



WebSphere software

Exploring key facts about business process management with IBM WebSphere software.

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Contents
2 Executive summary
3 What is BPM?
5 How does WebSphere software from IBM enable BPM?
6 Fact one: Market analysts state that there are many types of business processes to be served by BPM
9 Fact two: WebSphere enables you to do BPM enabled by SOA
12 Fact three: WebSphere Process Server fully supports integration-centric and human-centric BPM
18 Fact four: WebSphere Process Server enables business users to easily interact and collaborate with business processes
23 Summary
23 For more information

Executive summary

This white paper explains four critical capabilities and strengths of the IBM WebSphere® business process management (BPM) offerings, and helps to position them relative to offerings from other vendors. It begins with a brief introduction to BPM as a discipline, combining software capabilities and business expertise to accelerate process improvement and facilitate business innovation. Then, it provides an overview of the key WebSphere BPM products. It also categorizes the types of business processes to be served by BPM, ranging from content-centric to human-centric and integration-centric processes.

You will also learn why it is critically important to combine BPM with service oriented architecture (SOA), enabling composition of business processes from services and exposing them in turn as business services. This fundamental paradigm behind IBM WebSphere Process Server, the cornerstone of the WebSphere BPM software platform, supports the capability of companies to perform BPM enabled by SOA. The WebSphere BPM platform focuses on the support of integration-centric and human-centric business processes in a truly integrated, services-based and transaction-supported way. This white paper further elaborates on the specific strengths of WebSphere Process Server in the area of human-centric BPM and human workflow, enabling human tasks as a specific form of services and providing rich support for business users interacting with business processes.

Introduction

What is BPM?

BPM is a discipline combining software capabilities and business expertise to accelerate process improvement and facilitate business innovation. BPM governs an organization's cross-functional, core business processes. It helps you achieve your strategic business objectives by directing the deployment of resources from across the organization into efficient processes that create customer value. This focus on driving overall top- and bottom-line success by integrating verticals and optimizing core work (such as order-to-cash, integrated product development and integrated supply chain) differentiates BPM from traditional, functional-management disciplines. In addition, intrinsic to BPM is the principle of continuous improvement, perpetually increasing value generation and sustaining the market competitiveness (or dominance) of the organization.

You can benefit from BPM through:

Process insight and optimization

The first step in many BPM engagements is to simply monitor what is happening. Having the ability to truly understand what is happening inside the business will then cement and facilitate the ability to enhance the most important and impactful parts of an organization.

Accelerated process improvement

This benefit is not just about improvement and optimization. It's about how fast you can identify the parts of the business that will drive change and how fast you can implement and deploy those changes to make the improvement happen.

Flexible design for future change

Finally, it's critical to not only make the changes once, but to be prepared for the inevitable future changes that every organization faces. Using an SOA complemented by best practices helps ensure that the deployed and optimized processes can be adapted as flexibly as possible to changing business needs.

The combination of expertise and software is important. Expertise does not equate simply to implementation services. Sure, expertise can be in the form of services, but today, it's much, much more than that. Expertise is the knowledge about the BPM engagement, but it can be packaged in different forms – not only as services, but also as prebuilt components based on best practices, prebuilt process models and agreed-to methods.

For software, IBM has based the set of capabilities that it brings to market on discussions with hundreds of IBM clients, as well as on in-depth reviews with leading industry analysts and independent BPM thought leaders. The key capabilities that IBM has identified are modeling tools with simulation and analysis, policies and rules, an integrated development environment, runtime environments and a management environment that includes dashboards and monitoring. Repositories, such as service repositories to register and house SOA-based business services, help accelerate projects.

Finally, BPM enabled by SOA is a discipline enhanced by a flexible IT architecture to accelerate the creation and reuse of business services in support of efficient process change and rapid process deployment. Bringing together the most-advanced SOA-based software capabilities, along with broad expertise, helps provide a higher-value BPM solution.

BPM can speed the rate of business change and increase IT effectiveness. However, to implement BPM solutions, tools to model, assemble, deploy and manage processes are needed. To that end, IBM, through its WebSphere software platform, offers a comprehensive suite of tools to implement BPM solutions.

How does WebSphere software from IBM enable BPM?

Support of BPM in WebSphere software follows a holistic approach, supporting all phases of the BPM life cycle, from modeling through development (the assemble phase), deployment (the run phase) and monitoring of business processes.

It all begins with IBM WebSphere Business Modeler, a tool targeting the business analyst. WebSphere Business Modeler helps your organization fully visualize, comprehend and document its business processes. Rapid results can be obtained through the collaboration function, where subject-matter experts team to clearly define business models and eliminate inefficiencies. They can model business processes, then deploy, monitor and take actions based upon key performance indicators (KPIs), alerts and triggers for continuous optimization. Business processes then get tightly linked with strategic corporate objectives.

At the heart of the WebSphere BPM offering is IBM WebSphere Process Server, a high-performance business-process engine that runs critical business processes securely, consistently and with transactional integrity. WebSphere Process Server helps orchestrate the assets of a business to form highly optimized and effective processes. This capability can help you meet your business goals, for example, by automating manufacturing processes, by efficiently processing insurance claims and financial payments or by running an efficient supply chain – all helping to ensure compliance with the latest industry regulations.

WebSphere Process Server contains IBM WebSphere Enterprise Service Bus (WebSphere ESB), which mediates disparate services, helping to maximize reuse of assets wherever they are – regardless of vendor, platform, or whether they are built by companies themselves or provided as part of packaged applications.

In addition, WebSphere Process Server uses IBM WebSphere Integration Developer as its companion tool, providing an integrated developer experience. One tool, one set of skills enables you to refine business processes created with WebSphere Business Modeler, preparing them to run in the actual production system. WebSphere Integration Developer also enables you to define orchestrations between processes, construct mediations between services and truly integrate the capabilities previously locked away in packaged business applications.

Finally, IBM WebSphere Business Monitor enables you to monitor business processes in real time, providing a visual display of business-process status to manage performance and take action for improvement.

All of the previously mentioned products are complemented by IBM WebSphere Service Registry and Repository, an enterprise-wide service registry and repository that helps improve visibility, reusability, adaptability and manageability of services.

Key facts about BPM with WebSphere software

Fact one: Market analysts state that there are many types of business processes to be served by BPM

BPM has evolved over the past ten years from a number of technology precursors, including workflow, application integration, process automation and enterprise document management. Correspondingly, IBM continues to see a variety of different approaches to describe and segment the BPM market.

In its report on BPM systems, Forrester Research distinguishes between integration-centric processes and human-centric processes. In the human-centric category, Forrester further differentiates between people-intensive, decision-intensive and document-intensive processes. At the other end of this spectrum, integration-centric processes focus on automation of processes that integrate (in other words, span and connect) applications and systems, but may also require human interaction.¹ Further details and examples about these different types of business processes can be found in the Forrester report, “Demand for Business Process Management Suites Will Accelerate Through 2009.”

Forrester has also provided market size and growth estimates for the integration-centric and the human-centric BPM market subsegments. “The overall size of the worldwide BPMS [BPM system] market (based on software license, service, and maintenance revenue from BPMS product vendors) reached approximately [US]\$1.2 billion in 2005— split almost equally between the human-centric and integration-centric providers. The integration-centric portion accounts for approximately [US]\$639 million in 2005, a somewhat larger figure in comparison to [US]\$610 million for the human-centric segment during the same period. Forrester expects the BPMS market to reach [US]\$2.7 billion by 2009.”²

In this context, it is very important to note that the WebSphere BPM offerings around WebSphere Process Server address both the integration-centric and the human-centric market segments that have been identified and sized by Forrester. See the section of this white paper called “Fact three...” for further details about what WebSphere Process Server is achieving to address this combination, and for details about the specific strengths WebSphere Process Server offers for human-centric BPM.

No statistical data is available about how real-world processes that are the subject of BPM projects map to the previously discussed categories. From a practitioner’s point of view, the BPM scenarios and use cases that can be found in client projects span a broad range of business-process types, where “pure” occurrences of the above categories appear rarely. In most cases, organizations require combinations of the following categories:

Integration-centric processes

The majority of integration-centric processes require human interaction and human workflow to process exceptions or make critical decisions. You need seamless integration and interchangeability between automated, IT-level steps and human-facing steps in your business processes. WebSphere Process Server is designed to meet that requirement. Prior to WebSphere Process Server, you would have had to use different technologies for integration-centric processes (such as IBM WebSphere InterChange Server and IBM WebSphere Business Integration Server Foundation) and for human-centric processes (IBM WebSphere MQ Workflow).

Human-centric processes

In most human-centric processes, integration capabilities are required either from the very beginning or when business processes evolve, to increase the degree of automation and to help reduce labor costs. Organizations that have started with a purely human process implementation might quickly find themselves on a dead-end road if their infrastructure does not support integration-centric capabilities to automate low-value, labor-cost-intensive human steps, and replace them with unattended services, where appropriate.

Document-centric processes

The vast majority of document-centric processes involve humans. All business processes involve data in some form. In some (but not all) cases, especially with human-centric processes, this data is referred to as *documents*. Because paper documents and their image-based electronic counterparts are increasingly replaced by electronic documents, forms and other structured information, the term *document-centric* has been changing its scope over time as well. Content-centric is therefore a more-current term for this category.

As mentioned previously, the integration-centric and the human-centric categories often occur in combination. They frequently apply to processes around high-volume transactions. Table 1 further describes and illustrates these major categories and types of business processes. It also lists typical examples of WebSphere Process Server client-use cases falling into one or more of these categories.

Types of business processes	Integration-centric	Human-centric	Content-centric (document-centric)
Key characteristics	<ul style="list-style-type: none"> Fully automated processes Application integration through built-in invocation capabilities, adapters and so on Often with human-based exception handling or decision-making 	<ul style="list-style-type: none"> Human-based processes Human involvement for decision making, judgment, or inquiry and research Human interaction through business-user clients Often including automated steps 	<ul style="list-style-type: none"> Human-based processes that require people to interact with documents intensively Tight links between processes and documents Process flow typically triggered and controlled by document state
Examples of typical business processes	<ul style="list-style-type: none"> Order fulfillment Systems provisioning 	<ul style="list-style-type: none"> Credit approval Product and services procurement 	<ul style="list-style-type: none"> Mail and document processing Document review and approval
WebSphere Process Server client examples	Telecommunications <ul style="list-style-type: none"> Provisioning of requests like new subscriptions, relocation and so on 	Banking <ul style="list-style-type: none"> Human workflow to prepare customer-specific offers Human workflow to process mortgage loans 	
	E-marketplace <ul style="list-style-type: none"> Highly automated order processing Business-to-business (B2B) application integration Integrated exception handling for failed orders through human workflow 		
		Finance <ul style="list-style-type: none"> Workflow-managed handling and response to incoming customer mail Electronic in-basket based on WebSphere Process Server tasks Document management through IBM DB2® Content Manager 	

Table 1. Major BPM categories and types of business processes

Fact two: WebSphere enables you to do BPM enabled by SOA

SOA has evolved as an architectural style in IT that views a business as a set of interrelated business services. Probably the most important differentiator of WebSphere BPM technology is that it has been designed from the ground up to be 100 percent SOA-enabled.

WebSphere Process Server enables you to compose business processes from service components (which can, for example, be Business Process Execution Language [BPEL] flows, human tasks, business rules, business state machines or selectors). Business processes can themselves be exposed as service components, enabling you to aggregate them as higher-level composites for new services. This unique blend of capabilities combines the strengths of SOA (to expose your company’s IT assets as reusable business services that can integrate and communicate more readily) with the strengths of BPM (to model, run, monitor, automate and more flexibly adapt your company’s business processes).

Bruce Silver, an independent analyst who publishes “BPMS Watch” on www.bpminstitute.org, has described the virtues of SOA-based BPM based on WebSphere Process Server and the related products and tools in this way:

“It’s more than simply a question of nomenclature. While a business analyst envisions an end-to-end process as a single hierarchical entity, with a well-defined beginning and end, and a well-defined overall state, an IT architect typically views the SOA solution embodying that process as a collection of service-oriented components that invoke each other in a peer-to-peer arrangement. When most IT architects think of SOA, they are not thinking about business processes, but more generally how to build reusable service components and assemble them into composite applications.

“This mindset dichotomy is clearly visible in IBM’s recent blockbuster WebSphere SOA announcements. For the business analyst, WebSphere Business Modeler, [Version] 6 allows business analysts to define, simulate, and design key performance indicators for a process solution using the BPM paradigm. This model lacks the implementation detail to be immediately executable, but it can be imported directly as a set of skeleton service components into WebSphere Integration Developer, IBM’s new SOA design tool for IT.

“WebSphere Integration Developer and its associated runtime engine, called *WebSphere Process Server*, provide all the functionality of an advanced BPMS, based entirely on SOA. But their solution artifacts don’t describe process activities. Instead they reflect the IT perspective of SOA in which service components of any kind are wired to each other as peers through an enterprise service bus (ESB). A BPEL process is a service component, but so is a business rule and so is a human task. They are all peers. The fundamental units of reuse are not activities and subprocesses, but the more generic component assemblies.

“As [WebSphere] Process Server executes, it issues events automatically as instances of service components are executed. Using specifications defined in [WebSphere] Business Modeler, these events are captured by WebSphere Business Monitor and aggregated as KPIs and other metrics displayed in performance management dashboards. These [metrics] can be fed back into [WebSphere] Business Modeler, closing the cycle of continuous process improvement, one of the cornerstones of BPM.

“In its new SOA framework, IBM addresses the BPM/SOA dichotomy directly. WebSphere [Business] Modeler and [WebSphere Business] Monitor, intended for business analysts and process owners, embrace BPM concepts and view the IT platform as a BPMS. [WebSphere Integration Developer] and [WebSphere] Process Server, used by IT, describe the solution artifacts, even those created by [WebSphere Business] Modeler and displayed in [WebSphere Business] Monitor, more generically as interacting service components. But unlike the traditional business-IT handoff, in which business-analyst tools simply create requirements documents that must be interpreted by IT in their designs, IBM unites the underlying descriptions and artifacts created in the two environments and performs all necessary translations automatically under the covers. While much of its SOA customer base might just use [WebSphere Integration Developer] and [IBM] Rational® developer tools, IBM allows those tools to serve the BPM market as well by wrapping them in [WebSphere Business] Modeler and [WebSphere Business] Monitor.

“Most of the BPMS vendor community has been stymied by the BPM/SOA dichotomy. IBM’s new Process Integration Suite provides a neat solution.”³

Jasmine Noel offers another important contribution that explains the benefits of this new “BPM enabled by SOA” paradigm. She states, “WebSphere Process Server has been built completely and natively on open SOA standards, like the Web services stack of standards (‘WS-*’), the Web Services Business Process Execution Language (WS-BPEL), Service Data Objects (SDO), the Service Component Architecture (SCA) and others. These ‘BPM enabled by SOA’ standards have been shaped by the WebSphere Process Server architects in cooperation with other key industry players. These standards ensure a high degree of interoperability with other systems and applications, and help to protect customer investments.”⁴

Fact three: WebSphere Process Server fully supports integration-centric and human-centric BPM

WebSphere Process Server inherits a rich set of integration-centric capabilities from its WebSphere InterChange Server and WebSphere Business Integration Server Foundation ancestors. These capabilities include built-in support for transactions (such as two-phase commit), recovery, error handling and capabilities to connect with all major systems and applications through a variety of interfaces that can be Web services-based or Java™ technology-based, or use messaging as the transport mechanism. A set of adapters is available with WebSphere Process Server that connects business processes with other commonly used technologies (flat files, Java Database Connectivity [JDBC], File Transfer Protocol [FTP] and e-mail) or packaged applications (SAP, Siebel, PeopleSoft, JD Edwards and Oracle).

In addition, WebSphere Process Server incorporates all the experiences IBM has gained through WebSphere MQ Workflow, one of the market-leading products in the human-workflow space. WebSphere MQ Workflow has reached more than 1200 clients worldwide, with hundreds of thousands of users since the late 1990s. All major human-workflow capabilities of WebSphere MQ Workflow are provided in the business-flow manager (BFM, or BPEL engine) and the human-task manager (HTM) of WebSphere Process Server. HTM is the component that handles human-centric BPM in WebSphere Process Server. In a number of important areas, like the real-time access to various Lightweight Directory Access Protocol (LDAP) organization directories, or the ability to support on-the-fly collaboration, HTM goes far beyond the support for human workflow that was provided by WebSphere MQ Workflow.

As outlined in the “Fact two...” section of this white paper, IBM is emphasizing SOA as an architectural style that helps businesses to become more flexible. In accordance with its overall “BPM enabled by SOA” philosophy, IBM is demonstrating its support for human-centric BPM by helping to ensure that the HTM in WebSphere Process Server is 100 percent SOA-enabled. The involvement of people in service compositions is a relatively new facet of SOA, expanding the ways software can model how humans work and interact in a business.

Human tasks, when required in SOA-based business processes, provide the infrastructure for human-based services. They are based on the staff functions known from classical human-workflow systems, with their functionality extended to include sophisticated escalation and notification capabilities, as well as the ability to specify (for example) WebSphere Portal technology-based user interfaces for human tasks.

Having human tasks as a specific form of service components enables you to integrate humans into business processes in a seamless, truly “SOA-style” fashion. Using the tools that come with WebSphere Process Server, it requires only a few mouse clicks to replace a human task in a business process by an unattended service, and vice versa. Most other implementations using pre-SOA human-workflow technologies are unable to match this concept.

Optionally, human tasks can be directly imbedded into BPEL processes as inline tasks, supporting a tight link between business process and task, thereby enabling scenarios like the separation of duties (the “four-eyes principle”), which is especially important in processes used for decision making. Alternatively, human tasks can also be used fully independently from BPEL processes in SOA-based applications as stand-alone tasks.

Other human-centric capabilities of HTM in WebSphere Process Server include:

Rich task-assignment capabilities

- Staff queries or verbs to assign the right task to the right person at the right time
- Support to assign tasks to groups of people
- Real-time access to multiple staff or organization directories through LDAP
- Ability to support fully dynamic task assignment at run time (through task-input message or custom properties, or through BPEL variables for inline tasks)
- Ability to support flexible post-processing of staff query results, enabling you to plug in your own staff resolution algorithms

Multilevel escalation mechanisms

- Time- and priority-based aging of tasks
- Notification about expiration through e-mail and notification work items

Customizable business-user interface support

- Tasks that enable you to specify client settings that contain information used at run time to properly render a task, depending on user role and client technology used (for example, Web or portal style)
- A wizard to help generate business-user clients

Support for ad hoc human collaboration

- Create human tasks dynamically, without previous modeling
- Support for subtasks, follow-on tasks and follow-up tasks

The concepts behind HTM are further explained in the white paper “SOA programming model for implementing Web services, Part 8: Human-based Web services,” available at ibm.com/developerworks/webservices/library/ws-soa-progmodel8/.

The support for ad hoc human collaboration through ad hoc tasks in the WebSphere Process Server HTM is critically important in human-centric scenarios, such as:

Exception handling

For complex exception handling, not all exceptions (nor how they can be resolved) can be foreseen. If an exception occurs during a business process, a regular human task can be created for a process owner or process administrator to handle the exception. Because the exception might involve unforeseen situations, the owner handling the exception needs full freedom to address the case. Completely decoupled from the overall process model with the creation of ad hoc tasks, a team of different people would be able to handle the exception before the process engine comes back into play to navigate through the rest of the process model.

Decision buy-in

Before making a difficult decision alone, an employee creates ad hoc tasks for trusted people in his or her community, asking for advice about a certain subject before actually making the decision.

Basic task help

An employee feels uncomfortable in completing a specific task. He or she could try to collaborate with some teammates using collaboration software, such as instant messaging. However, if a teammate is not online, instead of sending an e-mail and losing the task's specific context, the employee could create an ad hoc task to ask for help, advice or a solution.

Document review

One person in charge of reviewing a document creates new ad hoc tasks for that person's team members or peers assigned to review specific parts of the document. However, the final commitment for reviewing the document stays with the original task owner.

Ad hoc tasks help to make business processes less rigid, more flexible and more human-oriented. If people who perform a specific task in a business process can't move forward with the task, they quickly pick up the telephone, or use e-mail or instant messaging to solve the task. However, being dependent on such other means of communication has two key drawbacks: The desired co-worker might not be immediately available, and the context of the task in question is not directly passed on to that co-worker, making it difficult to provide the optimal assistance. Ad hoc tasks solve both problems. They enable users to pass a task with its full context to a co-worker, who can assist in getting the task done, at a time that fits his or her calendar and availability. After the co-worker has finished, the results are passed to the creator of the ad hoc task, all through HTM, helping to save time and reduce errors. Also, ad hoc human tasks complement other options for ad hoc collaboration, like e-mail or instant messaging.

Ad hoc collaboration through ad hoc tasks significantly expands the spectrum of BPM scenarios that can be supported through WebSphere Process Server, as shown in Figure 1.

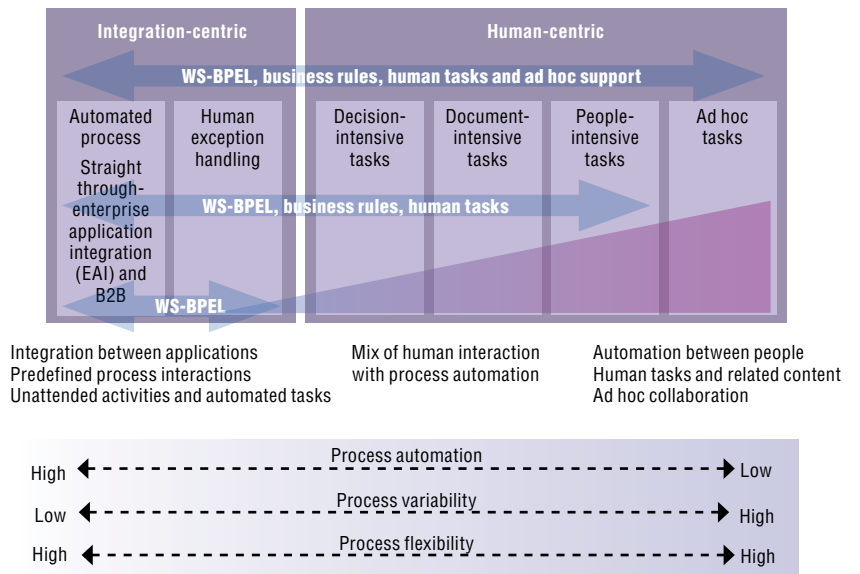


Figure 1. Spectrum of BPM scenarios using WebSphere Process Server

What is the real power of supporting unplanned ad hoc human tasks, next to the structured and well-defined business process? First of all, doing work in a somehow unstructured way is pretty human, and happens whether there is automation or not. But having system control over the unexpected enables you to keep the full context of these activities. Supporting ad hoc workflow means that if the originally assigned person is not capable of performing the required task for whatever reason, a new task – actually using the same task description and implementation – can be created for someone else, ad hoc, immediately, with no additional effort. In many cases, this capability eliminates the need for e-mails or phone calls, as well as the possibility of maybe doing nothing and therefore delaying the overall process implementation. HTM helps keep the full control of these activities that are created ad hoc.

Finally, whenever the ad hoc task completes, the next steps of the process run again as defined in the process model. There is no need to manually synchronize information that was requested and created ad hoc with the structured process, because all of these tasks are fully system controlled. These ad hoc capabilities can help you to significantly save time and cost, while helping to eliminate errors.

WebSphere Process Server combines the HTM capabilities described previously with the strengths of its WS-BPEL-based, industrial-strength process-implementation environment. Full support for transactions helps ensure recoverability. Business processes can be either short-lived (for example, they are implemented by WebSphere Process Server in a single transaction) or long-running (for example, if human interaction is required). Processes can invoke services, human tasks or other processes, and can easily react to external events. Built-in support for compensation enables you to undo activities or complete processes in case of errors or other business events. Both the BFM (BPEL engine) and the HTM can support high processing volumes and scalability.

As outlined in the “Fact one...” section of this white paper, WebSphere Process Server has been designed in recognition of the fact that the majority of integration-centric processes also require human interactions to process exceptions or make critical decisions. You need seamless integration and interchangeability between automated, IT-level steps and human-facing steps in your business processes. Likewise, in most human-centric processes, you need integration-centric capabilities to increase the degree of automation and to help reduce labor costs. If you have started with a purely human process implementation, you might quickly find yourself stuck on a dead-end road, particularly if your infrastructure does not support integration-centric capabilities to automate low-value, labor-cost-intensive human steps.

Prior to WebSphere Process Server, companies had to use different technologies for integration-centric and human-centric processes that required multiple tools and did not interoperate well. WebSphere Process Server provides superior support for both types of business processes in a truly integrated and transaction-centric way.

To learn more about the capabilities described in this section, visit ibm.com/support/docview.wss?uid=swg27008938 to download “WebSphere Process Server V6 – Business Process Choreographer: Concepts and Architecture.”

Fact four: WebSphere Process Server enables business users to easily interact and collaborate with business processes

Integration-centric processes connect applications, systems or unattended services. Human-centric processes connect people. As a result, how a BPM system like WebSphere Process Server integrates and connects business users who are the principal performers in human-centric business processes is crucial. Such business users need to be able to access, initiate and interact with business processes and human tasks as easily as possible. Business users have to be able to quickly view the status and progress of critical business processes to respond to customer or management inquiries. They want to be able to sort and prioritize between different tasks they are involved with during the running of business processes. They need to interact with tasks they are supporting, as well as view task status, priority, timing and all other relevant information for the specific task at hand. These business users are humans who are in the middle of business processes. They want software that assists and supports them in this role to be as user-friendly as possible.

Business users are not the only user role in human-centric BPM that WebSphere Process Server and its companion products support. Other user roles include business analysts, process engineers and integration specialists, and business managers or those working in business operations. The user roles and the corresponding types of tools and clients supporting these user roles are summarized in Figure 2.

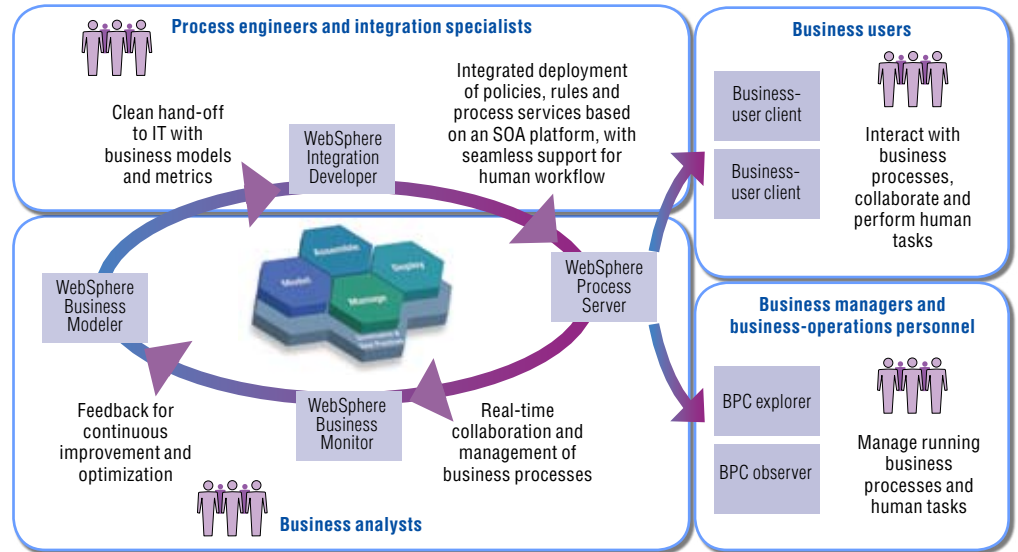


Figure 2. User roles with tools and clients that support them

As it relates specifically to business users, WebSphere Process Server supports the interactions between business processes and business users described previously through business-user clients. A specific challenge with business-user clients is that specific organizations and specific types of users want to have their own, individual, customized business-user clients, driving the need to support a broad range of business-user clients in several dimensions:

- From a client-technology point of view, *Web clients, portal-based clients and rich clients are the main client technologies to be supported. In some cases, companies must also support mobile devices.*
- From a functional point of view, *a wide range of different business-user types must be supported. At one end of the spectrum are occasional users, whose only interaction with a business process typically is that they are referred to a process and human-task-specific Web page to perform that task (in other words, to view, provide input to, approve or reject the associated task). At the other end of the spectrum is the heavy-duty business user who performs tasks in a highly repetitive way, and requires a sophisticated and productive client user interface that enables the user to switch between and work on different process instances, task lists or individual tasks. Portal-based clients enable you to present context information relevant to a human task in portlets that can be linked with a specific task. Such context information includes, for example, a list of documents associated with the specific task or access to productivity tools to perform the task.*
- From a visual-design point of view, *a lot of organizations require that the business-user client interfaces conform to their specific corporate user-interface styles. In many cases, the workflow function for the business-user client is only one portion in a more-general client user interface that also provides other presentation functions to display and manipulate content from applications, databases or other systems.*

As an example, Figure 3 (which comes from a real-world WebSphere implementation by businessMart AG that you can access at www.nexmart.de) illustrates a business-user client for ordering business processes. In this specific case, about 80 percent of all incoming orders handled by the system are processed in a fully automated way, integrating various business applications. The remaining 20 percent require manual intervention and human interaction for order correction and order completion. This interaction is performed by business users through the Web-based business-user client interface shown in the “Back Office Organizer” screen capture, which is part of a “Silent Commerce Control Center.”

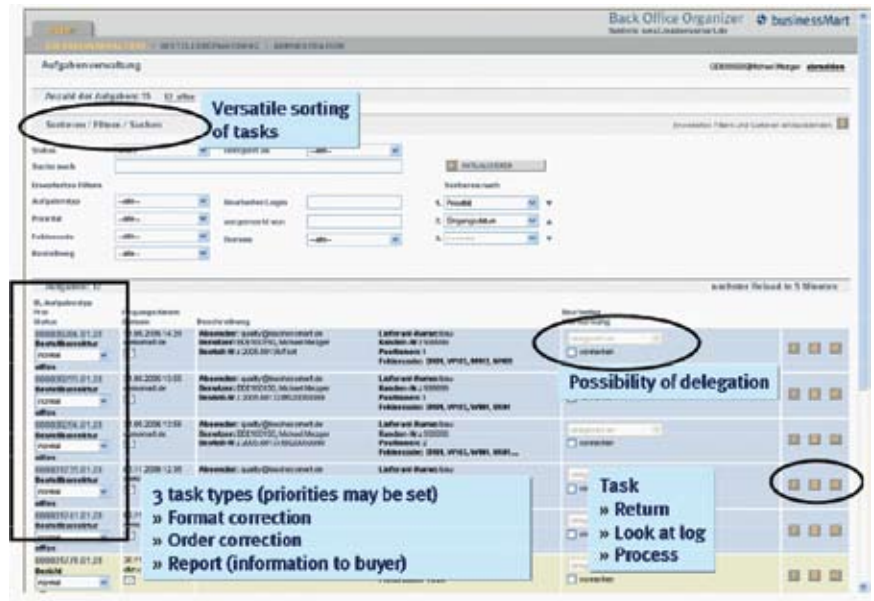


Figure 3. Sample of a business-user client interface based on WebSphere Process Server

Based on the described requirements, it would be inappropriate to provide a one-size-fits-all business-user client for WebSphere Process Server to satisfy all the company's needs. WebSphere Process Server provides a rich set of Java and Web services-based application programming interfaces (APIs) that you can use to develop your specific business-user clients. In addition, WebSphere Process Server provides robust client components that enable you to assemble customized business-user clients from these client components much faster and more easily. These Business Process Choreographer (BPC) explorer JavaServer Faces (JSF) components that come with WebSphere Process Server provide robust GUI capabilities. They provide, for example, a GUI component to view and work on process instance lists, or a GUI component to view and work on human-task lists. These components are customizable, and can easily be integrated into your specific business-user clients. You can view samples that show how business-user clients can quickly be derived and assembled from these BPC explorer JSF components on the WebSphere Process Server BPC samples Web site at <http://publib.boulder.ibm.com/bpcsamp/index.html>. You can use these JSF components in Web client environments as well as in portal-based client target environments.

In situations where visual demonstrations and prototypes are required to get early feedback from business users, it is important that demonstration-level clients for business users can be provided as quickly as possible, along with the modeling, development and refinement of the corresponding human-centric business processes. For these reasons, WebSphere Integration Developer, the tool that comes with WebSphere Process Server, provides a client generator. This wizard plugs into the human-task editor to support the creation of human-task-specific user interfaces directly from a task's definition. You can then plug the generated task-specific user interfaces into the overall client framework that is based on the BPC explorer JSF components described previously. You can also use the clients that are generated through this client generator as a starting point for developing production-level business-user clients. In this case, you can choose to further refine (customize and extend) the generated client artifacts using IBM Rational Application Developer. Currently, the client generator in WebSphere Integration Developer supports Web-based clients. The road map for client generation includes the support for additional client technologies (portal-based clients, rich clients, forms clients and so on) and further enhancements to customization capabilities.

To complete the picture, WebSphere Process Server also comes with clients for administrative users, business-operations personnel or business managers. The BPC explorer is an administrative client that enables these users to display and manage business-process templates and human-task templates, as well as specific running instances of processes and human tasks. Using the BPC explorer, an administrative user can, for example, transfer work from one person or group to another person or group. Finally, the BPC observer complements the picture by offering support to graphically display history-based statistics and charts for business processes based on selection criteria like state and time.

Human-centric BPM has the business user as its main subject. WebSphere Process Server helps to integrate business users with business processes, making them more productive, enabling them to collaborate better with each other, and making them more responsive to their customers within or outside the company.

Summary

This white paper has shown how WebSphere BPM products address both the integration-centric and human-centric business processes that occur in most real-world situations in combination. The WebSphere BPM technology has been designed to be 100 percent SOA-enabled. Support for human-centric BPM is based on the human task manager, an SOA-style human-workflow system integrated into WebSphere Process Server, and complemented through powerful capabilities to integrate and connect business users. These unique strengths make WebSphere an industry-leading, winning platform for BPM enabled by SOA.

For more information

To learn more about BPM enabled by SOA, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/infocenter/websphere/index.jsp?tab=landings/powerofprocess&S_TACT=107AG01W&S_CMP=campaign

To learn more about IBM WebSphere Process Server, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/integration/wps/

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