

Business Activity Monitoring

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January/February 2007
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As Appeared in e-Doc Magazine
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Successful businesses have always monitored their activity. Daily sales figures, inventory levels, and cash flow are common measures. Now, when much of a company's activities occur electronically and out of sight, monitoring has become more challenging. How can you tell whether your website is losing business because it is slow to respond, or if you need to shift staff to ensure that applications are reviewed within 24 hours of receipt?

A class of tools has appeared to address this problem. Business activity monitors (BAM) are software packages designed to provide management with a real-time view of business processes. Typically they provide information in the form of a "digital dashboard" with a number of performance indicators displayed together to supply an easily read status for your "electronic factory." A range of indicators can be used: stop lights, meters, progress bars, graphs, and faces.

An example of a BAM dashboard used by an e-commerce company would show the number of orders abandoned versus completed, the real-time average time between order completion and fulfillment, and the rate of calls to the 800 number. The BAM dashboard can also be set at times to show the order rate for a new offering.

Business intelligence (BI) products have the reputation of working only with historical data gathered from data warehouses, and being inflexible to change. BAM has three characteristics that distinguish it from BI tools (per Gartner):

1. BAM systems are driven by business events, fed directly from integration software or from business process management software, and do not query databases
2. BAM systems are real time where data displayed is not dependent upon a user refreshing a query or a query scheduler
3. BAM systems are process oriented In summary, BAM products are sophisticated tools for monitoring automated process systems and taking action, where BI focuses more on trend analysis and business analytics.

BAM and BI should complement each other. For example, historical trend data can be used to set thresholds for alerts or triggering corrective activities. Another situation would be where mined data identifies credit accounts with increasing risks such as payments in arrears. This is fed into a BAM tool that freezes new purchases for these accounts and triggers corrective activities by the accounts receivable department. It can also make sure that accounts are brought into compliance within a specific timeframe, or if not, additional alerts are issued within the business.

A BAM dashboard can provide real-time visibility into business events at a number of levels, from displaying the status of an entire business area to low-level conditions such as the response time of an underlying database. They may be engineered to provide layered information, so that the lowlevel factors responsible for a problem may be accessed easily for problem diagnosis. BAMs not only display conditions, but provide the ability to automate actions based upon values and transitions of indicators.

For example, whole groups of people can be sent emails, voice, or text messages, according to the nature of the problem. Or some alternative system could be triggered to correct or bypass the problem, such as rescheduling business process instances that have stalled, activating a backup communication mechanism, or recording business process performance statistics.

Designing a business activity monitor requires:

1. Identifying the key factors to monitor
2. Locating the mechanisms - workflow events, integration messages, etc. - that can report the factors
3. Identifying thresholds and events that are important to note and / or activate automatic behaviors
4. Deciding on the best visual indicator for each key factor

BAM dashboards need to be customized for every organizational system and individual needs. This could be a barrier to their adoption, so it becomes important to pay attention to the features of both the information sources and the BAM tool to see if they will mesh. Process automation and application integration tools are providing mechanisms using XML and SOA to support BAM. Notification and control systems must permit BAM decisions to be expressed. Most BAM products provide templates and samples to assist in accessing these hooks in developing custom solutions.

By providing easily observed, realtime indicators of business activity, and through automation guarantee immediate notification and corrective action, BAM tools tie business process automation to the requirements of today's 24/7 business climate.