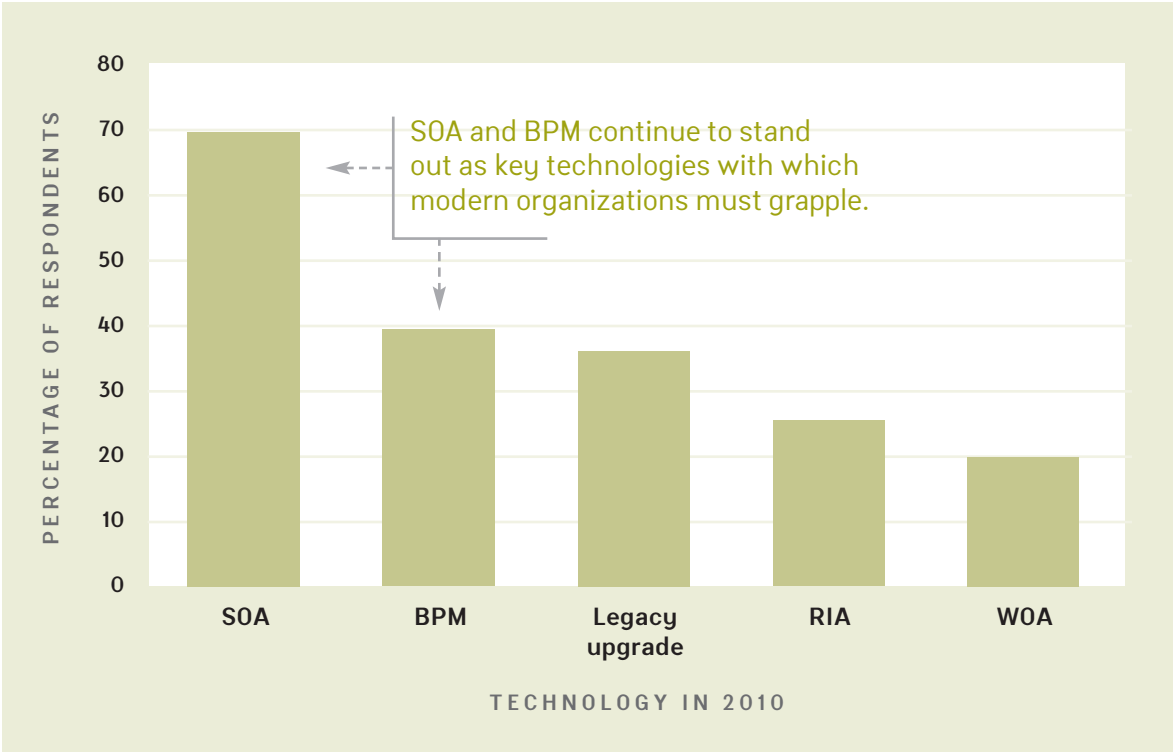
In Silver's judgment, case-oriented BPM is "more ad hoc." It deals with "independent but related processes dealing with particular cases," he said.

"Conventional BPM was designed to drive everything from a model. It does not deal well with exceptions."

Case management is more dynamic. It does not just follow a track from beginning to end. But the path to get there cannot be written down in a process map that you can follow," said Silver, noting that "case management" is sometimes described as "runtime collaboration."

To grasp case management, said Silver, think in terms of a medical case, a legal investigation or disabilities benefits filing, or a citizenship application. "All of the hops depend on the circumstances. They cannot all be written down ahead of time. There are many things that come up where there is a case folder and certain tasks need to be done because it does not follow a predictable path from beginning to end." he said.

Which of the following technologies is most critical to your organization's technology efforts?



SOURCE: TECHTARGET APPLICATION DEVELOPMENT GROUP/FORRESTER RESEARCH JOINT SOA IMPLEMENTATION SURVEY 2010 [PRELIMINARY DATA]

EMBRACING THE AD HOC

Companies are tapping into their internal workforces to improve processes during design and runtime, said Clay Richardson, a Forrester analyst. "I look at it as process populism that helps put business users in the driver's seat," he said. Richardson sees companies using tools like process wikis which are used to create knowledge around processes that work outside the traditional BPM modeling environment.

Richardson explained, "Participants can follow changes just like Facebook, and can also contribute and rate the process, so they are getting updates and a dialogue that lends an air of credibility to the process effort. This accelerates adoption, which is one of the challenges we always see. There are only a few people that are modeling the process, but these tools open up improvements to everyone."

CULTURE AND CONTROL

Companies often face difficulties between cultures on the IT and business sides, said Sandy Kemsley, independent analyst. IT groups are reluctant to give up control, while business users are reluctant to take the initiative.

She explained, "Many users in larger organizations are used to doing the thing they are told to do, and are not rewarded for showing initiative, which is what we are trying to do. Then you have business managers who don't want to give that kind of control to users."

This shift is less of a problem with younger workers who have grown up with user-generated content. They are used to social collaboration and generating their own content," Kemsley noted.

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>
> **—CLAY RICHARDSON**
> *Forrester Research*

In other organizations, the IT department is helping to drive this transition. Forrester's Richardson explained, "In some cases, CIOs are working themselves out of a job because they see the writing on the wall. It is fascinating to talk to CIOs that want to give tools to the business so they are not in the way. They are more concerned with driving the business than just building the solutions." ■

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FOR COMPLEX EVENT PROCESSING, USE 'JUST ENOUGH' ROCKET SCIENCE

CEP architects need to correctly gauge complexity of event and speed of update. BY JACK VAUGHAN

OPPORTUNITY AND THREAT are both tangible. But threat is more so. Enterprises work hard to exploit opportunity, but threats get the first attention. This scenario has played out for early adopters of Complex Event Processing (CEP) software – fraud detection has been an application type early in line to get the CEP treatment.

Of course, fraud detection represents CEP's first major incursion outside financial services. Why CEP has had success on Wall Street is obvious: the world's financial markets are heavily computerized and there are massive bits of information that can be aggregated into events, analyzed and programmatically acted upon to gain profit.

Even in the face of a devastating credit crunch in 2008-2009, CEP systems were able to pay their way on Wall Street, finding opportunities and making money. On Wall Street, more than other places, opportunity and threat go hand in hand. It is still the land of masters of the universe and legions of rocket scientists.

Wall Street is a unique use case, and CEP has had a slow haul trying to expand beyond that high-class neighborhood. Still, enterprises on Main Street want to use modern system technology to exploit their own opportunities. And CEP seems a means to that end.

BEYOND THE WALLS OF WALL STREET

The differences between Wall Street and Main Street are apparent. The data feeds on Wall Street are mostly in place in financial markets, and if you need a feed with a special twist, it is possible to find funding for the fine-tuning.

Need a special algorithm to analyze the event data? Can do! A few successful trades can pay the freight for the rocket scientist that creates the analytical filters.

But things are different when you leave the confines of Wall Street. CEP implementations can be threat-

ening in themselves. These can be risky projects, with hard-to-quantify financial benefit. The would-be rocket scientists in the development group may see this as an opportunity to create their very own space program.

NAVIGATING THE COURSE

CEP apps comprise a host of advanced technologies for application development teams to ponder. In terms of data points to gather up into 'events' you have relational data, messages, HTTP Web listens and so on. Events can be handled with software objects, rules and with SQL-like and not-SQL-like program languages. Clearly, 'technology creep' is an ever-looming menace, waiting to ambush the project.

The best course is based on application of common sense—sorry, no surprise here. When starting down the road of CEP, the questions revolve around how much CEP is just enough.

CEP architects need to correctly gauge how much complexity of event is just enough, what speed of update is just enough, and how much embrace of new technology is just enough.

At the end of the day you will do better with "just enough rocket science." ■

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