The 2007 BPM Suites Report
webMethods Fabric 7.0

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1 Product Overview

webMethods Fabric is a comprehensive BPMS that supports the end-to-end creation, analysis, and management of automated system-based processes, human tasks, and rapid process application development within the same environment. Fabric's process, presentation, analytics, and governance capabilities – combined with webMethods’ strong integration offerings – makes it applicable to almost any process-centric business scenario. In addition to BPMN based modeling, Fabric supports end-user task processing and composite application development. It also features an integrated business rules engine along with sophisticated Business Activity Monitoring (BAM) analytics, enabling the platform to address decision-intensive scenarios. Finally, built-in document management features – including the ability to integrate to third-party document management systems – enable Fabric to address document-centric projects. In short, webMethods Fabric is an impressive BPMS platform. (It recently captured the lead in the Forrester Wave: Integration-Centric BPM Suites, Q4 2006.)

webMethods Fabric includes the following key components:

♦ webMethods Designer – Eclipse-based modeling, design, and development environment; provides process design, task routing definitions, key performance indicator (KPI) design and composite application development (AJAX based) capabilities, and a rich metadata library for improved levels of reuse and dependency/impact analysis of processes and IT assets;

♦ Process and task engine, including application presentation;

♦ Embedded business rules engine (BRE);

♦ webMethods Optimize for Process analytics engine.

The main features and functionality of Fabric BPMS include

♦ Process modeling and automation – You can depict all elements related to a process (i.e., models, swim lanes, KPI trees, step transitions, and human task interfaces, etc.) within one Eclipse-based tool with views for both business and technical users. Business users benefit from easy-to-user documentation.

♦ Workflow, collaboration, and task management – Process participants can collaborate and perform the associated human tasks. You can also create sophisticated applications and interfaces using over 200 available drag-and-drop UI elements. Email integration enables task notifications to be sent directly to the user’s inbox.
Content and document management – Built-in document management supports processes influenced by procedures and policy; full lifecycle management of documents (e.g., check-in/out, versioning, etc.) is provided.

Semantic metadata library – provides a single view of all reusable assets (e.g., processes, subprocesses, services, etc.) which can be dragged and dropped into new processes; dependency and impact analysis allows users to see how changes impact related areas of the process.

System integration – Enterprise integration provides access to information from internal or external systems and data sources to facilitate system-to-system process tasks. Also includes sophisticated visual mapping capabilities to easily transform data between systems.

Rules management – webMethods embeds Fair Isaac’s Blaze Advisor BRE, allowing the BPMS platform to perform complex rule processing. Users can write, manage, and modify rules to meet changing business conditions without disrupting operations or requiring IT assistance.

Standards support – BPMN and BPEL are supported for process models; and JSR-168 and WSRP are supported for portal-based UIs. Other supported standards include JMS, SOAP, HTTP/S, FTP/S, WS-Security, SAML, XSD, EDI, WSDL, UDDI, edXML, Rosettanet, and SWIFT.

In addition to the core product, webMethods has an Industry Solutions Group that brings industry specialization and best practices to both new and existing customers. Vertical and horizontal “solution accelerators” are also available. These include education programs (BPM Master Class), ROI workshops (Business Case Accelerator), and the ability to deliver rapid “proofs of value.”

webMethods offers solutions covering 12 different industries, ranging from manufacturing, financial services, and government-to-consumer packaged goods (CPG). These include best-practices frameworks, process templates, and product support for industry-specific standards (See Section 10: Templates and Frameworks).

2 BPM Engine

Figure 1 provides an overview of the webMethods Fabric BPMS architecture, which includes

♦ Process, application design and runtimes
♦ Analysis engine and user interface
♦ Optional service bus for expanding the architecture
♦ Integration for adapting and mapping data
♦ Metadata library
♦ SOA registry

SERVER ENVIRONMENT

webMethods uses a Java-based service oriented runtime to execute business logic, including process flow, adapting to back end systems, connectivity to partners, and data manipulation. This proven runtime is used by more than 1,500 customers worldwide in highly critical business solutions and offers a flexible architecture supporting scalability, high performance and fault management. Users can deploy solutions on single machine instances or across any number of dispersed machines, offering both horizontal and vertical scalability as well as geographic distribution options.
The runtime executes the business processes by calling services, managing step transitions, and publishing activities to end users, all the while auditing and tracking each process instance. The analytics engine correlates these instances into summary information.

The webMethods SOA orchestrates services while managing the flow of information between services, logging, and auditing, and supporting the ability to do publish/subscribe or request/reply communication channels. The engine supports human workflows (i.e., executing the required “services” where people are involved in the process).

Business analysts and developers create the activity routing rules using the same tool that they use to draw their process models – webMethods Designer. Tasks defined in Designer call the runtime to present users with user-driven activities. Routing activities to users can be simple (e.g., always present this to Jane Smith), complex based on role (e.g., always route this to customer support) or complex based on data in the process (e.g., route to customer support if x > y, else route to Jane Smith). Users interact with these tasks through a Web-based “Inbox” application, or via their own email system. The engine is flexible in that it allows users to escalate, delegate, and manage their workload. The engine also enables auditing and monitoring of end-user activity, serving up a browsable history for managers and end users to perform continuous improvement.

The engine also supports process animation for both business users and technical users. This advanced, easy to use, debugging-like capability allows users to ensure the process flows as expected with varying data sets. Finally, the individual process instances are “glued together” through a common monitoring solution.
CLIENT ELEMENTS

webMethods Designer

Both business analysts (BAs) and developers use webMethods Designer to collaboratively and iteratively model, design, develop, and optimize business processes. BAs use Designer through a simplified perspective that is customizable to their particular skill level. Developers use it to incrementally elaborate on the design by linking process steps to services, building out subprocesses and creating advanced configurations. With process design, task routing, and UI design in a single (Eclipse-based) environment, implementation is accelerated. Users define data formats, logging levels, and process flow once. The same process designed by BAs is deployed and monitored, enabling increased participation by the business in improving the process later.

In addition to a searchable metadata library of templates categorized by their relevance to the process or application at hand, developers are also provided with hundreds of pre-built controls and services to enable the rapid delivery of composite applications (Figure 3).

Figure 3. webMethods metadata library improves governance through dependency analysis for any process component.

webMethods offers a RDF/OWL based repository of all assets. These include processes, tasks, UIs, rules, services, document types (schemas), and trading partner information. This shared library helps users quickly find reusable objects through browse, search, advanced search, and saved search functions. Change impact analysis is another feature of the library that enables users to quickly understand the downstream impact to any change.

My webMethods

My webMethods is an out-of-the-box browser-based monitoring, administration, and management console used by both BAs and administrators to monitor production processes and to determine the best path to process improvement. This same UI can also be used to serve up the task inbox for people
participating in the process. From here, it is possible to use any number of ways to present the user with the forms they complete and evaluate as the process progresses (See Section 3.3: Forms).

WEB SERVICES

Delivering User Information

WebMethods offers several options for delivering information to users, including

♦ Design and present, using webMethods Fabric: Fabric features a customizable browser-based “Inbox” that can present tasks to end users. These can drive the user to applications of any complexity, including single pages, multi-pages, customized portlets, and documents, etc. webMethods also offers its own runtime to serve up this UI.

♦ Design in webMethods but present with another application server: webMethods allows users to design interfaces that are JSR 168 and WS RP compatible, and which can be surfaced using other portal-based application servers.

♦ Design and present with another application sever: webMethods offers Web Services-based APIs into the BPMS engine, thus allowing the design and presentation of the application to be constructed in other application servers and seamlessly integrated with the process flow.

APPLICATIONS AND PROCESS

Integration with databases, packaged applications (e.g., SAP, Oracle, Siebel, etc.), or other queuing and application servers is supported with webMethods’ integration platform. Basically, all interaction between systems is represented as a service, and any service can be used by processes and the composite applications that surround them.

Support for SOA

Fabric is an SOA-based platform. Every step of a process is a service, whether that service is calling APIs or presenting tasks to people. Any service can be a Web Service, and the platform supports complete Web Service orchestration.

To enable easy reuse of existing services, either those created and run in Fabric or those created using other applications, webMethods offers a UDDI registry and management platform (webMethods Infravio X Registry). Any service known to this registry or known natively to Fabric is usable in the process flow, presentation, and management of the application.

At the Web Service standards level, webMethods supports SOAP 1.1, 1.2, SOAP with Attachments, MTOM/XOP, WSDL 1.1, UDDI (v2 and v3), WS-Security 1.0 (including basic authorization), X.509 based cert auth, SAML assertions, and WS-I basic profile. WS-I Attachments and WS-I BSP are also supported. webMethods is also committed to supporting future Web Services standards (as they are adopted; e.g., WS-Transactions, WS-ReliableExchange, WS-Addressing, and WS-Notifications, etc.).

2.1 Platforms

Supported platforms include Microsoft Windows, Sun Solaris, IBM AIX, HP-UX, Red Hat Enterprise Linux, and SUSE Linux Enterprise Server. Supported databases include Oracle, MS SQL Server, and Sybase.

2.2 User Interface

In webMethods, interfacing to humans is completely integrated with the process. Heavily people-driven processes – including multi-page application flow, call outs to other systems, person-to-person collaboration, and escalation to others (i.e., personalized routing) -- are all supported. For highly systems-focused processes, the platform can enable simple human error handling as well. Users receive
their activities through email or via a browser-based application of their choice. The level of information provided in the activity is customizable (activity and partner information is passed with priority so they know which tasks to prioritize over others). webMethods also supports programmatic prioritization of user activities.

The webMethods inbox is browser-based and customizable. From the fields displayed to the content delivered in them and the order of the tasks themselves, the user is afforded the flexibility to understand and prioritize the workload.

The inbox offers delegation, escalation, and ad-hoc routing of tasks. Optionally, administrators can configure the tasks for delivery to any email program. From a browser, users are able to interact with rich applications that include the refreshing of data without page refresh as well as multi-page applications. They can also collaborate with other users and drill down into details. The result is an end-user experience that feels like a thick-client application but which is served up by a browser.

webMethods can also present activities or tasks to end users via Microsoft Outlook, including exporting query results to Excel (for example, exporting completed activities). You can also launch any document during the process, with versioning and document management capabilities further supporting user collaboration.

Systematic workload balancing is supported through automatic work distribution to users, roles, or roles with certain attributes (e.g., Manager Role with approval capacity >$500K and Region = West). Additionally, escalations and routing based on calendars is also supported, while manual workload balancing is offered via graphical tools for task reassignment.

Finally, users can collaborate via chat, online forums and discussion groups, or by adding notes and documents to tasks that are part of a business process. Users can also re-route activities to other people with the appropriate skill set.

2.3 Scalability

Fabric supports various scalability options, including clustering and a distributed load-balancing architecture. In the software cluster configuration, client requests directed to a server in the cluster are forwarded to other servers in the cluster for processing based on a user-specified algorithm (e.g., least-recently-used, fewest-pending-requests, or round-robin, etc.).
Using an optional high-speed publish and subscribe messaging capability, administrators gain support for a unique federated load-balancing topology, whereby message traffic can be localized into zones (called “territories”). This supports the deployment of topologies where messages are only forwarded to zones where there are applications interested in those messages (otherwise remaining within their zone). This feature makes it feasible for multi-national companies to implement a single messaging backbone without unwanted traffic straining all parts of the network.

webMethods does not have any constraints (aside from disk space and available RAM) that limit it to processing a message of any size. It also features built-in mechanisms and sample architectures that allow for large message processing without affecting the processing of other messages (e.g., those that are time sensitive) or other resources running on the server. And large message support is applicable to any type of process data.

webMethods’ flexible architecture allows it to scale smoothly to support global deployments and large enterprise transaction volumes. This extensible design lets companies deploy an integration backbone incrementally, adding processing power when and where it is needed. For example, companies might start with a basic department-level solution consisting of a single server instance linking two back-end systems with five users. As needs grow, the platform can be extended to more users and applications by deploying additional servers, tying them together via messaging.

Apart from being able to extend the system, you can also selectively bolster the architecture in areas of high traffic. By deploying components in clustered configurations and territories, performance bottlenecks can be eliminated and the overall workload streamlined.

Clustering allows a group of runtimes to act as a single entity. Basically, a clustered configuration increases throughput and improves performance by distributing requests among a group of servers. When runtimes are configured to operate in a cluster, clients submit their requests to a server in the cluster. When the request is received, it is automatically directed to a server in the cluster using either a least-recently-used or fewest-pending requests technique, depending on how the cluster is configured. Because this activity is transparent to the client/user, clustering makes multiple runtimes appear and behave as one. For example, a high-volume process, like a bank’s straight through processing requirements, might overwhelm a single instance. But a clustered configuration can execute multiple requests simultaneously, thereby boosting performance and throughput significantly.

In addition to this built-in clustering capability, webMethods BPMS supports third-party load balancers (e.g., Cisco’s LocalDirector). These external hardware-based products can provide high-performance load balancing using algorithms that are based on network metrics.

**Customer Scalability Examples**

webMethods’ componentized architecture allows for flexible solutions that span highly system intensive processes, to those consisting of a mix of systems and people to highly people intensive processing. One of webMethods’ largest system-to-system process installations (in terms of transaction volumes) has 1,000s of concurrent process instances running, with each execution of a process model (i.e., process instance) resulting in the execution of 25 subprocesses. Each process instance runs anywhere from 250 to 500 total process steps. This customer’s application runs 60,000 to 90,000 transactions in 30 minutes, with a peak load of 12K process steps/sec. It is available 24x7 and has been in production for more than two years.

One of webMethods’ larger people-focused implementations has 15,000 users registered to participate in the process, with about 500 concurrent users interacting at any one time. It generally has about 20,000 tasks in an active or queued state.
webMethods BPMS allows both business and technical users to work iteratively on new projects using a single, unified tool that encapsulates process modeling, composite application design, and user task design. The design environment supports users of various skill levels, and enables the use of source code control, versioning, and debugging. It is also persona based, with all the BPM features you would expect for business analysts, developers, and administrators.

Figure 4. webMethods Designer showing business analyst (left) and developer (right) views.

Figure 4 shows both business analyst and developer views in webMethods Designer. Business people design and document processes, UIs, human task routing rules, business rules, and KPIs, depending on their skill level. Thus, the tool is customizable to the user’s particular skills. For example, business analysts design process models and document the processes and/or individual steps of the process. Consequently, the default BA view hides the technical details. As the analysts document the process, they can add “sticky notes,” viewed inline with the process, or pick from default lists of property values at the step or process level. They can also link to external documents (e.g., Use Cases or other specifications) through URLs, or provide details to be stored with the process itself. This documentation can be printed along with the process model.

In Developer view, Designer exposes the necessary technical details to implement the process steps, using existing services known to Fabric. Developers work from the same process model defined by the BA and the corresponding documentation they provided. They may edit the current model or expand on steps to make them complete subprocesses. Developers then link the steps of the process to services, task routing definitions, or business rules. All services are backed by webMethods’ integration platform and can interact with any application and/or be Web Services.

### 3.1 Subprocesses

webMethods uses the BPMN modeling notation, which advocates the use of subprocesses, swim lanes, and pools. Subprocesses are first class citizens in that they are processes with documentation and linked to services for their execution logic. You can graphically group steps together into a subprocess so that,
as designers interact with a large process, they can easily collapse a large number of steps into a subprocess to abstract the details, expanding it only when needed. Additionally, users can reuse subprocesses as steps in larger processes. The metadata library capability (Section 2) provides a searching mechanism for accessing processes and subprocesses. Reusing any subprocess is as easy as “drag-and-drop.” Finally, it is possible to add subprocesses at any point in the development lifecycle, and process and subprocess can be versioned and deployed independently.

3.2 Shared Data Space

Data captured during processing is stored in a database, with process-related data stored in a star-schema format. The later enables easy access and analysis of process data by webMethods’ analytics engine or for displaying in a dashboard as well as access by any popular BI reporting tools.

3.3 Forms

Fabric can present activities to end users in three ways. Users can use Designer’s codeless application development capabilities to build and present the task UI via webMethods’ runtime. Alternatively, these can be created in Designer, and any JSR 168-compliant engine can be used to present the application to end users. Finally users can use a third-party application to build and run the application and then connect that application to the process using webMethods’ Web Service-based APIs. Most webMethods’ customers build codeless applications using webMethods Designer. These applications can be AJAX-based, offering a rich thick client like experience in a browser application. webMethods provides more than 200 out of the box controls and the ability to automatically lay out the data associated with any service, making UI forms creation straight forward for even junior developers.

Any step of a process can be linked to a UI. The UI may appear as webMethods is routing traffic to end users of the process, or the UI may be viewed in the context of process management. As mentioned earlier, the end user experience is a “rich” client experience: Automatic refreshing, in line error handling, multi-value selection pop-ups, and other AJAX-based abilities that make the browser feel like an installed application are all supported. Finally, end users can collaborate, access documents, and manipulate data across many pages of forms if necessary.

Figure 5. Eclipse-based design environment unifies all aspects process design including forms design.
3.4 Time

As a process instance progresses through its lifecycle, webMethods audits the transaction and its status against the expected service level agreements as defined. Designers can define time-based escalations to handle cases where tasks go unanswered by one or more users. Alerting capabilities allow managers to monitor the health and behavior of the systems and the activities of the people who keep the process flowing. Work performed by other applications or beyond the preview of the process is monitored using rules defined by the process step (e.g., you may time out a call to another system and retry or timeout and send an error for administrative intervention, etc). Routing rules and timers may be impacted by business- and user-based calendars as well.

3.5 Process Optimization and Simulation

webMethods BPMS lets you see and control business processes as well as all related activity including transactions, KPIs and monitoring rules. The platform combines business activity monitoring (BAM) with process monitoring to offer event management, alerts, root cause analysis, learning, and prediction, to guide users towards business process improvement. By combining historical analysis with prediction, the platform provides users with greater insight and understanding as to how processes are currently behaving as well as how they will behave in the future, thereby assisting managers and BAs in their efforts to maximize process performance.

Out of the box, users benefit from detailed information on what is happening now, with the ability to fix issues immediately; graphical views of potential bottlenecks with the ability to strategize on bypassing the blockage; and improvement suggestions, depicting how changes in one area may positively (or negatively) affect another.

Currently, webMethods provides a simulation-like feature that is used to ensure the business process is acting as expected with the expected results and measurement. (An advanced closed-loop simulation capability, based on an embeddable third-party full-featured simulation tool, is planned for release later this year.) Using the process execution engine itself, not just an emulator, you can "step through" your processes or "step to" particular points in the processes. You can also construct sample data, or point to sample documents, to submit data to a process. And, after you have animated your process, you can then save your parameters to repeat the tests. In short, these enhanced capabilities enable users to develop and enhance business processes over multiple iterations.

Additionally, webMethods offers an optional implementation paradigm called “measure first.” Because starting with a lengthy “as is” and “to be” process discovery task can lead to “analysis paralysis,” webMethods enables the concept of “measure first.” Following this discovery paradigm, users instrument the current process and measure end-to-end performance to determine the best place to focus process improvement initiatives. Based on these quantitative metrics, users analyze the specific area of focus that would offer the greatest business value. This allows users to focus and model with a purpose. Over time, users can build out more of the process, optimizing it incrementally where they foresee the most benefits.

webMethods BPMS also includes built-in support for Six Sigma. Specifically, it will automatically track problems and exceptions to enable Six Sigma analysis and let you create Pareto (80/20) charts highlighting the major contributors to business issues. Finally, all of webMethods’ features are designed to support the webMethods Process Improvement Lifecycle (PIL) Methodology.

4 Business Rules

webMethods Fabric embeds Fair Isaac’s Blaze Advisor BRE. In addition to using Blaze Advisor for automated decision-making, rules are used throughout the BPMS platform to define processing paths,
important measurements, and how users interact with the process, as well as to enable alerting (in BAM) and for managing user authorization.

Rule logic is defined in Blaze Advisor's UI and called, like a service, directly from the process engine. Rule design is straightforward, and rules can be presented in simple tables or more complex visual decision trees. You can also use Blaze’s rule validation features to help ensure that rules are applicable to the business processes. Once defined, rule services can be reused in any number of business processes.

Because business rules are managed outside of the process, users can dynamically change the rules that are executed within a process by either directly editing the rules within a production environment, or by editing them within Blaze and then promoting the rules through the normal lifecycle. This agility enables users to react to changes in the business without having to re-deploy the entire process and related services.

5 Integration and Integration Engines

Fabric began as a service-oriented integration platform. As such, the same runtime used to orchestrate and manage processes executes service calls that interface with other applications and mediates traffic between applications, business partners, and people. The runtime provides a robust, standards-compliant platform that supports the latest data transfer and Web Services standards including J2EE, JSP, XML, XSLT, SOAP, and WSDL.

webMethods offers readymade adapters for SAP, Siebel, Oracle, J.D. Edwards, Peoplesoft, Lotus Notes, Ariba, Commerce One, and other enterprise applications. Database connectivity to all JDBC-compliant databases is supported. In all, webMethods supports adaptation to more than 120 applications. An Adapter Development Kit is also available to help jump-start integration with other applications. (Adapters provide XA-based transactionality when the back-end systems support it.)

For application communication, webMethods supports HTTP/S, SMTP/S, FTP/S, and JMS. It supports SOAP-based communications, using Document or RPC as the style and Literal or Encoded as the usage. There is support for SOAP over HTTP, and JMS is also supported, and adapters are available for communicating natively with IBM Websphere MQ and MSMQ. The CORBA API is also supported and webMethods offers COM, C, and C# APIs for services and messaging.

webMethods supports a variety of message formats, including XML, flatfile, EDI, EDIINT, and others. Finally, webMethods offers standard support for Rosettanet, eChem, UCCNet, SWIFT, ACCORD, and other industry standards.

6 Organizational Structure

Organizations, users, and groups are defined using the customer’s existing LDAP stores. As described earlier, work can be routed based on the user, the role, or other more complex data. Routing can also be impacted by corporate or user-based calendars. By working off the existing infrastructure available at most customer sites, rather than requiring the lengthy set up of users, groups, roles, and calendars, webMethods believes it can shorten implementation and ease the maintenance of the implemented solution.

7 Process Adaptability

In addition to the process versioning supported (see Section 8), end users can redirect process traffic using the platform’s advanced delegation, escalation, and ad hoc routing capabilities. This allows users to push work to others (users or groups of users by role) who are better equipped to handle it. As work is routed, every action is closely audited so the work done is monitored closely and analyzed for
improvement in the future. Users can also collaborate with others via Wikis, chat, and documentation stored locally in the platform’s document management library.

8 Process Lifecycle

webMethods supports process versioning and service versioning. Thus, at any level the process may adapt to the changing logic. Existing transactions will finish in the version they began and new transactions will execute in the new version. Also, as previously mentioned, webMethods’ BRE supports the externalization of business rules (See Section 4). And rule changes can be done by authorized users leading to the high flexibility in the business model.

Other solution assets include process, forms (UI’s), KPIs, and services, all of which are backed by source code control systems that enable the ongoing development and management of the solutions across large geographically distributed teams.

Deployment of solutions is supported by webMethods’ built-in administrative capabilities. When solutions are ready for deployment for the first time or subsequent times, developers create deployment sets, and administrators use the scripts generated to quickly deploy all relevant assets to target servers. This eliminates the need to make changes to production configurations and ensures high-quality, seamless rollout of production-ready solutions.

9 Monitoring, Measurement, and Management Information

webMethods’ BAM capability is integrated into the BPMS platform. webMethods takes an innovative approach to process monitoring and optimization. While most platforms have you model a process first, then measure, webMethods philosophy takes the notion that you should measure first – the belief being that this enables you to understand how well the business is performing today, and that it provides insight on where to focus your efforts in order to achieve the greatest results in the future.

The BAM component has various features to assist users with analyzing and optimizing processes. These include graphical process analytics that guide the user through iterative process improvement; comparative and visual KPI monitoring dashboards; and guided performance analysis.

webMethods’ BAM capabilities are designed to address process analysis and optimizations issues in various ways, including

♦ **Monitor the “as-is” to analyze and fix the actual problem** – You can immediately start monitoring business systems and service performance to determine current status of KPIs, Service Level Agreements (SLAs), etc., in a highly graphical dashboard.

♦ **Advanced analytics show actual variance, not averages** – The BAM engine can “learn” what is normal, and then illustrate the actual variance from the norm, as well as show where this variance is occurring within a process – in real time.

♦ **Out-of-the-box process KPIs** – For every process deployed, the BAM engine measures the volume, velocity, and errors for the process. Users can also create any number of customizable measurements for the process.

♦ **Adapt/improve end-to-end process** – Process problems are graphically presented, providing insight into which changes will bring the biggest impact.

♦ **Collaborate and implement improvements within the same tool** – Because BAM is tightly integrated into the BPMS platform, you can create/implement process strategy against business vision (i.e., the design/model); test and prove the strategic plan; and collaborate and share as corporate asset.
In addition to summary views, the BAM component provides end-to-end technical monitoring of individual process instances, documents, services, hardware, software, and partners, with real-time analysis and alerts. Enhanced Web Services management and brokering capabilities, along with predictive quality-of-service monitoring, allow organizations to deploy Web Services-based solutions on an enterprise scale. For this fine grained monitoring, webMethods generates statistical baselines for normal activity. Each unique instance of the data is evaluated against this known performance pattern and can generate notification alerts based on behavioral abnormalities. These alerts can be either visual in an interactive dashboard, or sent via email.

webMethods’ prediction engine applies advanced algorithms to record normal behavior across one or more KPIs and to react accordingly. Users receive visual cues that guide them to the root cause of a problem and, if appropriate, present them with actionable links to correct it (Figure 6). Visual monitors, available for each deployed process, allow business users to quickly see how a process is behaving, as well as where they should focus their efforts should they want to optimize the process.

The process instance monitor is customizable and flexible. Every instance can be monitored to a user definable level (i.e., monitor every step of the process or only specific steps). Instance detail is displayed along with the process itself so that end users may understand the context of the instance in the larger process. Customizable instance IDs help users find specific instances quickly – for example, “Show me all orders in my order process submitted by Wal-Mart today.” Also, users can search, sort, filter, apply saved searches, and customize the results displayed.

The monitor has a built in dashboard, which is also role-based at the data and activity levels. Users can view the data graphically or in a tabular format. And graphical displays offer drill down to detailed information.
Processes, services (wsdl, invoked, or event based), documents, partner data, and KPIs are all viewable (and can be related) in the same monitoring UI so users can view a summary or drill down into details, following a logical path or going directly to the trouble spot. UIs also offer the ability to define SLAs for services, partners, and processes. These business or service "rules" can fire alerts, driving users or the system to immediate action. Information about the process is stored for analysis until purged.

All work completed, passed onto others, and in a wait state can be monitored in the My webMethods administrative console, which provides out-of-the-box statistics gathering to enable administrators to keep up with the workload. Users can display waiting tasks by age, by severity, by user, or any custom data.

Finally, security is imposed using LDAP-based user and groups. Permissions can be set at the feature or data level (i.e., show all “in progress” tasks to one user and show all “in progress” tasks for “Wal-Mart” to another user, etc.)

10 Templates and Frameworks

webMethods offers solutions covering 12 different industries, including manufacturing, financial services, government, and CPG. These range from industry “frameworks” (blueprints for the best-practices application of their products), process templates, and product support for industry-specific standards like SWIFT (Financial Services), RosettaNet (High-Tech), UCCnet (Retail), PIPX, CIDX, and more. In addition, webMethods’ Solutions Group has deep expertise in process, Six Sigma and Lean process improvement, and other methodologies.
Figure 8. Guided performance analysis automates problem detection and directs users to their root cause.

11 Vendor

Founded in 1996, webMethods, Inc. is headquartered in Fairfax, Virginia, and has offices throughout the United States, Europe, Asia Pacific, and Japan. The company is publicly traded (NASDAQ: WEBM) and has approximately 945 employees worldwide.

webMethods has more than 1,500 customers, including Global 2000 leaders such as 7-Eleven, Cable & Wireless, Environmental Protection Agency, Idaho Power, Key Bank, Motorola, Office Depot, and Wells Fargo. Strategic partners include Accenture, CGI, BearingPoint, BMC Software, Capgemini, CSC, Deloitte Consulting, EDS, GXS, i2 Technologies, Infosys, Lawson Software, TCS, and Wipro.

webMethods maintains a significant global presence, with approximately 45 physical locations across The Americas, Europe, Middle East, and Africa, and Asia Pacific/Japan, and two offshore development centers in India (Bangalore and Chennai). It has approximately 350 distributors and resellers around the world.

webMethods technical support is available around the clock, with support engineers located in Fairfax, Virginia; Sunnyvale, California; Amsterdam, the Netherlands; and Bangalore, India.

12 Cost

webMethods Fabric is sold under a hybrid-pricing model based on CPUs and Unique Users. The entry-level QuickStart offering bundles all components of the BPMS platform; it can be deployed on any number of CPUs with a minimum of 2 and up to 10 Unique Users (a Unique User is a process participant/end user, not a business analyst or IT user). Additional CPUs and Unique Users can be added incrementally. A Professional Services QuickStart package is also available in conjunction with the BPMS QuickStart, giving customers access to the implementation expertise they need in order to be successful on their initial BPM project. Offerings are also available on a project-specific basis. This project-specific package provides the flexibility to meet a particular customer's needs and price according to value, without forcing them to take a pre-configured package of components, CPUs, or
users. webMethods also offers specific packages and incentive pricing for existing webMethods Fabric customers.

The average license price for an initial implementation is US $150,000, and the lowest possible price for this product is US $80,000. Annual maintenance cost is 20% of license cost. The webMethods Software Maintenance Plan gives customers access to the latest software release of all products for which they are licensed in addition to service packs and fixes when released. Additionally, webMethods continues to evolve their process frameworks including process, KPIs, data structures, and sample services while providing these assets to customers to inspire innovative solutions.
# webMethods, Inc.: Fabric, Version 7.0

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td>SOA-based BPMS enabling the automation, monitoring, and improvement of business processes.</td>
</tr>
<tr>
<td><strong>BPM Engine</strong></td>
<td>A scalable, proven engine that works on the continuum of business processes spanning heavily human intensive processes, system to system orchestration, and a mixture of both.</td>
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<tr>
<td><strong>Platforms</strong></td>
<td>OS: Microsoft Windows, Sun Solaris, IBM AIX, HP-UX, Red Hat Enterprise Linux, and SUSE Linux Enterprise Server. DBs: Oracle, MS SQL Server, and Sybase.</td>
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<tr>
<td><strong>User Interface</strong></td>
<td>Rich applications delivered by using Fabric’s codeless application environment or using any other application server based forms.</td>
</tr>
<tr>
<td><strong>Scalability</strong></td>
<td>Proven scalability and performance from timely high volume system based processing to lengthy long running people intensive processing.</td>
</tr>
<tr>
<td><strong>Process Modeling</strong></td>
<td>BPMN based modeling for business analysts or technical staffing tightly tied to forms design, routing rules, business rules, KPIs, and services.</td>
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<tr>
<td><strong>Subprocesses</strong></td>
<td>Inline subprocesses for configurable process views and reusability at the process level.</td>
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<tr>
<td><strong>Shared Data Space</strong></td>
<td>Database backed development assets along with customizable runtime auditing and logging.</td>
</tr>
<tr>
<td><strong>Forms</strong></td>
<td>Easy-to-develop rich applications offering end user ease of use and customization.</td>
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<tr>
<td><strong>Time</strong></td>
<td>Completely embedded understanding of business and user calendars along with time based escalation and alerts.</td>
</tr>
<tr>
<td><strong>Optimization &amp; Simulation</strong></td>
<td>Out-of-the-box process KPI and visual process information for guided process improvement.</td>
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<tr>
<td><strong>Business Rules</strong></td>
<td>Embedded Fair Isaacs’ Blaze business rules engine (BRE).</td>
</tr>
<tr>
<td><strong>Integration</strong></td>
<td>Based on SOA-based integration platform for adapting to literally any system, partner, or data format.</td>
</tr>
<tr>
<td><strong>Organizational Structure</strong></td>
<td>Works with customer’s current authorization and authentication systems.</td>
</tr>
<tr>
<td><strong>Process Adaptability</strong></td>
<td>Process versioning, rule externalization, and ad hoc routing enable a customizable processing experience.</td>
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<tr>
<td><strong>Process Lifecycle</strong></td>
<td>Iterative process improvement supported by testing, versioning, and source code control based assets. This is further supported by webMethods’ differentiated metadata library offering dynamic reuse along with change impact analysis.</td>
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<tr>
<td><strong>Monitoring &amp; Measurement</strong></td>
<td>Out-of-the-box monitoring (at instance level), business activity monitoring (BAM) (at the summary level), and guided process improvement.</td>
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<tr>
<td><strong>Templates &amp; Frameworks</strong></td>
<td>Library of proven industry templates.</td>
</tr>
<tr>
<td><strong>Vendor</strong></td>
<td>webMethods, Inc.; 703-460-2500; <a href="http://www.webmethods.com">www.webmethods.com</a></td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Various pricing and packaging options available.</td>
</tr>
</tbody>
</table>