



WebSphere software

Delivering business agility and service level management with business process integration.

*By Roland Peisl
WebSphere Business Integration Marketing
IBM Software Group*

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Introduction

Although a Web interface may run smoothly, behind its exterior there can be a chaotic flurry of activity. When there is little or no management of business processes, inefficiency and an overall lack of organization can occur. Faxes fly, paper copies of orders are lost or keyed into different systems. When your customer wants to know the status of an order, the last thing they want to hear is, “We have no record of your order.” Your business faces a number of challenges in order to address the continual change taking place in the market today. You need to adopt new business rules, financial models and industry position to find new ways to acquire and keep customers. Develop new business, enter new markets, create new sales models and build new and efficient electronic purchasing channels, while integrating existing ones.

To be successful in today’s rapidly changing market, your business requires a solution that allows you to integrate your business processes across different vertical markets and various operating environments. Effective business integration enables disparate business resources – both inside and outside an enterprise – to work together to support a company’s business strategy. A business process management (BPM) solution is the collection of instruments with which you can model your enterprise business processes, perform activity-based costing, simulate the processes and deploy them.

Efficient BPM integration allows new business applications to be created and lets companies differentiate themselves by making customer transactions smoother than the competition. BPM solutions can integrate the resources supporting your business processes, automate the transactions between them and monitor those processes while executing them, making what goes on inside your business visible, measurable and auditable. Effective BPM solutions return control of business processes back to business people from information technology (IT) people. This means line-of-business managers can change business processes and quickly adapt them to changing economic conditions.

This white paper highlights the importance of flexible automatic business processes that allow you to observe exactly how your business operates and react quickly to market changes, which will let you provide optimum service levels to users, customers and trading partners. It describes the business integration and middleware infrastructure that enable a business to define and tune its processes – without programming – for maximum business benefit.

The importance of business agility

The dynamics of commerce and e-business today demand business agility to rapidly adapt to both existing and new market forces and opportunities. You must be able to seize market opportunities and provide appropriate service-level management to exceed customer expectations. You have to continually offer value-added differential to your customers – on price, service or any other attribute that meets customers' needs.

Multichannel delivery of business processes

The Internet has proven to be an important business channel for you to reach customers. Lower transaction costs, global reach and pervasive access to your customer's business and daily life are compelling opportunities in formulating a competitive business strategy that includes Internet presence. However, customers use the Internet as only one of several ways to conduct business transactions. This means that you must be able to provide consistent and appropriate service levels across all business channels so that customers have a positive experience with each interaction. Deploying an effective BPM solution enables you to achieve multichannel reach and uniformly optimize, manage and measure the end-to-end processes that touch customers wherever they may be.

“By 2005 at least 90 percent of large scale enterprises will have BPM in their enterprise nervous system (0.9 probability).”

— Dave McCoy, Gartner Inc.

Gain better control of business processes

Whether you operate a Web-based organization or a manufacturing and distribution company that operates complex supply chains, it's vital for you to have control of your business processes. First you must know what is going on in your business and then align processes to your business objectives.

“BPM is a general term describing a set of services and tools that provide for explicit process management (e.g., process analysis, definition, execution, monitoring and administration), including support for human and application-level interaction.”

— Dave McCoy, Gartner Inc.*

Integrated BPM solutions from IBM provide the visibility, measurability and auditability you need to have optimal control of your processes and the resources and assets that participate in them. Effective BPM solutions also help you leverage information embedded in applications and knowledge in the minds of employees. This alignment of information and IT assets with your business objectives puts you in control. The following scenarios show why managing your business processes is crucial:

- *A customer places an order for a large number of lawn mowers and demands tight delivery times. You need to know which suppliers have the components in stock and can deliver to meet your deadlines. You must be able to effectively integrate, or already have integrated, your choice of potential suppliers so that they can participate in your business processes. At the same time you need to have complete control of your business processes and your resources. You must, at a moment's notice, be able to inform the customer of the exact status of the order and deal effectively with any delays.*
- *Your business sells compact discs and books. A competitor reduces the cost of a product, undercutting your prices. You need the ability to respond quickly by offering a better deal, such as a two-for-one sale, without having to change your application code. You should be able to do this inside your existing business process and rapidly pass the benefit on to your customers.*
- *Demand for your product increases. You must be able to meet the required service levels to satisfy your growing customer base. At the same time you want other companies to be distributors for you. You must be able to put the most effective processes in place and still maintain high quality.*

BPM solutions from IBM

IBM offers a comprehensive transactional BPM system that enables you to deploy your enterprise business process to achieve the benefits of business integration. Whether your requirements are business-to-business (B2B), business-to-consumer (B2C), intra- or inter-enterprise, you need reliable, scalable business process-driven solutions. IBM has competitive, market-leading solutions regardless of your company size and business model. BPM solutions from IBM also offer you the business agility to rapidly change business logic at the process-flow level rather than in the application code.

These solutions allow you to be flexible and adaptable to change, while providing appropriate and consistent service-level management of end-to-end customer processes. They also leverage existing information within your assets, both in applications and employees. BPM solutions from IBM also feature:

- *A set of tools that allow you to define and simulate business processes, as well add customizable business metrics and measures, such as process cost and expected process duration data.*
- *A graphical interface to monitor business process execution. This lets you view current process states or show aggregated information on a business-process level—like average process costs, average working durations or other data that is based on user-defined business measures—for selectable time periods.*
- *A rich set of predefined business transaction process logic that enables a business to more quickly deliver its solutions to market.*
- *A graphical development environment that enables rapid end-to-end development, deployment and maintenance of business objects and processes.*
- *A large adapter portfolio with out-of-the-box access to many popular packaged applications to ease integration.*

Empowering your business

IBM provides solutions that deliver flexibility, speed and competitive business differential to your company. IBM MQSeries® Workflow is the process engine at the core of BPM solutions from IBM, providing a useful, scalable process engine on which to run your mission-critical business processes. It enables process-level orchestration of a sequence of system or human tasks that may span long periods. MQSeries Workflow also facilitates the rapid building of solutions from front-end creation to resource interaction, helping you to know exactly what is happening across your enterprise at any given moment. It puts business agility and service-level management within your grasp, allowing you to manage business processes that include both human and electronic steps.

Process independence

Separating business process logic from business process implementation provides process independence. It defines what needs to be done, when and why, and how it is done, by whom or by which application. This separation of the process function and how it is implemented enables the concept of business flow to be separated from underlying organizational and IT resources that supports it. Business process definitions, along with procedures and policies, are stored in a repository and are available to employees for documentation and as a foundation for ongoing improvements. This availability allows you to take the first step toward capturing corporate knowledge so that it can be disseminated throughout your value chain. By making business process independent from business logic, line of business managers can make changes to the business process, as shown in Figure 1, without depending on IT personnel to implement the changes.

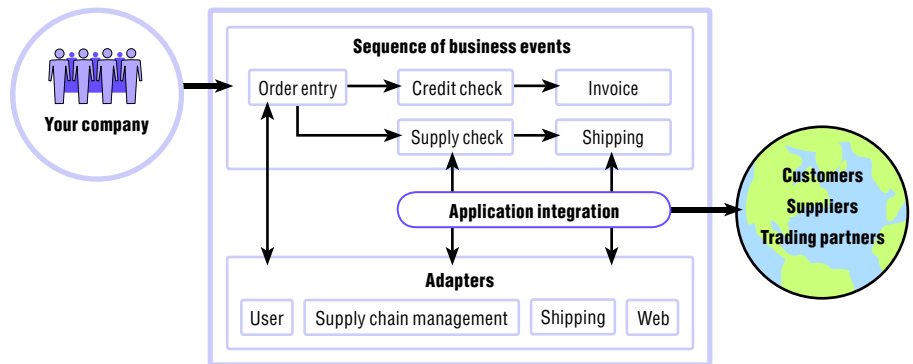


Figure 1. Intracompany and B2B process management

Business process definitions offer the key to maximizing your competitive differential by providing information you need to recognize your company's potential or to correct problems. They help to monitor your business effectiveness and optimize the efficiency of your business processes. Finally, pushing processes out through all your business channels provides a common service experience to your customers. By going one step further and publishing your interface processes externally, even smaller companies can quickly create virtual organizations and trade information with each other. Large companies can focus on their core processes while outsourcing their more common processes to potential suppliers.

BPM implementation assessment

The complete BPM cycle is available to you by combining the HOLOSOFX BPM Suite, which consists of HOLOSOFX Workbench and HOLOSOFX BPM Monitor (see Figures 2 and 3), with MQSeries Workflow, the IBM process engine for business process automation.

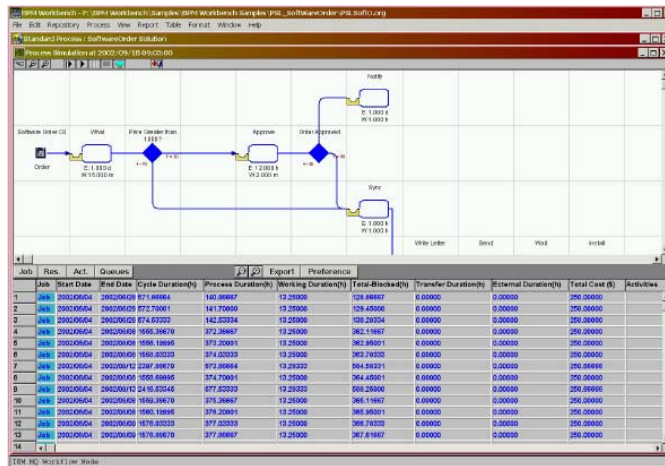


Figure 2. BPM Workbench helps you capture, define, test and simulate process flow definitions.

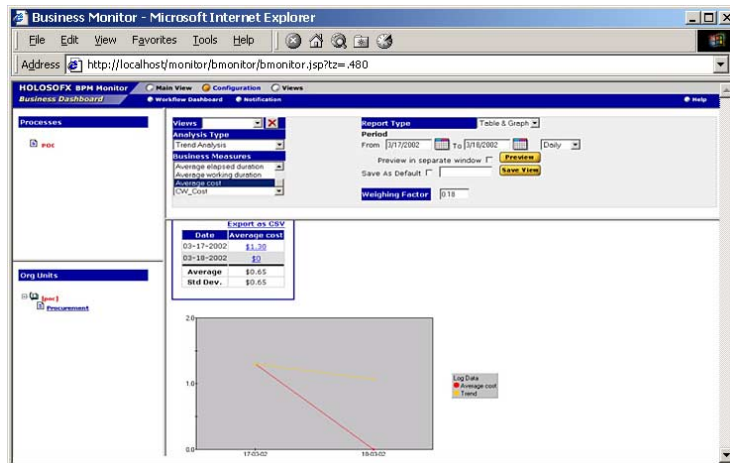


Figure 3. With HOLOSOFX BPM Monitor, different views visualize average process costs and cycle times, helping you to analyze business processes for further process optimizations.

The first step is to use the process model definitions found in HOLOSOFX BPM Workbench to define, simulate and analyze business processes. Next, deploy the process definitions to MQSeries Workflow for automation. Finally, with HOLOSOFX BPM Monitor, you have realtime monitoring and further analysis of business process execution in your production environment. This information allows greater optimization of your business processes.

BPM implementation procedures

BPM solution implementation details which back-end systems need to be integrated in order to fulfill business processes. Integration can be achieved through the use of IBM WebSphere® MQ software (formerly IBM MQSeries) or IBM CrossWorlds® software. While the WebSphere MQ software products provide a robust and scalable message-based infrastructure for back-end integration, CrossWorlds software offers a full range of integration services to unify disparate systems and databases. The CrossWorlds product family consists of the IBM CrossWorlds InterChange Server, numerous application and technology connectors, prebuilt collaborations composed of generalized business objects, and a collection of development and monitoring tools. This software provides a full range of integration services that can unite a company's dispersed IT assets on a single integration platform, giving you a coherent system environment. CrossWorlds software gives you a quick and easy way to adapt to evolving business needs. CrossWorlds software architecture offers you the flexibility to swap, reconfigure or upgrade applications and business object collaborations. For BPM solutions, CrossWorlds collaborations are used with IBM MQSeries Workflow and WebSphere MQ messages to integrate with various back-end systems, exploiting CrossWorlds software strengths of predefined, prebuilt collaborations.

Modeling, simulating and deploying business processes

The combination of HOLOSOFX BPM Suite, MQSeries Workflow and CrossWorlds software enables you to rapidly build your business processes and link corporate assets to business process definitions. The following section provide example of how this type of integration can help your business.

Business process definition and simulation

HOLOSOFX BPM Workbench lets you visually specify business process models using the properties of process activities, their costs, their timings, their data, the applications to be used and work assignment rules for staff, if required.

After process definition, the simulation engine of HOLOSOFX BPM Workbench takes processed data to indicate how the process might or might not meet your business goals later in a production environment. Working with BPM Workbench, you can define and simulate process alternatives and identify the business process alternative that best fits your business goals. The definitions are then registered with the process engine of MQSeries Workflow, where processes are automatically executed. Back-end application transactions, also known as IBM CrossWorlds Collaborations, are initiated and, if necessary, human intervention is invoked with work lists or alerts. Front-end screens are rapidly deployed using WebSphere software wizards that take process definitions, such as activity input and output data, and automatically generate JavaServer Pages (JSP) components to build user interfaces for required human interventions. The advantage to this is that you can immediately provide user interfaces for manual interactions, such as approval steps or exception handling, with minimal coding required.

Integrating back-end systems in the business process

Back-end integration is either done directly by exploiting MQSeries Workflow application programming interfaces (APIs) or by using WebSphere MQ message brokers to send messages to applications that are accessible in the WebSphere MQ infrastructure. WebSphere MQ products and CrossWorlds software help you join various elements of your IT environment that need to be included in your business integration effort. This may be as simple as including two applications or as complex as uniting globally distributed applications between a company and its trading partners. CrossWorlds software provides application-specific connectivity solutions that simplify the job of creating interfaces. It also comes with hundreds of prebuilt collaboration templates that help to speed implementation. CrossWorlds software is driven by an industrial-strength integration server and includes easy-to-use tools to customize, design and monitor business object collaborations.

Business process monitoring and auditing

HOLOSOFX BPM Monitor uses the MQSeries Workflow audit trail to track the history of transactions triggered by business process execution, as well as the resources involved. This realtime data is used with base metrics – like activity costs – captured during the business-modeling phase to calculate the actual activity and process costs.

The MQSeries Workflow audit trail provides realtime data that allows HOLOSOFX BPM Monitor to visualize process performance from a business point of view, in order to further optimize your business processes. The Web-based HOLOSOFX BPM Monitor enables you to access the current state of business processes, understand what activities have been completed and view what activities are not completed. You can see what happens, when it happens – allowing you to analyze current process execution in order to identify bottlenecks and improve productivity. BPM solutions allow you to meet customer demands at the service levels required.

Business without bounds

Almost everything in your company is process based, even if these processes are not yet clearly identified and are far from being automated. The IBM approach to BPM allows many fully automated activities and transactions to take place concurrently across multiple systems, as shown in Figure 4. Created and simulated by business analysts using the HOLOSOFX BPM Workbench, business process implementation is carried out by IT departments connecting new and existing back-end applications to the process in a WebSphere MQ and CrossWorlds infrastructure. When the process is automated, MQSeries Workflow triggers the invocation of all the required applications.

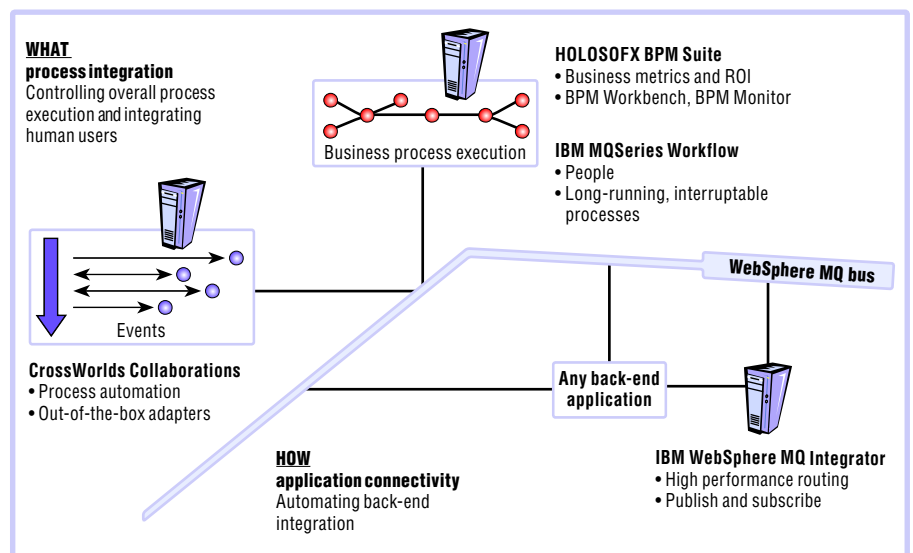


Figure 4. In WebSphere business process integration, business process logic is separated from business process implementation.

IBM BPM solutions help address the needs of a single department, or they can be pervasive throughout your entire enterprise, reaching across all of your business channels, trading partners and Web customers. Consider two aspects of a BPM solution. A process may be required to execute in subseconds and involve applications and systems only. Alternatively, a process can be ongoing, running for several months, involving human involvement and exception handling. The exception-handling feature of a process is key in both MQSeries Workflow and CrossWorlds software. The process manager can transfer control to a user after informing them that a particular problem or event has occurred at a certain point in the business process. The user can take the necessary action and return control to the process manager. Or, depending on the exception in the business process model, you can predefine the corrective actions that the integration system should automatically take without human involvement.

During the execution of a single or long-running process, your systems could malfunction and even fail. But MQSeries Workflow and CrossWorlds software smoothly manage these situations and provide full transactional support. Each transaction can be committed or rolled back, depending on the outcome of the attempt (including database updates through IBM X-Architecture® compliance or through a transaction processing monitor, such as an IBM CICS® system). In a production environment, an MQSeries Workflow process engine maintains the state of these activities. When restarting after a system failure, the process engine is immediately made aware of the current state of all its activities, what data each activity requires and what should happen next.

Users and administrators can see what has been executed as part of the business processes. When exceptions occur, additional specified notifications will be sent. A process may invoke or comprise many applications and functions. An application can be as granular as a Java™ technology-based object on a Web application server, or it can be as complex as another complete process domain running at a trading partner site.

Application functions can be started on desktops supporting users working on a work item or as a back-end application function in the network accessing a data store. Think of MQSeries Workflow as the business manager that – using various methods – controls and monitors the overall business processes, while consistently and reliably integrating your enterprise resources.

An IBM value proposition

With WebSphere software, you can integrate all aspects of your business by bringing together IT and organizational resources. Processes, data, employees, customers, suppliers and trading partners all participate in the business processes you design and deploy. IBM WebSphere Business Integration provides an end-to-end business integration environment, leveraging all the features included in HOLOSOFX, WebSphere MQ and CrossWorlds software. It offers you an additional set of common services that includes installation and security and administration features and provides patented technology for distributed process control across a business enterprise.

With WebSphere Business Integration, you can build on your investment in IBM technology and skills and leverage your existing business potential. WebSphere Business Integration builds on what you have, taking you from wherever you are today to wherever you want to go tomorrow, at the right pace and level of sophistication. No other vendor has the track record and experience to deliver this vision and roadmap for its customers.

IBM BPM solutions deliver consistency and industry standards

The WebSphere software platform for e-business and its related CrossWorlds software and WebSphere MQ product families provide your business with consistency and standards because they:

- *Are built around a shared repository containing the definitions for all business events, processes, rules and information in your enterprise.*
- *Offer ease-of-use through visual tooling and interfaces for business and technical communities.*
- *Speed up deployment and maximize flexibility.*
- *Include full implementation and support of industry standards, such as XML and RosettaNet, and compliance with object application group (OAG)-strong Java and Enterprise JavaBeans (EJB) component model support.*

Summary

IBM continues to lead the industry in business integration. WebSphere software, including the CrossWorlds and WebSphere MQ families of products, enhanced with business-level tooling from HOLOSOFX to model and monitor business processes automated with IBM MQSeries Workflow, provides comprehensive, flexible, robust, realtime, and scalable business solutions that can enable businesses to gain competitive differential. IBM provides complete business process management solutions and business integration from process definition to connectivity of systems across all major computing platforms. You can leverage the IBM wealth of industry knowledge rising from its consulting expertise. Process and data models that form industry-critical business processes are available to provide BPM solutions for major industries, as well as cross-industry definitions.

For more information

For more details about WebSphere software and WebSphere MQ products, visit ibm.com/software/ts/mqseries or ibm.com/websphere.

For more details about IBM CrossWorlds software, visit ibm.com/websphere/crossworlds.

For more details about HOLOSOFX BPM Suite, visit www.holosofx.com.



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Hursley Park, Winchester
Hampshire SO21 2JN
United Kingdom

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* Dave McCoy, Gartner Inc., July 2002.