

# IBM Business Process Management Reviewer's Guide



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**Note:** Before using this information and the product it supports, read the information in Notices on page 91.

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This edition applies to IBM WebSphere Business Modeler, IBM WebSphere Integration Developer, IBM WebSphere Process Server, IBM FileNet P8, IBM WebSphere Business Services Fabric, IBM WebSphere Business Monitor, and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this guide

Market demand for business process management (BPM) has grown significantly in recent years, and shows no sign of abating. Based on consultation with our clients, IBM® makes available a set of capabilities that enables you to build robust and holistic BPM solutions, whether they are integration-centric, human-centric, or content-centric.

This Reviewer's Guide provides an overview of the IBM BPM portfolio to BPM market watchers who have a keen interest in understanding the most current BPM technology releases and how they can be leveraged together. Specifically, we review the key benefits and features of the following products:

- IBM WebSphere® Business Modeler
- IBM WebSphere Integration Developer
- IBM WebSphere Process Server
- IBM FileNet Business Process Manager
- IBM WebSphere Business Monitor
- IBM WebSphere Business Services Fabric

For more information about IBM's strategy to provide innovative technology in the BPM marketplace, see [ibm.com/software/innovate](http://ibm.com/software/innovate).

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# Charting the BPM Vision

## Driving evolution in process management

Business process management (BPM) manifests itself in numerous ways in today's business environment. Typical BPM solutions are all around us: supply-chain processes for inventory management, self-service portals for managing employee benefits, financial processes for compliance, and call-center management reports for service organizations. Whether your business is documenting existing processes, defining flexible policy options to handle a broad scope of business situations, facilitating human task flows, or gathering operational details on how well the business is running, BPM is there.

As the pace of change and competition accelerates in today's economic climate, enterprises are under tremendous pressure to improve the way they do business. Business leaders have articulated the need to deliver products and services faster, raise the quality of what they deliver, rein in costs, grow revenues, have the flexibility to take advantage of market opportunities, have information on hand to react to unforeseen events, and have the ability to see long-term trends. Business needs to be more agile, flexible and responsive to market demands. Regardless of how well the enterprise runs today, it needs to adapt and improve, or it will be outdone by competitors.

What's the downside of not keeping up? Production and service outages, backlogs and process bottlenecks, supply chain disruptions, stock outs, missed service-level agreements, ineffective use of staff, poor customer satisfaction, operational reports that provide too little too late, and the list goes on. No one wants to be the next case study on enterprise failure.

The demands on information systems to help the business step up to today's challenges are enormous. The enterprise looks to information systems to fulfill requirements that, at times, seem incompatible, and IT leaders have the daunting task of enabling the right IT infrastructure to enable the CEO's vision. Let's consider the key characteristics of a holistic BPM infrastructure.

### Choice

Business dynamics change, regardless of how well plans are thought out. But how easy is it to modify an IT solution without a massive IT effort? Choices made today should not limit choices that need to be made in the future.

Imagine that a bank has implemented a consumer loan approval process wherein the credit verification portion of the process has been outsourced to a third party. Over the first six months that the solution has been in production, the bank has been continually unimpressed with the third party's track-record of returning consumer credit data. The service-level agreement is not being met, which itself was difficult to determine. The bank's confidence in the third party is waning, but it doesn't want its reputation of

providing fast customer service to suffer. If the bank chooses a different third party to provide the credit check service, can it switch out vendors with minimal IT costs and no service interruption?

## **Agility**

There are many decisions to make as processes run. The right decision is often influenced by various factors and cannot simply be expressed as a set of conditional if-then-else statements. The business needs to express a dynamic business policy in terms that IT infrastructure can effectively harness, and that the business can manage on the fly as that policy changes.

Consider the case where an airline is facing stiff competition to keep fares low, manage rising costs, and still make a profit. It establishes a complex pricing policy that determines fares dynamically through various factors and calls to services that are not known until a fare request is issued. Being able to effectively define and simulate this policy before deployment and modify the policy to keep pace with market changes will determine whether or not the fleet will still be flying in a year.

## **Flexibility**

Invariably, disparate departments in an enterprise too often develop and grow their missions and capabilities isolated from other departments. As these departmental silos grow, so too do their IT systems, but at some point there comes a realization that there is valuable information that should be shared across departments. Enabling departments to share information will realize business efficiencies (for example, by eliminating the need to enter duplicate data) and provide broader business insight across the organization. But can these disparate systems be enabled to work together without costly and risky rip-and-replace initiatives?

## **Speed**

More and more, business no longer has the luxury of taking years to develop solutions. IT departments require the tools to assemble solutions based on reusable assets, minimal coding, robust integrated test facilities, and a straightforward deploy capability. Heterogeneous environments introduce the additional challenge of integrating various hardware and software platforms, which dare not slow down solution development.

Imagine that the CIO has asked for more-detailed cost analysis reports to see how depreciation of the retail inventory affects overall costs. You have four weeks to pull together a prototype. IT architects and developers will need to extend the existing solution to pull in data from inventory ERP systems, modify cost calculations and the report format, and collaborate with subject-matter experts from the accounting department to validate that the right approach is taken. Can you show a prototype in four weeks? Sometimes you don't get a second chance.

## Skills

To effectively improve business processes, an organization cannot and should not rely solely on IT resources to design, collaborate, improve, build, deploy, and monitor those processes. The line of business (LOB) department brings subject-matter expertise and domain knowledge into the definition of *what* the business needs (requirements), *why* certain needs are prioritized higher than others (business goals), and *how* those needs are reflected in process definitions (models). LOB writes the specification for the business solution, whereas IT ensures it is implemented, tested, and deployed on a robust and scalable infrastructure. Striking the right balance across your organization to optimally leverage strengths and experiences across both IT and LOB departments facilitates the speed and agility you need to succeed.

It is not uncommon in many organizations that IT and LOB don't work together effectively. LOB writes a document about what their business processes are, with perhaps some suggestions for areas of improvement. IT interprets the document based on IT architectural constraints rather than on business priorities. IT generates monthly performance reports for the business leaders, but by the time the report is read, it is often too late to take corrective action in problem areas.

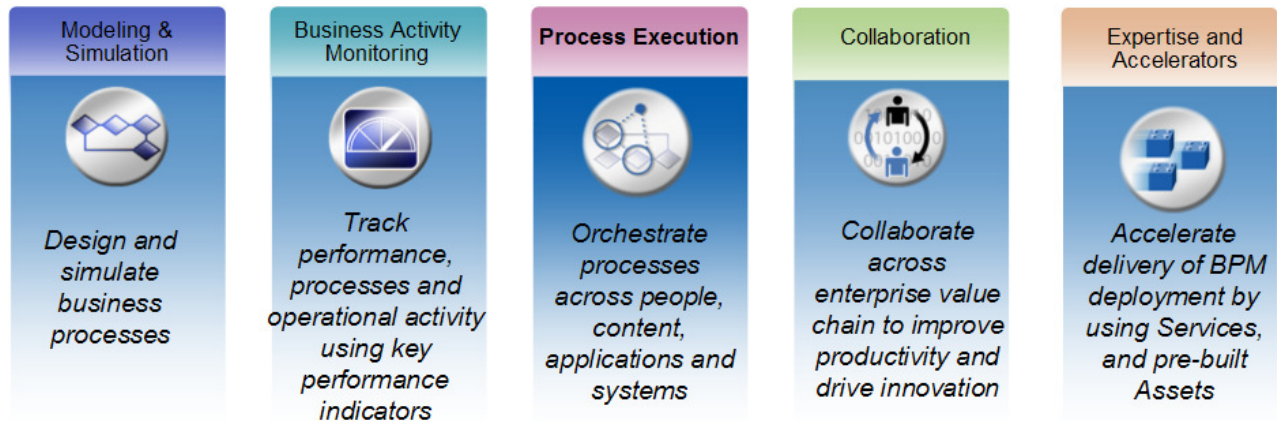
LOB needs to take a much more active role in both defining business processes and seeing the business results in real-time so they can react swiftly with business insight. LOB needs tools that can be easily tailored and used—tools that provide the necessary handoffs and integration points with the IT organization.

Consider the case where a Store Operations Executive for a retail chain, using a business dashboard, is notified that sales in a particular outlet are lagging. Drilling down through the data to identify the root cause, she also notices that there have consistently been low staffing levels at the store. Armed with timely, relevant information, this business leader now takes action to ensure there are better recruiting and retention practices in place at the store. She also asks HR to ensure that the sales training process has correct compliance measures in place, and that those measures also be tracked in the business dashboard.

## The IBM BPM portfolio

A complete BPM strategy must address and integrate dynamic networks of people, processes, information and systems, and enable business users to be truly self-sufficient. The components are comprised of modeling and simulation, business activity monitoring, processing, collaboration, and combinations of software and expertise.

### Composite Business Applications



To design, implement, test, deploy, and administer enterprise BPM solutions, you need a set of integrated capabilities that enable BPM through service-oriented architecture (SOA). IBM provides a robust portfolio that enables you to build end-to-end BPM solutions. At the core of our BPM offering is a set of tightly integrated WebSphere BPM products. These products form the heart of the IBM BPM offering. They support open standards and enable interoperability across a host of operational management, portal, and development products from across the IBM portfolio, including Rational®, Lotus®, and Tivoli® products.

Composite business applications use BPM and SOA to dynamically integrate disparate assets into compelling industry solutions that leverage legacy systems, packaged applications, and third-party services. WebSphere products enable connectivity through messaging, services and service repositories, routing, transformation, and industrial-strength adapters. The essential connectivity products are discussed in detail in the IBM Connectivity Reviewer's Guide.

IBM Business Consulting Services offers 65 industry-specific component business models to help clients view their business as a set of components, decide what is strategically differentiating, analyze costs, and prioritize transformation initiatives. Industry best practices, process benchmarks and predefined metrics help business owners understand how their business performs relative to industry peers and suggest potential areas for improvement. IBM offers over 200 pre-packaged BPM solutions across 7 vertical industries.



BPM is not an all-or-nothing proposition. In fact, enterprises commonly enable their BPM environments incrementally at their own pace and as their needs evolve. So where do you start with BPM? It depends on your business needs and existing IT environment. There is no required starting point because the following software offerings can be leveraged independently or in combination.

### **WebSphere Business Modeler**

With WebSphere Business Modeler, a business analyst can fully visualize, understand, document, and share business processes. You can simulate process runs to identify bottlenecks and inefficiencies, define key performance indicators and business metrics for use in WebSphere Business Monitor. Then, you can leverage the real business results in WebSphere Business Modeler simulations for continuous process improvement. In addition, WebSphere Business Modeler can generate IT implementation artifacts for either WebSphere Process Server or FileNet Business Process Manager.

### **WebSphere Integration Developer**

With WebSphere Integration Developer, you can build SOA-based integration solutions across WebSphere Process Server, WebSphere Enterprise Service Bus (ESB), and WebSphere Adapters. Plus, WebSphere Integration Developer accelerates the adoption of SOA by rendering existing IT assets as service components, encouraging reuse and efficiency. Using drag-and-drop technology and wiring reusable service components together, the integration developer can construct process and integration solutions. Furthermore, the test and debug capabilities of WebSphere Process Server and WebSphere Business Monitor enable you to rapidly prototype BPM and BAM solutions.

### **WebSphere Process Server**

WebSphere Process Server is a high-performance engine that ensures your BPM solutions are enabled through SOA for maximum flexibility, interoperability, scalability, and robustness. First-class support is provided for straight-through processing, human tasks, business rules, and business state machines. The integrated service bus mediates disparate resources for reuse, irrespective of vendor, platform or whether they are home-grown or packaged applications. The sophisticated management tools of WebSphere Process Server enable you to easily administer security, start and stop processes, and modify business policy on the fly.

### **FileNet Business Process Manager**

FileNet Business Process Manager offers an integrated set of BPM technologies that help you manage workflow among people and systems for content- and human-centric processes. In many client solutions, activity surrounding content is the most critical aspect of their processes. As part of the BPM lifecycle, FileNet Business Process Manager is integrated with both WebSphere Business Modeler (for business modeling and analysis) and WebSphere Business Monitor (for business activity monitoring), and FileNet business processes can interoperate with WebSphere business processes.

## **WebSphere Business Monitor**

WebSphere Business Monitor is an integrated business activity monitoring (BAM) environment that provides end-to-end visibility of business activity on WebSphere Process Server, FileNet Business Process Manager, and other enterprise applications. Portal-based and Web-based dashboards provide near real-time information so business leaders can make timely operational and strategic decisions. Totally configurable dashboards show you only what you need to see, and alerts can be delivered to e-mail, pagers, or PDAs. Monitoring results can be used in WebSphere Business Modeler simulations to complete the BPM feedback cycle, and the WebSphere Business Monitor toolkit provides out-of-the-box templates and a test environment to further accelerate time to value.

## **WebSphere Business Services Fabric**

WebSphere Business Services Fabric simplifies the business process assembly and management of composite business applications. By exposing the capability of IT systems as reusable application building blocks, business users can enact rapid business process change using business policies instead of code. Process execution is customized based on preferences and entitlements of recipients. Clients can confidently innovate and respond to market demands with greater agility and flexibility. Furthermore, dynamic services give you the ability to leverage existing assets (legacy, third party, and custom) and Industry Content Packs, which contain domain-specific SOA assets that accelerate time to value, simplify interoperability, and ensure compliance with industry standards.

## **Unifying focus areas across the BPM portfolio**

### **Human task support**

People are involved in various processes. The IBM BPM integrated portfolio of tools provides support across the BPM lifecycle to enable human tasks. Business defines human tasks (and any accompanying forms and escalation policies) in their business processes with WebSphere Business Modeler. Developers implement and deploy human tasks with WebSphere Integration Developer, and manage active human tasks with WebSphere Process Server. In WebSphere Business Monitor, business leaders use specialized dashboards to monitor and take action on human task activities.

### **Business rules and policy support**

Choosing a course of action in a process is often determined by many factors. The IBM BPM integrated set of tools provides richer support for defining policy with business rules. With WebSphere Business Modeler, business analysts can now define business rules tasks and logic, and then generate IT artifacts that seamlessly integrate with WebSphere Integration Developer for implementation. To keep pace with policy changes in the business environment, WebSphere Process Server provides business rules management to modify rules and policy schedules on the fly. For rapid policy definition, simulation and management, WebSphere Business Services Fabric enriches the ability to express and bundle policies, as well as offering a view of business policies that is distinct from business processes.

## **BAM enablement**

Business leaders need operational and strategic insight into the business so that they can make well-informed and timely decisions. Business activity occurs on a broad range of systems. A true BAM environment needs to factor in data from broad heterogeneous environments to reflect the big picture. In response, the reach of WebSphere Business Monitor is extended to receive events from FileNet Business Process Manager, MQ Workflow, and a wide selection of enterprise information systems using WebSphere Adapters.

## **Integrated content-centric BPM**

Managing documents throughout the document lifecycle in the context of business processes is a key challenge for Enterprise Content Management (ECM) environments. FileNet Business Process Manager provides an integrated set of technologies to create content-centric BPM solutions. You can use WebSphere Business Modeler to model content-centric processes and WebSphere Business Monitor to leverage FileNet Business Process Manager events for BAM solutions.

## **Accelerated time to value**

Getting solutions up and running quickly is necessary to respond to business demand and change. The development environments for the IBM BPM portfolio continue to be enhanced to provide more enriched out-of-the-box assets, templates, service repository support, code generation capabilities, and overall improved usability. In addition, the tools are synchronized so that the roles can quickly and effectively work together.






## **Improving business and IT collaboration**

BPM is a discipline that brings together business expertise and IT capability. Providing a set of technologies that enables these two areas to collaborate on defining, building, and managing business process solutions unleashes the power of the enterprise to win in the marketplace. Roles in both business and IT are empowered to self-sufficiently make their contributions. The increased range of capability and flexibility offered to business analysts and business leaders with WebSphere Business Modeler and WebSphere Business Monitor ensures that their needs and perspectives are considered, and the integration of these products with the development tools and runtime technologies ensures that the dialog between business and IT can continue to improve.

## **Building on open standards**

Given the heterogeneous nature of many client IT infrastructures, enterprises look for technology that provides maximum flexibility. Industry and technology standards offer open flexibility and safeguard IT investments.

IBM actively participates in several standards bodies pertinent to BPM, and IBM products support numerous standards.

|   |   |
|---|---|
|    | Business Process Modeling Notation (BPMN)<br>Business Process Definition Meta-model (BPDM)<br>Business Process Maturity Model (BPMM)<br>Business Motivation Model (BMM)   |
|    | Service Component Architecture (SCA)<br>Web Services Business Process Execution Language (WS-BPEL)<br>Common Base Event (CBE)<br>Web Services Event Format (WEF)<br>Web Services Notification (WSN)<br>Web Services Distributed Management (WSDM)<br>Web Services Resource Framework (WSRF) |
|    | An open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software   |
|    | Various Web and XML standards, including XML, XML Schema, XSLT, WSDL, XForms, and WS-Policy   |
|  | Web service interoperability profiles and testing tools   |

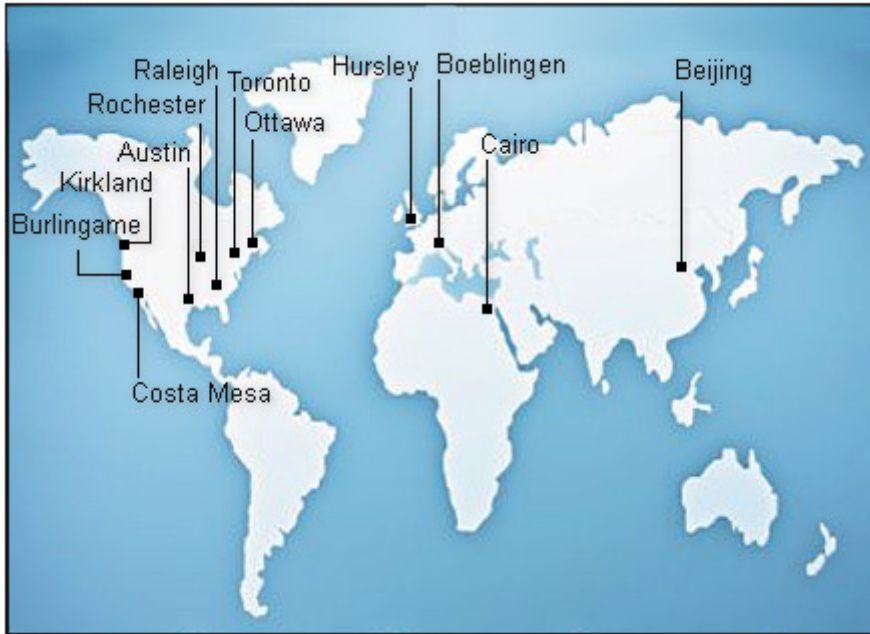
IBM also participates in or co-leads standards initiatives for BPEL4People, WS-HumanTask, J2EE and event processing.

## Supporting global solutions

As companies internationalize their operations and grow through mergers and acquisitions, the ability to act as one team while operating in multiple languages is critical. IBM BPM products provide national language support and are translated into dozens of languages, making the IBM BPM set of technologies truly global in scope.

Imagine having a team in Sydney develop your BPM solution for order tracking, order events from across the world being correlated through server clusters, regional offices tracking operational business activity in their native languages, and your headquarters in Madrid examining the impact of order processing on the company's overall strategy. Global companies require global solutions.

As an international company, IBM understands and operates in a global environment. The following map highlights the IBM product development laboratories where the BPM products are designed, implemented, and tested. Moreover, IBM BPM service specialists are located in all geographies. From Beijing to Burlingame, IBM is investing in BPM.



## Summary

The IBM BPM portfolio demonstrates its full value when harnessed to solve complex integration challenges, bringing LOB and IT together. The complete set of capabilities follows a consistent set of standards and underlying architectures to ensure that business users can effectively represent the business, that developers can properly reflect the business intentions when implementing solutions, and that administrators can easily manage, scale, and administer end-to-end business processes.

# Enabling BPM with WebSphere Business Modeler

- Define human-centric business processes, integrated with forms and data
- Model policies using business rules
- Start modeling faster using pre-built assets
- Simulate and optimize processes before you implement them
- Collaborate as a team to define processes
- Generate the baseline for process implementations

## Introduction

Traditionally, departmental and functional area managers have commissioned the definition of procedural manuals that could be disseminated across the enterprise. Defining processes was itself a long, painstaking process. IT assistance might have been required to automate specific numeric-intensive tasks, but the business managed the overall process.

As IT systems evolved, IT departments took on more responsibility for managing various aspects of process definition. In some cases, processes still dominated by manual tasks and paper were orchestrated as workflows. Many IT departments hired business-savvy IT staff who would take legacy procedural documents and interview subject-matter experts to define these workflows.

Today, many IT departments continue to manage the definition of business processes, but they realize that they need to improve the collaboration between business and IT. Business processes are best understood by the business, which needs the tools, methodologies, and assets, coupled with its own domain expertise, to define what the current business processes are, and what is required to improve them. The business needs to leverage reusable service assets in process definitions, and review process definitions with a broad team.

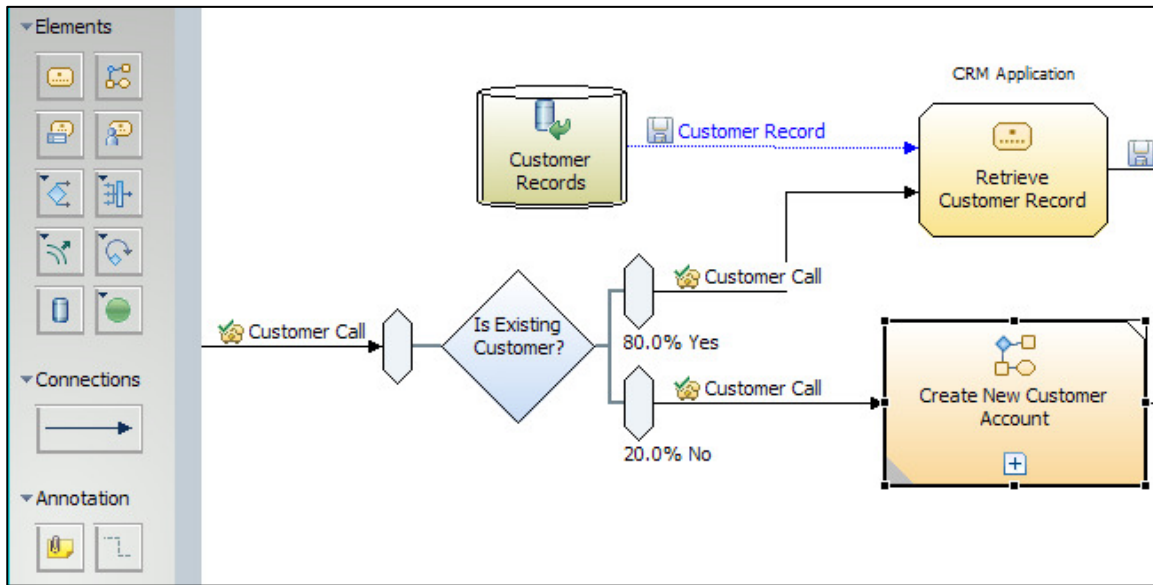
**Improve the  
collaboration between  
business and IT**

In addition to enabling business analysts to define business processes, WebSphere Business Modeler puts powerful process simulation capabilities in the hands of business to assess optimal task flows and use of resources. The results of various what-if scenarios can be compared to identify how they fare on task durations, costs, human involvement, resource usage, and other factors. Your business can achieve significant cost savings by determining the best processes to implement *before* these process specifications are handed over to IT. Thus, LOB plays its rightful critical role in enabling BPM.

## Growing the role of business

### Overview

With WebSphere Business Modeler, business analysts have a simple desktop tool that helps them formalize rigor into the definition of business processes in the form of tasks, decisions, business items (business-oriented data objects), resources, and repetitive task loops. These elements constitute the foundation for many business processes.



WebSphere Business Modeler model element types—business rules, human tasks, forms, and business item states—mirror the capabilities provided to IT developers in WebSphere Integration Developer, but expose the element characteristics that are relevant to business analysts.

### Business rules

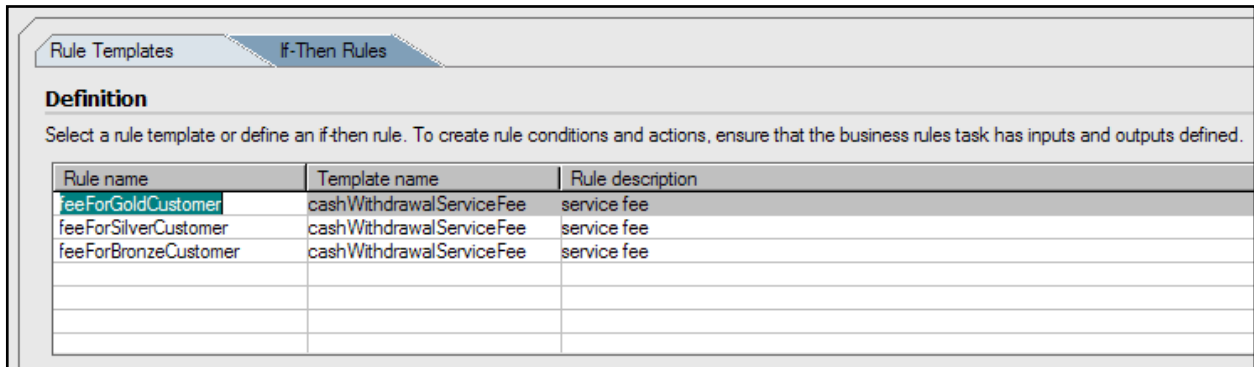
A business rule task is a specialized type of task that helps you, as a business analyst, define business policies. For example, consider the banking case where service charges for cash withdrawals vary depending on the customer account type (gold, silver, or bronze). Gold-account customers pay \$1.00, silver-account customers pay \$1.50, and bronze-account customers pay \$2.00.

Although the business logic for assigning the fee can be represented with a multi-branch decision and parallel task flows, business rules provide a consolidated way to encapsulate the policy. Key concepts in WebSphere Business Modeler allow rule-based information to be organized and reused effectively:

**Business rules provide a consolidated way of encapsulating the policy**

## Rule

A condition that must evaluate as true to perform a specific action. For example, if the customer is of type “Gold”, set the fee to “\$1.00”.



| Rule name            | Template name            | Rule description |
|----------------------|--------------------------|------------------|
| feeForGoldCustomer   | cashWithdrawalServiceFee | service fee      |
| feeForSilverCustomer | cashWithdrawalServiceFee | service fee      |
| feeForBronzeCustomer | cashWithdrawalServiceFee | service fee      |
|                      |                          |                  |
|                      |                          |                  |
|                      |                          |                  |

## Rule template

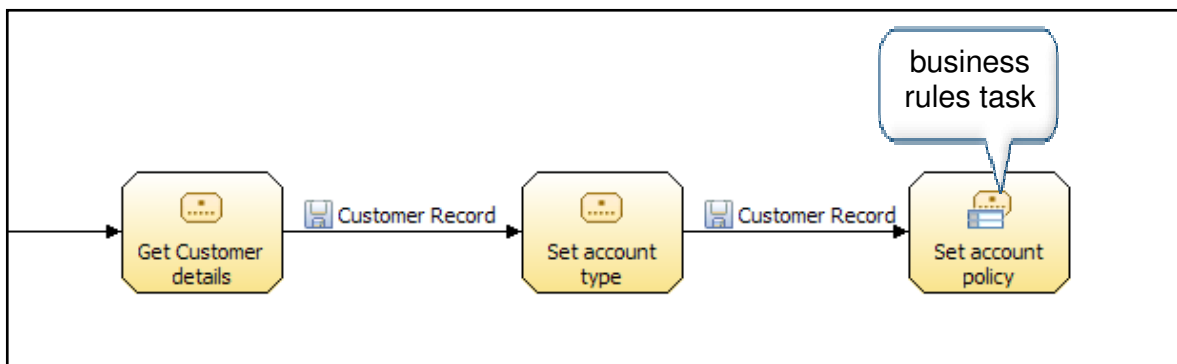
If there are several rules that have the same structure, a parameterized template simplifies the definition of many rules and can enforce the structure. For example, if the customer is of type X, set the fee to Y.

## Rule set

A group of rules (and an associated template) that enables you to manage related rules together. A rule set typically covers all eventualities so that you are certain that one rule will run, regardless of the input value. For example, the group of Gold, Silver, and Bronze rules, as well as the rule template above, constitute a rule set.

## Business rules task

A task that can contain multiple rule sets and allows multiple rule sets to run concurrently. For example, in addition to the service fee charge to be set, you also want to set the default credit limit based on the account type. In fact, this overall rule task could set all defaults related to account type as part of the account opening process.





You can also introduce policy changes over time. For example, at the beginning of the next fiscal year, change the service fee structure to better line up with the corporate strategy. You can define a new set of business rules to reflect the new fee structure, taking effect on a given schedule.

## Human tasks

Complex process flows are often a combination of automated tasks and human tasks. WebSphere Business Modeler users can not only assign a human role or specific individual to a task; they can also use a first-class process element called a human task, which enables an interaction between a person and a business process or service and complements the WebSphere Integration Developer entity by the same name.

To ensure that human tasks do not adversely delay a running process, you can define the escalation logic that will take effect after a specified interval.

**Escalation path: who to escalate to**

**Escalation schedule: when to escalate**

**Escalation action: how to escalate**

When you define an escalation on a human task, you can specify the following information:

- Who to escalate to – This could include chained escalations in case the first contact is unable to take action, and even parallel escalations to different parties.
- When to escalate – Whether the task can remain unfinished for a week or just 10 minutes, you can specify when someone else needs to get involved.

- How to escalate – What is the best way to contact the person whom the human task has been escalated to? You can choose e-mail or a managed to-do list, and you can specify and reuse the e-mail message associated with escalations.

## Forms

Just as human tasks help you define the manual aspects of a process, forms help you (the business analyst) define how business users interact with in-flight process information. In fact, forms in WebSphere Business Modeler can be associated with human tasks only. The relationship between forms, business items, and human tasks is natural:

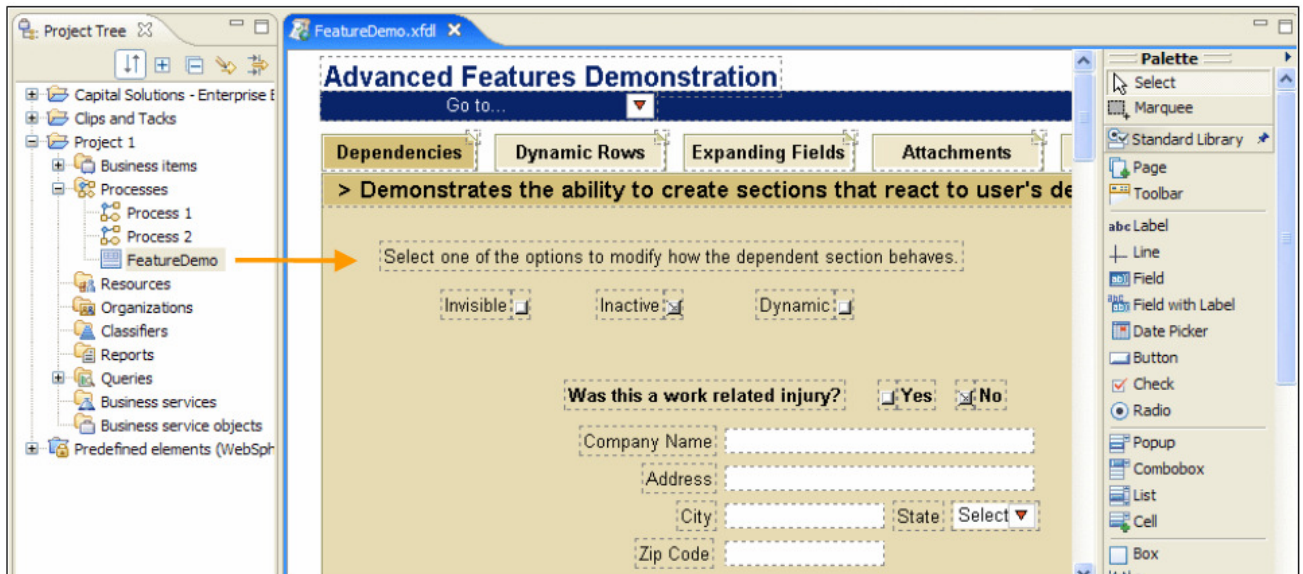
**The relationship between forms, business items, and human tasks is natural**

forms define the user interface, business items define the data being acted on throughout the process, and human tasks bring data and the user interface together.

Depending on the approach taken to define the business process, you have the flexibility to use any of these elements as a starting point.

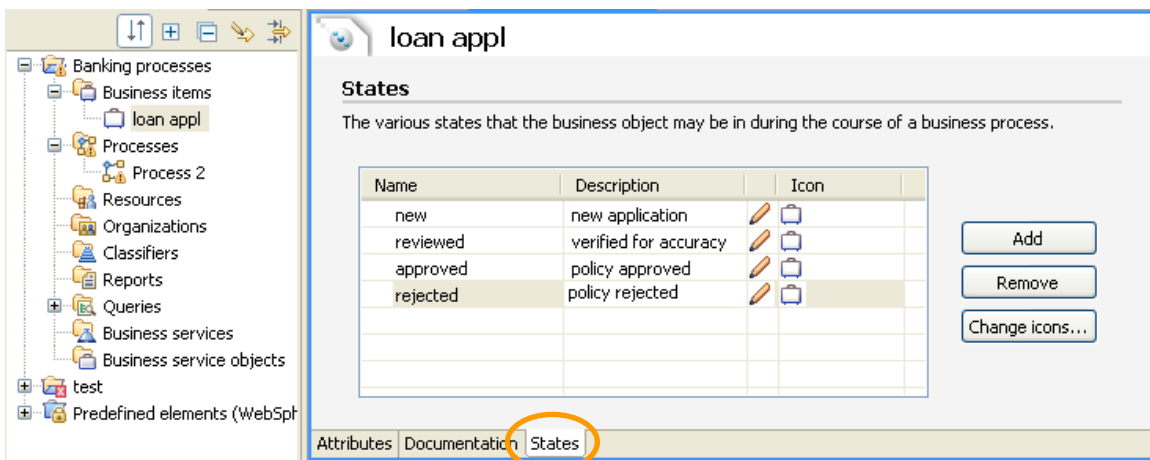
- Process approach – Define the task elements of the process first, including human tasks. When you create a human task, create a blank form as a placeholder for later definition (at the point when the business items will have been defined). For example, create a human task called “verify invoice,” and associate a blank form with it.
- Data approach – Based on business item definitions and human task inputs and outputs, generate a pre-populated form. For example, generate an Invoice form from the attributes of the Invoice business item.
- User interface approach – Start by defining the form, perhaps from a long-standing paper form that you are in the process of rendering electronically. From the form, create several human tasks and business service objects that interact with the form. For example, from the Invoice form, generate human tasks for Complete invoice, Review invoice, Approve invoice.

Lotus Forms Designer is now integrated with WebSphere Business Modeler so that you can create and view a new form easily. The integrated tools provide a rich, easy-to-use set of user interface widgets to draw an electronic form.



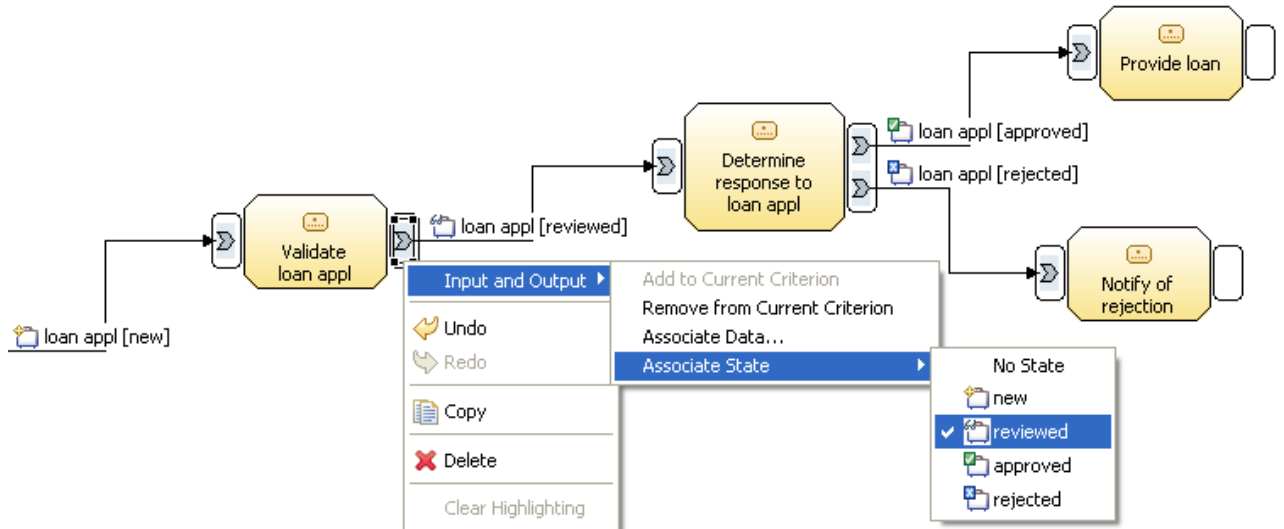
## Business item states

As a process instance runs, the attributes of business items that are associated with the process can change. You can also assign different states to a business item throughout the process. A state represents a specific phase of the lifecycle of a business item. For example, you can assign different states to a loan application as it works its way through a process: new, reviewed, approved, rejected. You can specify on input or output of a task the change in business item state. Keeping track of states gives the analyst a better understanding of how data moves through different phases, and enhances the company's ability to monitor how well the business is performing.



States tab

You can visualize the state representations in the diagram. Business items that are annotated on process diagrams can show state as well as custom state icons. As shown in the following diagram, when the Validate loan appl task completes, the state of the loan appl business item changes from **new** (on task input) to **reviewed** (on task output).



## Accelerating time to value

### Overview

Although WebSphere Business Modeler provides a wealth of capabilities that help you design your process models from scratch, having access to existing assets accelerates time to value. Industry accelerators provide direct industry-specific value for various industries, often aligned with specific industry standards and leveraged by IBM Global Services.

Using predefined assets that are available either directly with the product or are available from the IBM SOA Business Catalog provides the following benefits:

- Improved time to value by helping solution developers do their jobs more effectively
- Improved time to market by quickly providing relevant solutions
- Reduced development costs by reducing churn on resources
- Contained operating costs by reducing deployment time

## Predefined assets

When WebSphere Business Modeler is installed, a predefined modeling project is loaded into the project tree. This project includes out-of-the-box reports, queries, resources, and other elements that other projects can refer to or you can use as examples for new development.

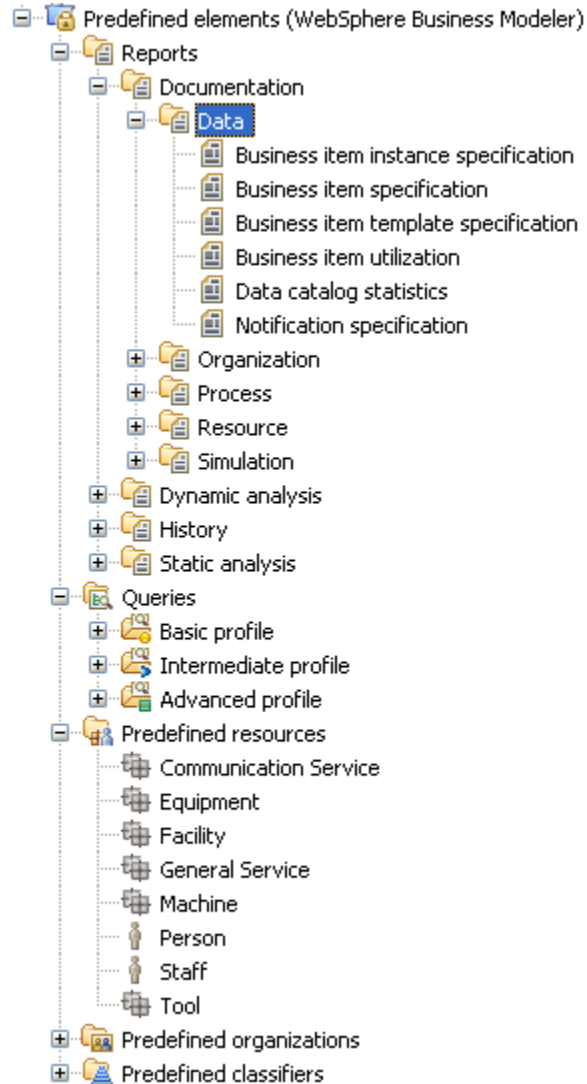
Predefined business measures templates, which are available in WebSphere Business Modeler, make it easy for you to specify the type of information that you want to capture for business monitoring. The templates help new users get a better understanding of the type of business measures that they can define. Advanced users can avoid the tedium of entering many business measure characteristics because each template automatically pre-populates some fields.

The following predefined templates are provided:

- State
- Working duration
- Elapsed duration
- Is delayed
- Start time
- End time
- Assigned user
- Is escalated
- Iteration counter
- Calling process name
- Business item input
- Business item output

## SOA Business Catalog

The SOA Business Catalog ([www.ibm.com/soa/soabusinesscatalog](http://www.ibm.com/soa/soabusinesscatalog)) is a comprehensive, online resource for clients to find ready-made business models (or predefined assets) supplied by IBM and IBM Business Partners that have been validated



**The SOA Business Catalog is a comprehensive, online resource for clients to find ready-made business models**

for enablement on IBM SOA products. The catalog holds thousands of assets, including adapters, Web services, process models, and plug-ins that are regularly updated to keep pace with business, technical, and regulatory changes and continually help you build your SOA solutions. Third parties (for example, IBM Business Partners) can register licensed assets in the catalog. The catalog provides an asset overview and details on where to get the asset and accompanying documentation.

You can search the catalog in many ways, including by using the following criteria:

- SOA entry points (people, process, information)
- Industry (such as banking, insurance, automotive, and retail)
- SOA lifecycle phase (model, assemble, deploy, manage)
- IBM product

The screenshot displays the IBM SOA Business Catalog interface. On the left, a sidebar contains a 'News' section with three bullet points, a search bar with a 'Go' button, and a navigation menu with tabs for 'Industries', 'SOA Lifecycle', 'SOA Products', and 'All categories'. Under 'SOA Lifecycle', the 'Model' option is circled in orange, with an arrow pointing to the right. The main content area on the right lists several assets, each with a description, company name, and a 'Download site' link. The assets listed are: SEEC Underwriting Action Update- Property & Casualty (INPC2244), ACI Payments Manager, Actuate Enterprise Reporting, AdminServer Policy Administration System, and BA77: WebSphere Business Modeler - FileNet Integration. The 'BA77' asset is highlighted with a blue background and includes a star rating of 5 stars (1 review).

IBM provides assets that are based on a long history of developing domain expertise. For example, assets that are associated with the Information Framework for Financial Markets draw on over 100 person years of modeling and analysis work with the financial services industry. Assets help you with such processes as post-trade processing and reporting, account opening, know-your-customer initiatives, and regulatory compliance, typically reducing analysis time by 40% and significantly accelerating the time it takes to secure stakeholder approvals.

# Collaboration

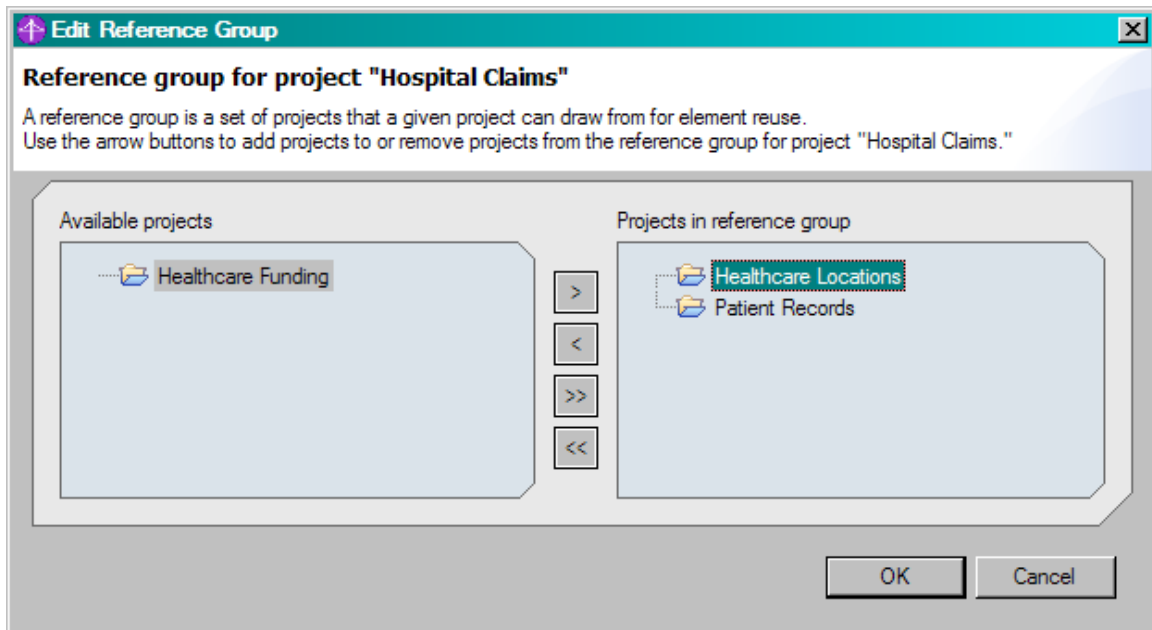
## Overview

For modeling projects to be successful and to ensure that they effectively factor in the broad organizational expertise for a particular domain, it is critical that teams be able to share process elements and have robust mechanisms for reviewing each other's work. In WebSphere Business Modeler, business analysts can share model project data through import and export facilities, team support (CVS, Rational ClearCase®), or by sharing PDF reports, and teams can collaborate by sharing data across projects, making project data available for viewing and commenting through the Publishing Server, and taking advantage of faster Rational ClearCase integration. Then they can generate reports in Microsoft® Word format.

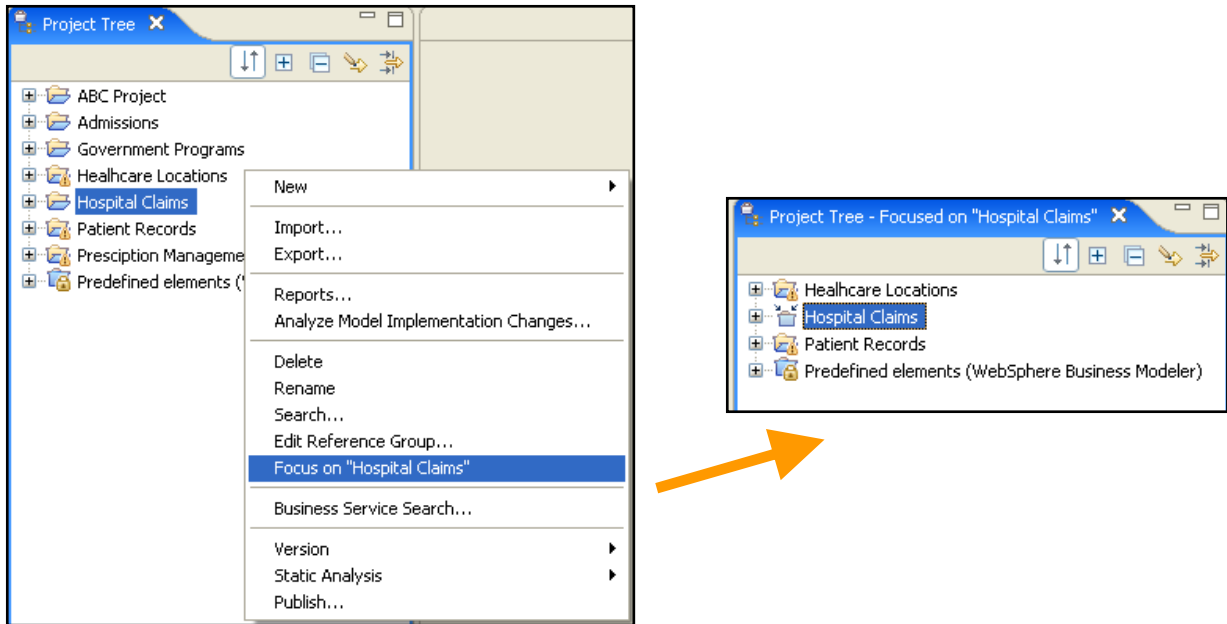
## Sharing across projects

Simply put, maintaining multiple copies of the same element across multiple projects is time consuming and leads to errors. By having sharable, dedicated projects to particular domains of process information, an organization can effectively build libraries of process elements, such as sharable projects for all credit-related services and for all claim-related business items. With the ability to share elements across projects, one project can refer to process elements in another project. As a recommended best practice, sharable projects can be treated as read-only in each team member's local workspace.

Each project in your workspace includes a reference group, which represents the set of other projects that a given project can leverage for element reuse. In the example below, the reference group for the Hospital Claims project can access the elements in the Healthcare Locations and Patient Records projects. Even when the referenced elements from these projects change, users working on Hospital Claims do not have to make corresponding changes.



In addition, you can hide workspace projects in your project tree that are not in the project group for the project that you are currently working on, which reduces visual clutter by minimizing the amount of data in your visible workspace, helping you focus on the task at hand.



This ability to share elements across projects represents the initial steps in enabling a business repository strategy.

## Publishing server

With WebSphere Business Modeler Publishing Server, process definitions and other model artifacts can be shared across a broad organization. Using a Web browser, you can view and comment on published draft processes, providing the opportunity for subject-matter experts, process implementers, and business analysts to collaborate on the definition of process models. After processes have been reviewed and approved, system-of-record process models can be published for referral across the enterprise intranet and even through a secure extranet with business partners.

**Using a Web browser, you can view and comment on published draft processes**

WebSphere Business Modeler Publishing Server now brings faster time to value by providing automated installation. A concise installation wizard gathers required information all at once, allowing the installation to run unattended. Prerequisite software components (WebSphere Application Server and WebSphere Portal Server) are automatically installed.

Furthermore, WebSphere Business Modeler Publishing Server offers high performance and scalability by leveraging DB2® for data management and WebSphere Portal to



render the user interface. In fact, the portal for published process models can be integrated into a broad organizational portal framework.

## **Team support enhancements**

When working on WebSphere Business Modeler projects as a team, sharing a team repository for project elements provides a reliable, centralized mechanism for exchanging data. WebSphere Business Modeler now provides much faster synchronization with Rational ClearCase when team members need to share model elements in a team environment and leverages ClearCase dynamic views, which provides significant performance improvements over the use of ClearCase snapshot views.

The snapshot view is a local view of team data, and requires two communication updates for each synchronization operation with the server. The dynamic view is server based, providing a live view of what is on the ClearCase server. Therefore, interactions between the WebSphere Business Modeler client and ClearCase server are more direct, reducing communication time by up to 50%.

## **Closing the gap between business and IT**

### **Overview**

Although WebSphere Business Modeler can be effectively leveraged on its own to document and share business processes, its value in a broader BPM context becomes more apparent when it is used in conjunction with other tools to define and implement business process elements. Various roles across business and IT are typically involved in enabling enterprise-scale projects. Therefore, having the ability to share data between tools becomes critical for the smooth hand-offs between roles.

WebSphere Business Modeler provides a broad range of integration capability, supporting the following formats or products: Microsoft Excel, Microsoft Visio, WebSphere MQ Workflow, Web services, XSDs, XML, Rational Software Architect (UML), WebSphere Business Monitor, WebSphere Integration Developer (BPEL), and WebSphere Service Registry and Repository.

Furthermore, WebSphere Business Modeler extends the integration with IT by providing deeper integration with WebSphere Integration Developer, integration with FileNet Business Process Manager, and enhanced integration with Rational Data Architect.

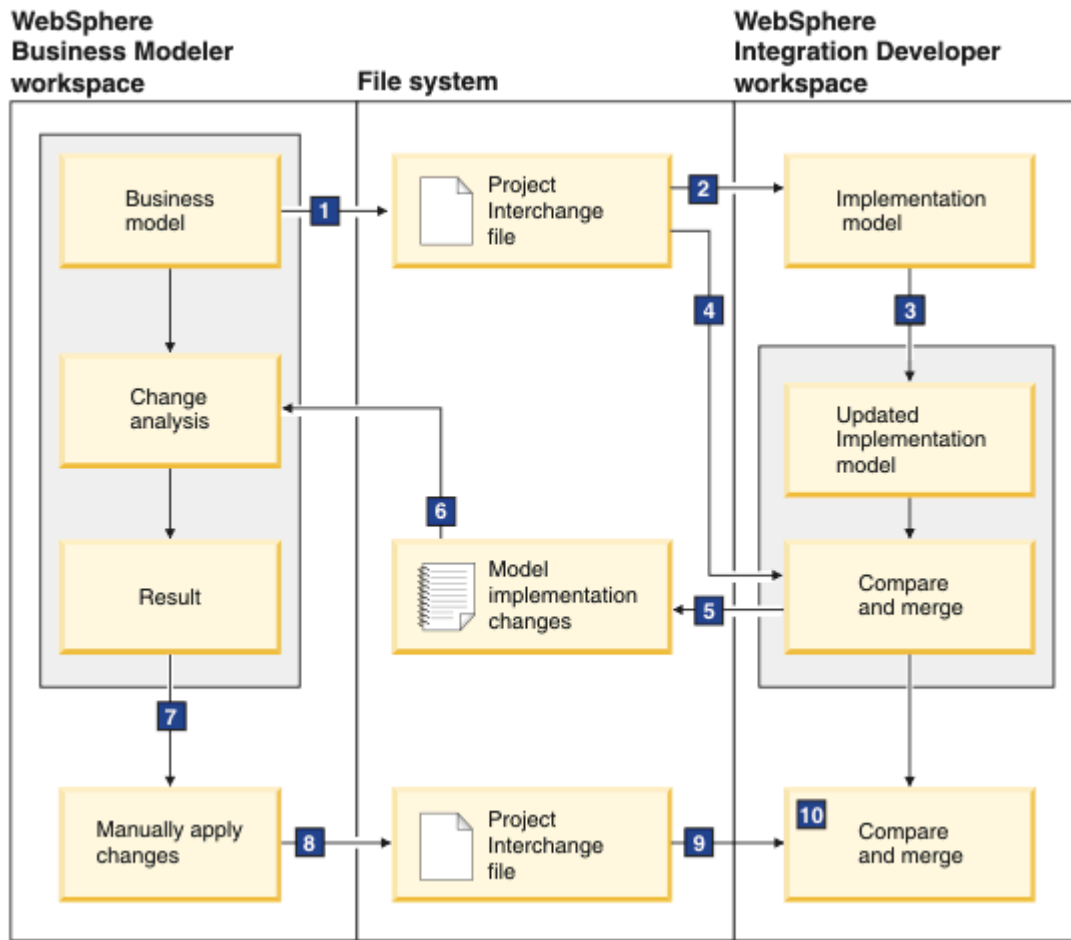
### **Modeling iteratively with WebSphere Integration Developer**

The relationship between business process elements that are defined in WebSphere Business Modeler and the corresponding IT artifacts in WebSphere Integration Developer is not always one-to-one. In fact, it is often isomorphic, making the transition from business to IT more challenging. WebSphere Business Modeler provides a WebSphere Process Server mode that constrains the process model to ensure it can be properly exported to WebSphere Integration Developer, and also offers guidance where technical details can be specified to fine-tune the nature of the IT-level artifacts that will be

generated upon export. The challenge remains, however, in managing iterations of definitions on both the business and IT sides, ensuring that they effectively understand the changes that have been made in the other domain, and keeping them in sync.

With WebSphere Business Modeler, an integration developer can make changes in WebSphere Integration Developer and then compare and merge those changes with the model that was originally exported from WebSphere Business Modeler. The integration developer can also generate a change-report file that lists the model implementation changes that a business analyst can use in WebSphere Business Modeler to analyze the changes. Based on the analysis, the business analyst can choose to update the business model to reflect the changes made during integration development.

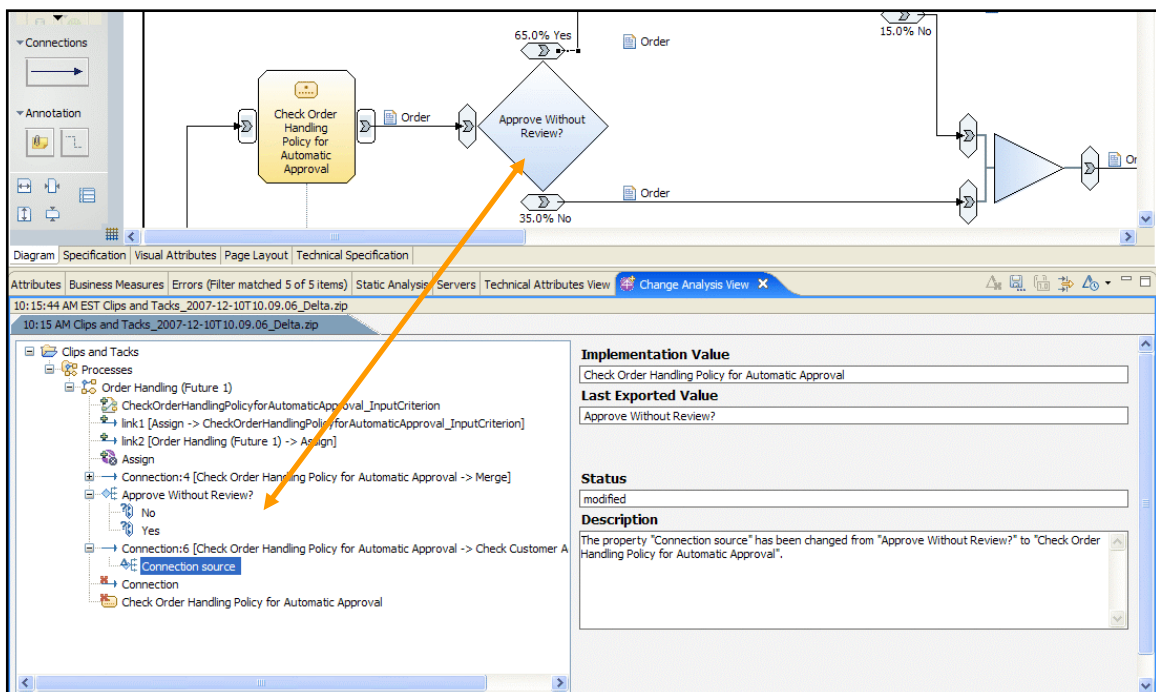
The following diagram shows the full cycle between the business analyst and the integration developer.



1. A business analyst exports the business model from WebSphere Business Modeler as a project interchange file. A set of runtime artifacts is created.
2. An integration developer imports the implementation model into WebSphere Integration Developer.

3. The integration developer refines the implementation model as required to create the application.
4. The integration developer compares the modified artifacts with the previous artifacts exported from WebSphere Business Modeler and merges the changes.
5. The integration developer generates a list of model implementation changes and exports the model implementation changes from WebSphere Integration Developer.
6. The business analyst works in WebSphere Business Modeler using the model implementation changes to compare the business model to the implementation model in WebSphere Integration Developer.
7. Where appropriate, the business analyst makes changes to more closely align the business model with the implementation model.
8. After making the changes, the business analyst exports the technical business model from WebSphere Business Modeler as a project interchange file. A new implementation model is created.
9. The integration developer imports the new implementation model into WebSphere Integration Developer and associates the modified artifacts with the previous artifacts exported from WebSphere Business Modeler.

The list of changes that the business analyst sees after importing the implementation changes provides them with the opportunity to verify whether or not the implementation has altered the business-level semantics of the process. WebSphere Business Modeler concurrently keeps track of which process elements in WebSphere Business Modeler have changed since the process was originally exported to WebSphere Integration Developer, and these are flagged as not suitable for review of implementation changes. The business analyst also has assistance to manage how implementation changes are being handled (applied, not applied, ignored).

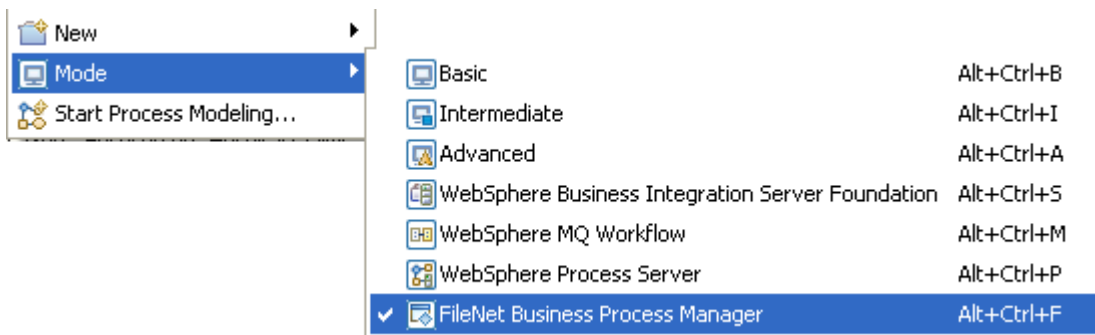


## FileNet Business Process Manager integration

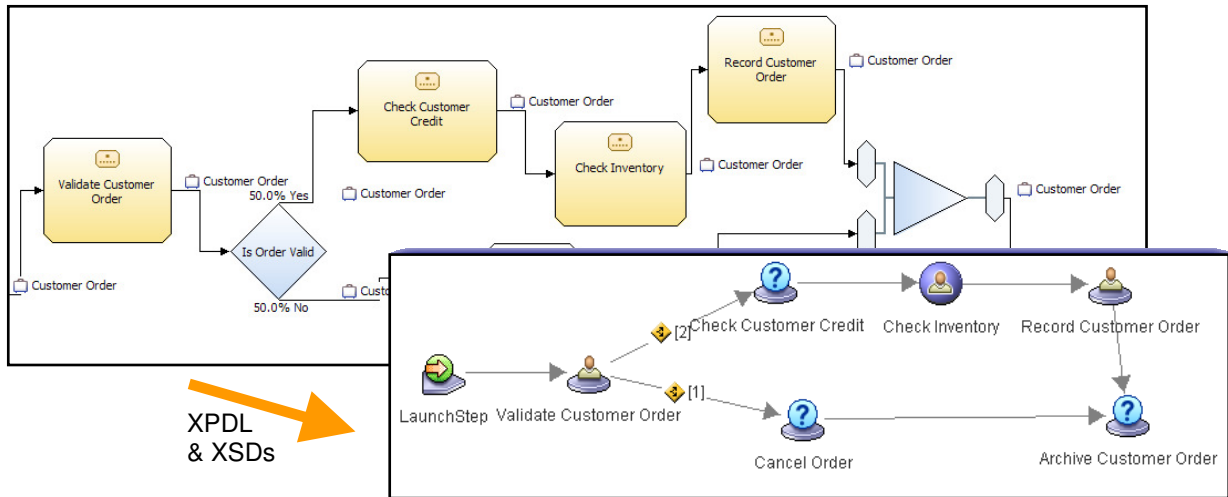
FileNet Business Process Manager provides a robust development and deployment environment for content-management solutions. As part of the broader family of IBM BPM products, it is important that existing FileNet customers and customers wanting to start new content-centric solutions be able to continue to leverage these tools. Also, business analysts would prefer to work with a single tool to define business process models, regardless of whether the target implementation platform is FileNet Business Process Manager or WebSphere Process Server.

**FileNet Business Process Manager mode validates that the project conforms to the FileNet environment**

WebSphere Business Modeler gives business analysts the ability to export model projects to FileNet Business Process Manager. Just as there is a WebSphere Process Server mode that business analysts can use to prepare business models that will be implemented in WebSphere Integration Developer, FileNet Business Process Manager mode validates that the project conforms to the FileNet environment.



When the business analyst has completed the business model, project elements or the entire project can be exported as an XPD file (for the processes) and XSD files (for business items). A developer then imports the files into FileNet Business Process Manager to implement the content-centric solution.



## Rational Data Architect integration

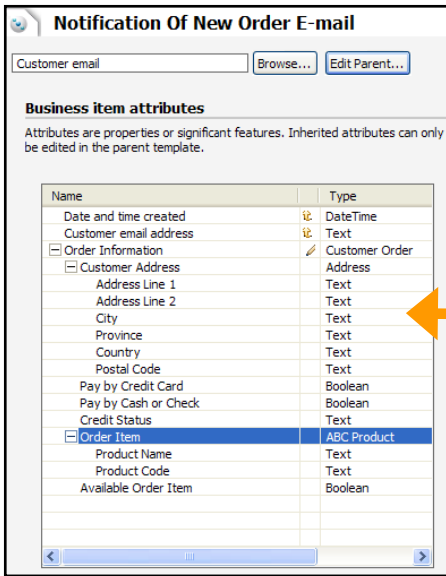
Data plays a critical role in business processes, whether they are customer records, accounts, manufactured parts, requisitions, claims, work orders, or invoices. It is critical that the definitions for these data examples be accurately reflected for both business modeling and data modeling.

The definition of data can originate from either a business or technical perspective. To strengthen the relationship between business and IT, and to maximize the reuse of data definitions, it is helpful to formalize the relationship between business models and data models:

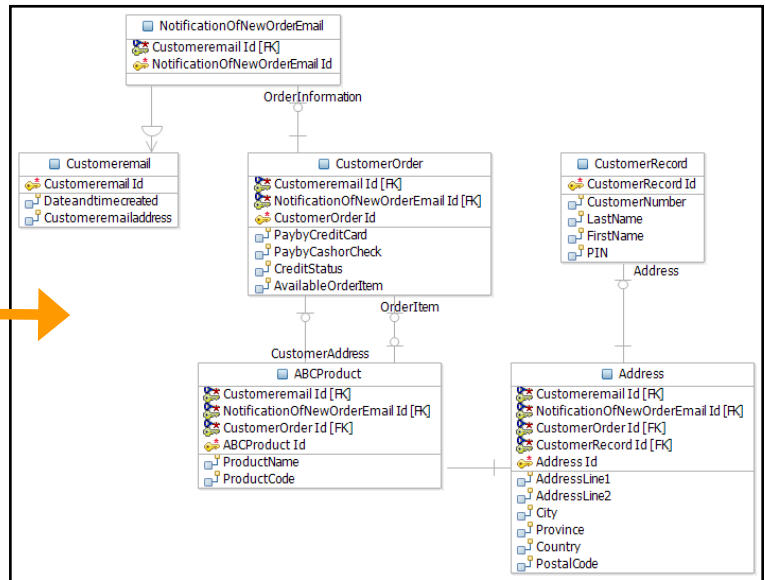
- Business models capture business information structures that are used in process flows, which can then become the basis for enterprise data models and ultimately relational database schemas.
- Existing data models from legacy and third-party applications often significantly impact the design of new business processes.

Consistent formats between business data models and logical data models enable easier process consolidation in mergers and acquisitions and organizational restructuring.

WebSphere Business Modeler provides an XML schema import and export capability to complement the Rational Data Architect XSD and Logical Data Model (LDM) transformation tool that transforms WebSphere Business Modeler XSDs to or from Rational Data Architect LDMs. When starting from WebSphere Business Modeler, you can validate your business data models while they are being defined to ensure that Rational Data Architect can import them.



WebSphere Business Modeler - XML



Rational Data Architect - Logical Data Model

## Summary

WebSphere Business Modeler enables business analysts to easily and rigorously describe various business processes, simulate and refine them for optimal business results, collaborate across the organization, and effectively interact with IT to have the process implemented.

# Enabling BPM with WebSphere Integration Developer and WebSphere Process Server

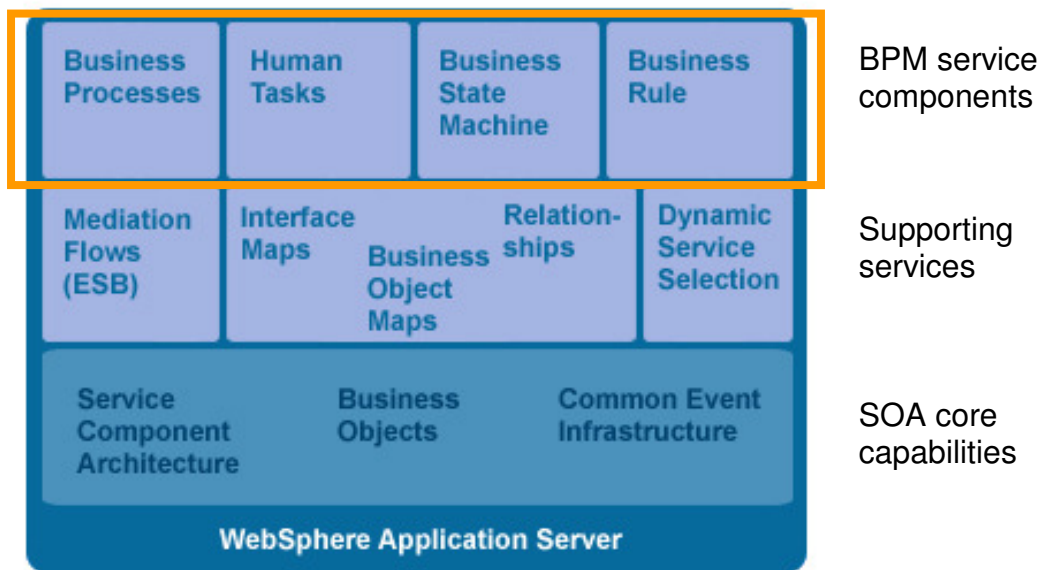
- Streamline your BPM lifecycle
- Leverage business process models designed by business analysts
- Integrate human tasks and forms with business processes
- Effectively enable your business to manage business processes and rules
- Keep pace with industry standards
- Test and deploy BPM solutions on proven, robust runtime environments

## Introduction

Market needs for workflow, process automation, application integration, choreography, and orchestration have all been evolving, and have begun coalescing around a set of principles, standards, and terminology. This evolution has allowed more general-purpose process and integration servers to serve the marketplace, where SOA enables BPM.

IBM's BPM strategy relies on two complementary products to enable BPM solutions: WebSphere Integration Developer to complete and test BPM solution implementations, and WebSphere Process Server to run and manage deployed BPM solutions.

WebSphere Process Server provides a proven high-performance platform for process integration and management. WebSphere Process Server supports various BPM capabilities, including processes, business rules, state machines, human tasks, and form integration with processes. These capabilities are built on top of a robust application server, an enterprise service bus, and SOA underpinnings.



WebSphere Process Server

To build these BPM solution assets, many clients begin by having business analysts define business processes and related artifacts with WebSphere Business Modeler. The business analyst brings domain expertise to the solution definition to determine what the business process looks like. When the business analyst is satisfied that the correct process has been defined, the same model can be used to generate implementation artifacts for WebSphere Integration Developer to use. The integration developer then completes the implementation of the solution that the LOB designed. Because WebSphere Business Modeler and WebSphere Integration Developer are integrated, business and IT can effectively collaborate on BPM solutions.

The integration developer has access to a wide range of functionality when authoring process integration solutions. Models imported from WebSphere Business Modeler are automatically translated into a set of standards-based BPEL processes and XSD-typed data. Alternatively, you can code your systems in languages that are well suited to the business integration domain. You can also wire systems together using the assembly editor or, if you need more complex processing logic, you can lay out the orchestration between processes and expose it as a service for further reuse. All design elements are built on the Service Component Architecture (SCA).

WebSphere Process Server helps orchestrate the assets of a business to form highly optimized and effective processes, enabling both integration-centric and human-centric scenarios. It also includes service bus capabilities, which mediate disparate services, helping to maximize the reuse of assets wherever they are, regardless of the vendor, platform, or whether they are built by companies themselves or provided as part of packaged applications.

## **Streamlining the BPM lifecycle**

### **Overview**

BPM is about more than just being able to implement and run BPM solutions. Business analysts understand business processes best, and they need the tools to define those processes and collaborate with IT so that the processes can be implemented. As well, business leaders can understand and improve the business when information about running processes can be correlated and reflected in business dashboards. To accelerate the development of end-to-end BPM solutions, WebSphere Integration Developer is integrated with WebSphere Business Modeler and WebSphere Business Monitor.

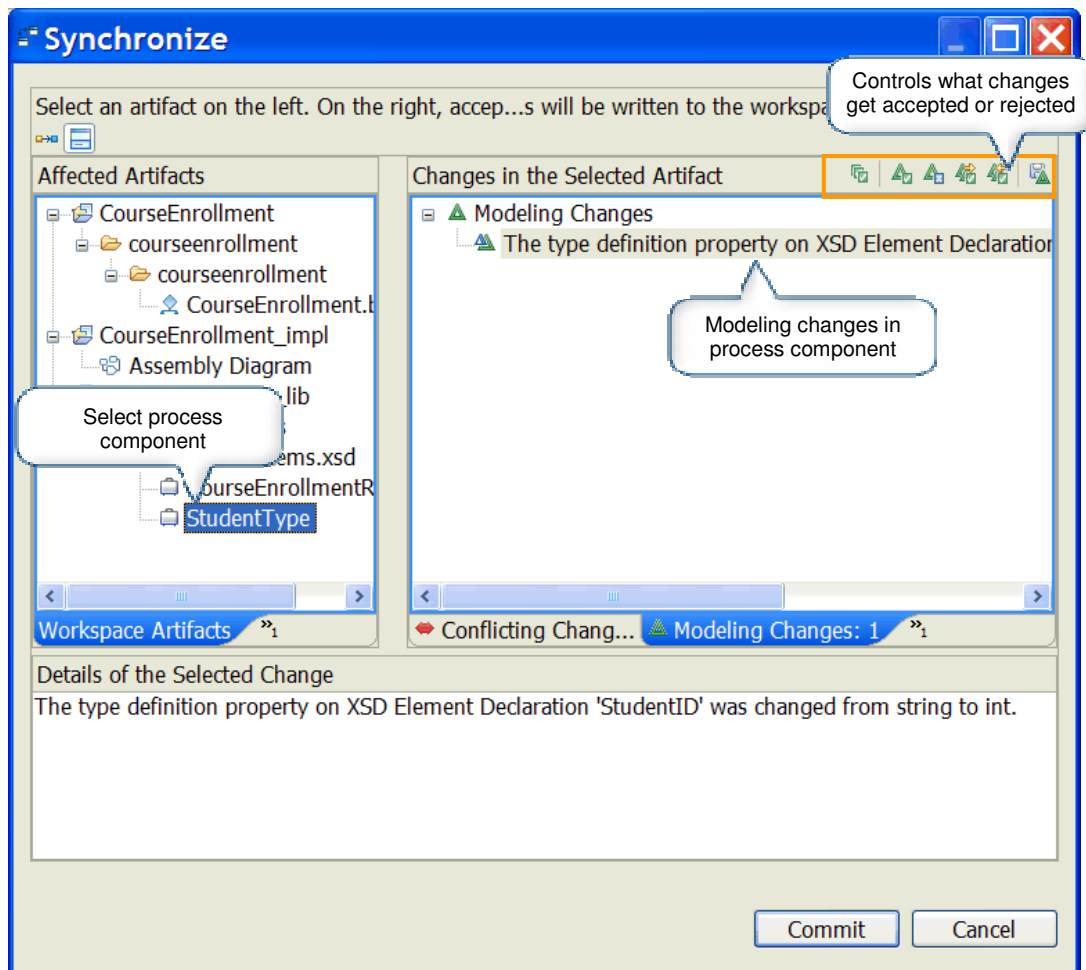
### **Consuming iterative definitions from WebSphere Business Modeler**

The relationship between business process elements that are defined in WebSphere Business Modeler and the corresponding IT artifacts in WebSphere Integration Developer is not always one-to-one. In fact, it is often isomorphic, making the transition from business to IT more challenging. WebSphere Business Modeler includes a WebSphere Process Server mode that constrains the process model to ensure that it can be properly exported to WebSphere Integration Developer, and also offers guidance where you can specify technical details to fine-tune the nature of the IT-level artifacts that are generated



on export. The challenge remains, however, in managing iterations of definitions on both the business and IT sides, ensuring that each effectively understands the changes that have been made in the other domain, and keeping them in sync.

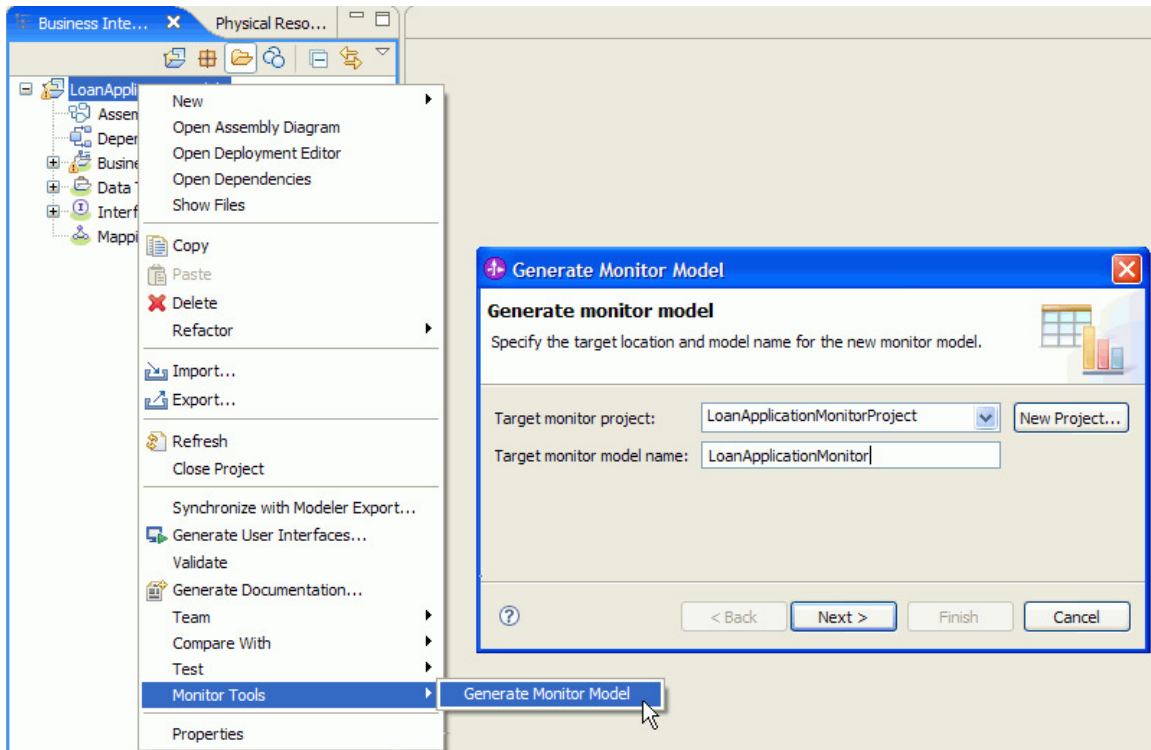
The integration developer uses WebSphere Integration Developer to receive updates from the business analyst and (as shown in the following diagram) see specifically where changes have been made in the exported artifacts. Then you can easily compare changes to existing versions of the artifacts and merge the appropriate changes. You can also generate a change-report file that lists the model implementation changes that a business analyst can use in WebSphere Business Modeler to analyze the changes.



## Sharing evolving projects for monitor model development

You can use events that occur while process instances run on WebSphere Process Server as input into what business users see in WebSphere Business Monitor dashboards. WebSphere Integration Developer provides first-class integration with the Monitor Toolkit to accelerate the development of monitoring models for these processes. WebSphere Business Monitor provides the Generate Monitor Model wizard, which introspects each module to generate a stand-alone monitor model that is based on a

predefined template for that type of module (process, human task, business rule, and so on). Then you can further refine the generated model. You also maintain the flexibility to add other monitoring elements iteratively, which allow both the application and the corresponding monitoring solution to co-evolve. The integrated tools enable you to keep the two code bases (implementation code and monitor model) in sync, without requiring you to manually reconcile existing and updated monitor models.



## Enhancing human-centric BPM

### Overview

With the ability to involve people in business processes in WebSphere Process Server, you can capture simple to complex business processes that include a mixture of automated and human steps. By treating a human task as another kind of service, you can build flexible processes that evolve to become more automated over time (for example, replacing a current human task with an automated service) without significantly reworking the original process.

WebSphere Integration Developer and WebSphere Process Server offer a broad range of support for human-centric BPM:

- Integrated forms capabilities
- Client-generation capabilities

- Finer-grained control over the selection of people who may perform a given human task
- Implementation-time testing of complex human task scenarios using a preconfigured directory
- Support for organizations that have large groups of people that may be assigned specific human tasks
- Batch processing capabilities

These features simplify configuring and managing processes that involve people; therefore, reducing total cost of ownership.

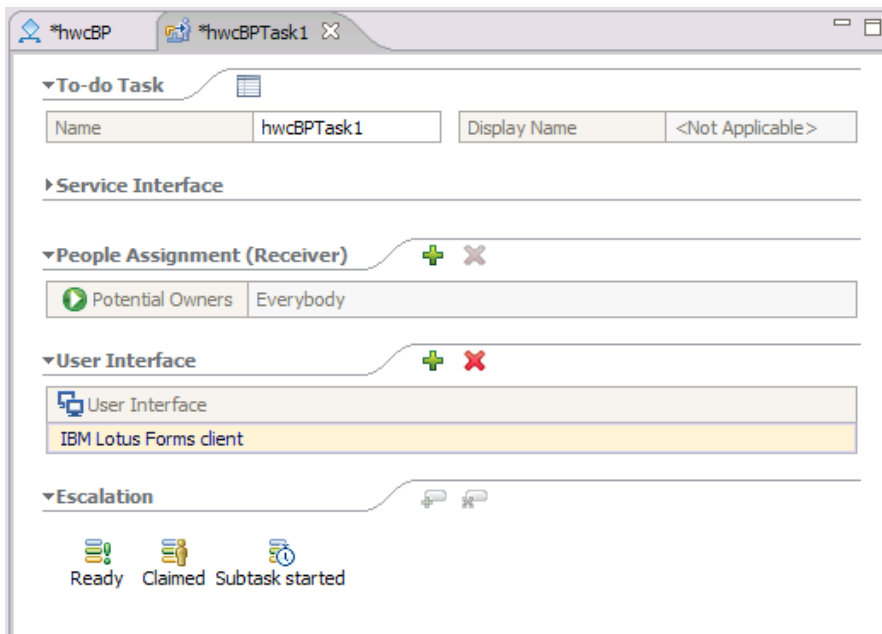
## Integrated forms

People often use forms in BPM applications as input to start a business process or to capture the progress of a business process. WebSphere Integration Developer and WebSphere Process Server integrate Lotus Forms capabilities for a richer BPM experience at both authoring time and at run time.

**Use the integrated Lotus Forms capability to generate forms-based clients**

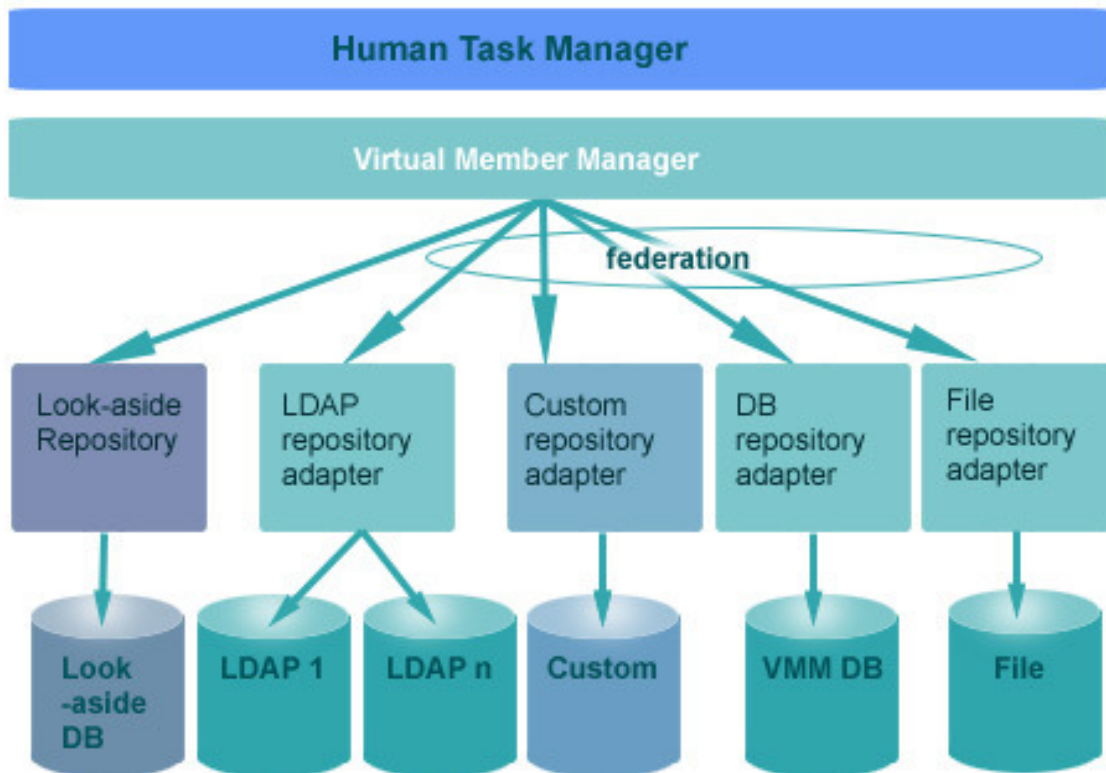
With WebSphere Integration Developer, you can use the integrated Lotus Forms capability to generate forms-based clients on existing human tasks. In fact, you can generate a form for any component in WebSphere Process Server and, by using an originating human task, you can capture the form information and tie it to a component.

You can also create a process from an existing form. For each step in the process that interacts with the form, associate either an automated task or a human task. When both the form and business process exist, associate the form with the appropriate tasks in the process.



## Federating staff repositories and participant substitutions

WebSphere Process Server leverages the Virtual Member Manager capabilities in WebSphere Application Server to provide advanced support for assigning individuals or groups to specific human tasks. Virtual Member Manager makes it easy to extend the number of attributes and factors that can be injected into the process of deciding who does specific human tasks.



Also called *delegation support*, this key capability allows you to inject additional support into the assignment process so that you can more easily manage absences by having first-class support for substitution. Not only is the manual effort of reassigning sets of work items eliminated, but the automatic reassigning of tasks ensures that human tasks are not left waiting just because they were not reassigned.

Substitution allows you to specify whether someone is absent and, if absent, to identify other people as substitutes. In WebSphere Integration Developer, you can define absence and substitute information at run time using a human task management client, such as Business Process Choreographer (BPC) Explorer. You define the substitution policy to be applied on a task template-by-template basis. Depending on the selected policy, various criteria are applied at run time to compute the substitutes, as shown in the following figure.

**Automatic reassigning of tasks ensures that human tasks are not left waiting**

**Collaboration Task - AdHoc**

People directory (JNDI name): bpe/staff/samplevmmconfiguration

Task priority: 5

Business category:

Default language: English - United States

Event handler name:

Substitution policy: No substitution

Date (UTC) when task becomes available:
 

- No substitution
- Replace absent users with their substitutes
- Prefer present users

None Time: 0 Hours 0 Minutes 0 Seconds

Business-relevant
  Enable subtask creation

Task can be claimed when it is suspended
  Transfer task

Enable follow-on task creation

Give owner read access to surrounding process context data

## Prototyping support using a preconfigured people directory

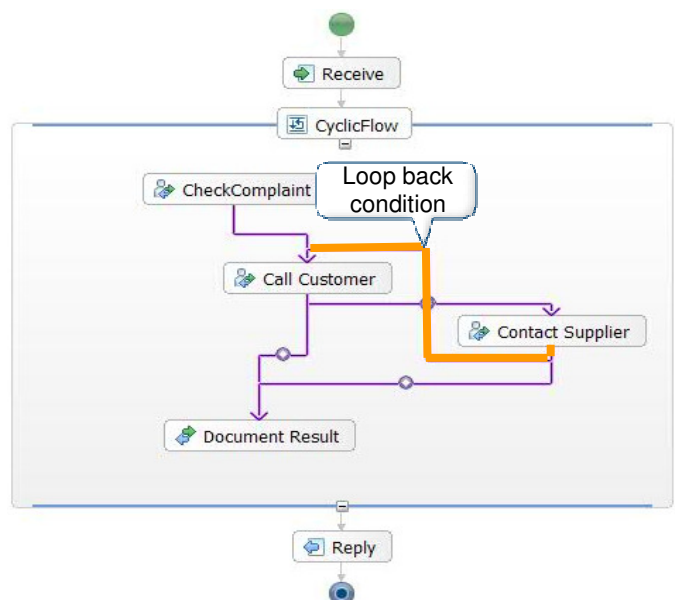
WebSphere Integration Developer comes with a preconfigured people directory, which makes testing human tasks easier. The samples that are provided use this directory. For example, queries like “manager of” are supported out of the box if you use some of the preconfigured people in the directory.

## Batch processing of human task operations

With WebSphere Process Server interfaces, you can batch operations that are related to human tasks (for example, when you want to transfer many tasks from one user to another). With these interfaces, you can more easily create scripts and programs that administrators use to manage business and organizational changes, improving total cost of ownership and increasing the flexibility of the overall system to handle changes injected by dynamic business conditions.

## Cyclic flows

With cyclic flows, a business process includes a back link, which is especially valuable when you model more advanced processes that involve human interaction and you want to avoid complex BPEL modeling. Cyclic flows are an extension to BPEL 2.0.



## **A foundation for reusable assets**

### **Overview**

BPM is enabled by SOA. Business integration programmers work either top-down (aggregate existing assets) or bottom-up (author new functionality) to produce enterprise quality software. Either method of development can present several hurdles to the user when proprietary technologies are introduced, either by requiring programmers to master unfamiliar concepts or by creating problems when integration with other vendors is necessary. IBM addresses these challenges by supporting the SDO, SCA, and BPEL open standards.

### **Service Data Objects (SDOs)**

As a business integration programmer, you can be called upon to master different data implementations, such as EJB CMPs, JDBC RowSets, and JMS Objects. By using SDOs, you can minimize the learning curve that is usually required to handle multiple standards. SDOs provide a consistent view of the data with an abstraction layer for disconnected data. You can easily define this generic data model using the business object editor. Because the underlying technology is based on well-defined XML, it is relatively easy to map application specific data into common formats using the IBM XML mapping tools or to manipulate that data as it flows through the main process.

Alternatively, you can generate business object definitions from existing enterprise assets using the external service wizard (for example, with an existing SAP or Oracle system) or by importing existing XSD files into the workspace.

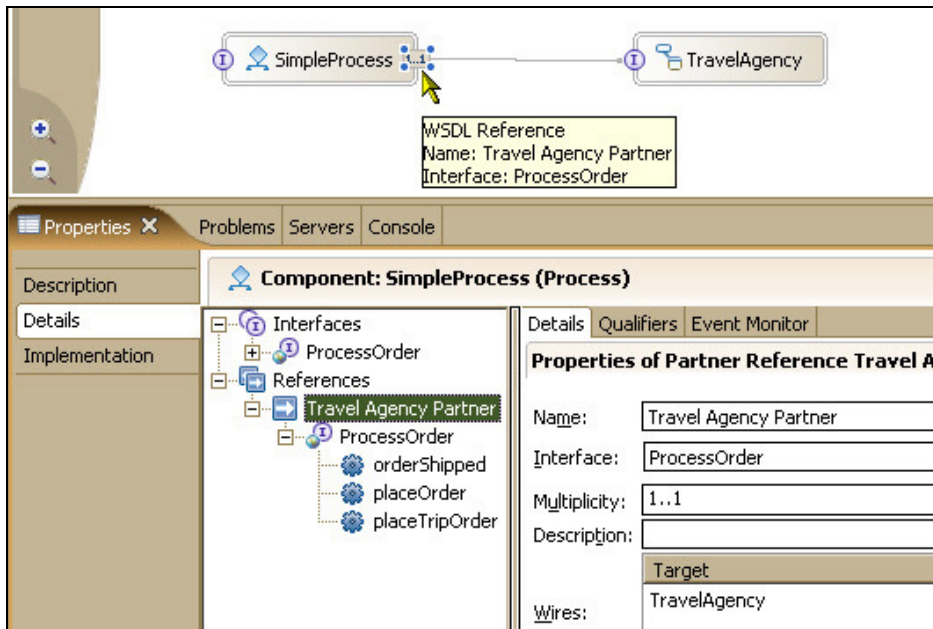
### **Service Component Architecture (SCA)**

Key to delivering SOA solutions is the concept that each service should have well-defined interfaces, shielding you from implementation details so that you can focus on the functionality that the services deliver and how that functionality relates to business needs. IBM has joined with several other industry participants to define a standard for component-based architecture: SCA.

SCA is an industry-standard architecture in which a set of components are defined and wired together through interfaces. SCA provides loose coupling to the actual endpoint implementation for the services that are defined in the business process. You can abstract endpoints further by performing lookups through the WebSphere Service Registry and Repository. Plus, business analysts can reuse services that were defined in WebSphere Integration Developer as black-box implementations in WebSphere Business Modeler, providing a clear delineation between the producer and consumer of services.

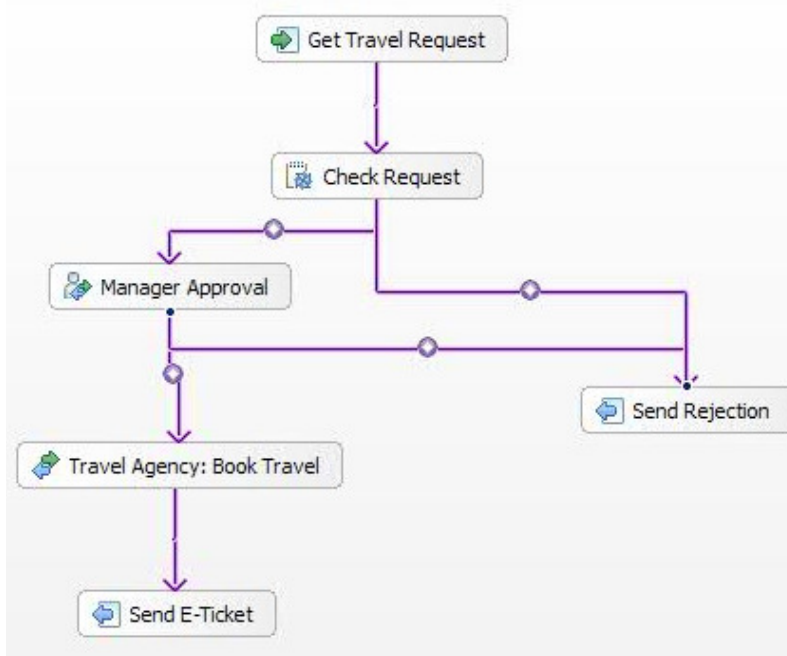
Each of the major programming models offered in WebSphere Integration Developer are represented as an SCA component at development time (human task, Java™, process, rule group, state machine). The key advantage to using an SCA component is that the interface is separate from the implementation so an implementation strategy can change without requiring the interface that is defined in the SCA component to change.

When development is complete, you can extend the system by importing services or making new services available for reuse. The WebSphere Integration Developer toolset seamlessly represents all data as SDOs, reducing programming complexity.



## BPEL choreography

Using the BPEL programming language, you can orchestrate multiple Web service invocations with more complex business logic. The base language defines support for multiple invocation paths, variables, and complex compensation or fault handling when errors are encountered.



BPEL processes, which can run for years if needed, might need to be even more flexible than the base language allows them to be. For this reason, IBM supports two extensions to the BPEL standard: BPEL for Java and BPEL4People. BPEL for Java allows you to define complex business logic inside your processes using the Java programming language. BPEL4People defines a mechanism for human tasks to be included in the process.

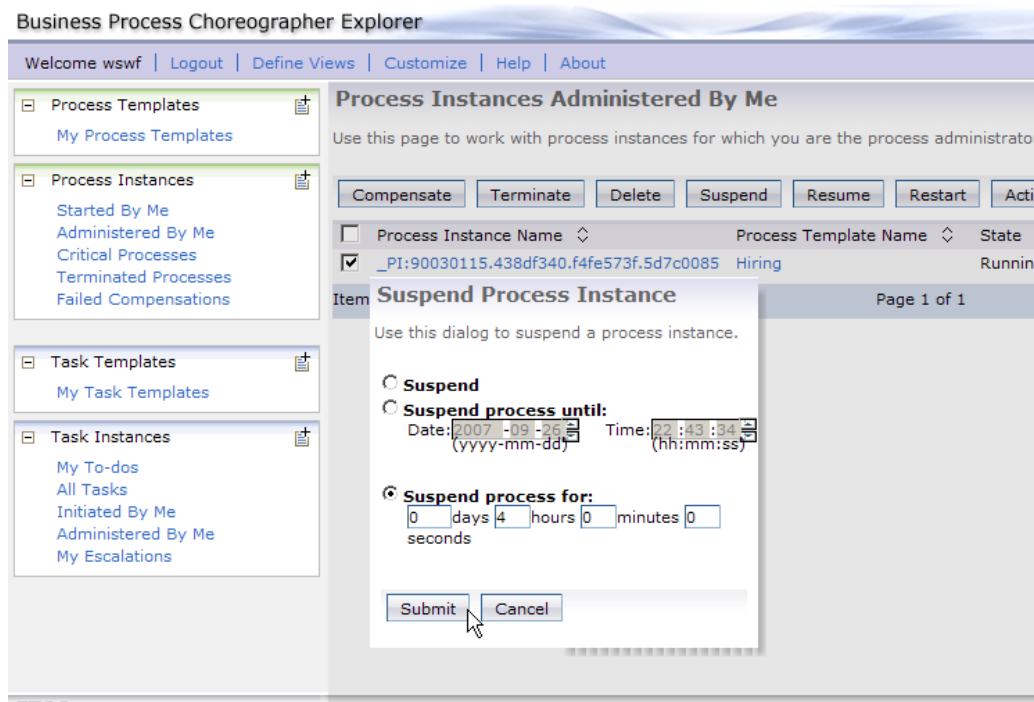
## Lowering the cost of ownership

### Overview

After you have deployed your BPM solution, you want to keep the resources required to maintain that solution to a minimum. WebSphere Process Server helps you manage process suspensions, gives you more control over which process instance completion records are maintained, and shows you the updates to business rule behavior.

### Suspending process instances

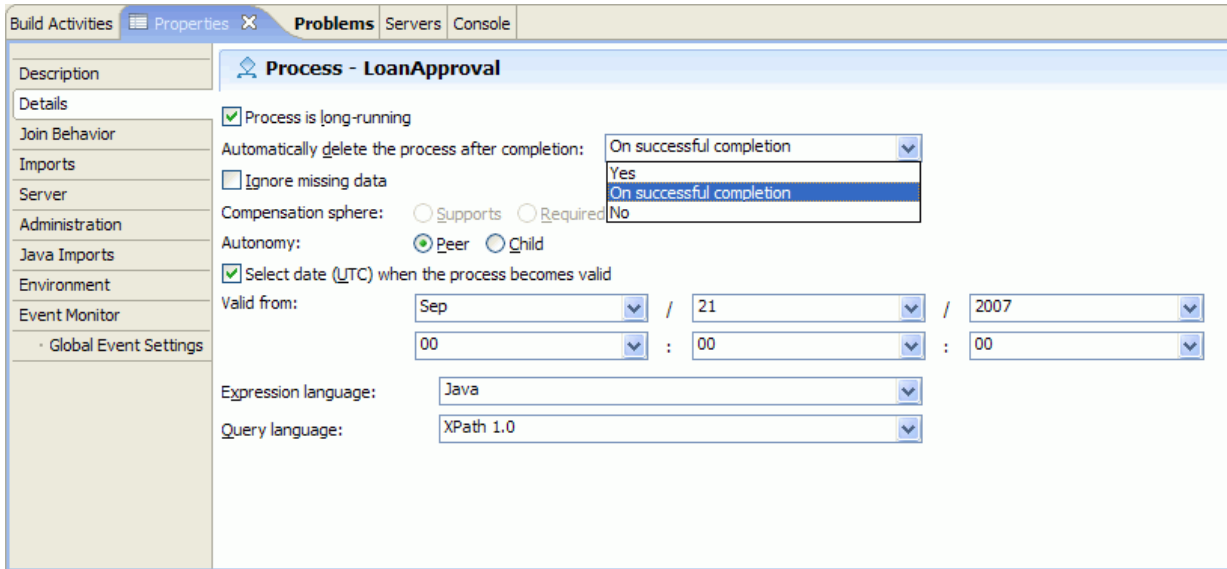
Sometimes you have to stop a specific process or suspended it for business reasons. With WebSphere Process Server, you can suspend processes for a specific period of time or until a specific date without having to write code to get this kind of fine-grained control.



### Managing completed process instances

Businesses often need to maintain an audit trail or record of completed processes. Using WebSphere Process Server, you can delete processes that complete successfully and retain those that are in states that need administrative attention or might have special auditing requirements.





In addition, graphical views of processes and other controls make managing process instances more efficient by reducing the amount of human administration and easing the task of maintaining an audit trail, which contribute to reducing the total cost of ownership for maintaining a running system.

### Custom management of business rules

The business rules logic that is extracted from a business process must be modifiable as the needs of the business change. For each business rule, you can change a number of items. For example, for each operation defined on a business rule group, you can modify the schedule of active rules for that operation. You can modify the current business rule that is active for the operation or you can schedule business rules to be active in the future. You can even update a business rule (rule set or decision table) after it has been deployed to WebSphere Process Server.

In addition, by using templates, you can modify the parts of the rule logic in the rule sets or decision tables. For example if a business rule is used to specify the discount on orders above a specific amount, the amount of the discount as well as the amount of the order are parameters that, with a template definition, you can modify using different management clients. The following diagram shows a rule set with rules specified using templates.

approveOrderRS

▼ Rule Set

|      |                |              |                |
|------|----------------|--------------|----------------|
| Name | approveOrderRS | Display Name | approveOrderRS |
|------|----------------|--------------|----------------|

▼ Interface

|           |               |         |  |
|-----------|---------------|---------|--|
| Interface | OrderApproval |         |  |
| Operation | approveOrder  |         |  |
| Input     | input1        | Order   |  |
| Output    | output1       | boolean |  |

▼ Variables

| Name | Type |
|------|------|
|      |      |

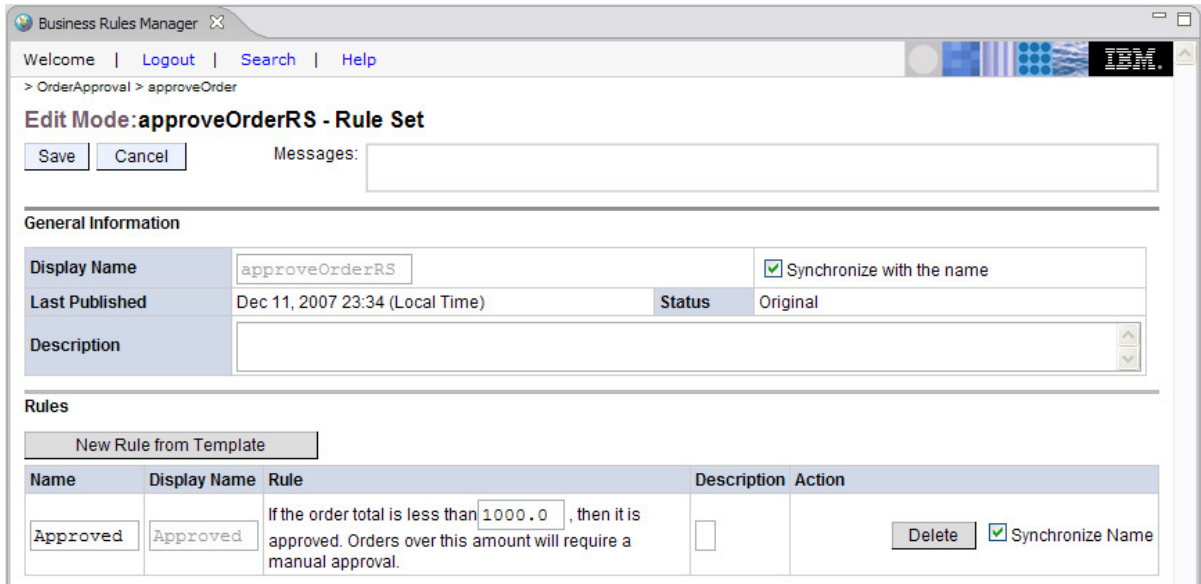
▼ Rules

|              |  |
|--------------|--|
| Name         | Approved   |
| Template     | Template_Aproved   |
| Presentation | If the order total is less than <b>1000.0</b> , then it is approved. Orders over this amount will require a manual approval. |
| Name         | NoApproval   |
| Presentation |  |
| Action       | output1 = false  |

▼ Templates

|              |  |        |            |             |
|--------------|--|--------|------------|-------------|
| Name         | Template_Aproved   |        |            |             |
| Presentation | If the order total is less than <b>param0</b> , then it is approved. Orders over this amount will require a manual approval. |        |            |             |
| Description  |  |        |            |             |
| Parameters   | Name   | Type   | Constraint | Description |
|              | param0   | double | None       |             |
| If           | input1.total < param0  |        |            |             |
| Then         | output1 = true   |        |            |             |

With WebSphere Process Server, there are multiple clients for managing business rules, such as the business rules manager Web application. Using the business rules manager, you can make all of the changes listed above to business rules that are deployed to WebSphere Process Server. You can also search for business rule groups using property values that are specified in WebSphere Integration Developer or properties that were added using the business rules manager. The following diagram illustrates the business rules manager view of a rule set in edit mode.



## Summary

WebSphere Process Server and WebSphere Integration Developer provide robust standards-based capabilities to implement, test, deploy, and manage BPM solutions. These products form the integral enabling component of the IBM BPM portfolio and are integrated with a broad range of connectivity technology to extensively reach across heterogeneous systems in your enterprise. By linking business and IT, WebSphere Integration Developer and WebSphere Process Server contribute to a holistic BPM strategy.

# Enabling content-centric BPM with FileNet Business Process Manager

- Achieve integrated content management at the architectural level
- Monitor or subscribe to content metadata to trigger the appropriate processes when a change is detected
- Model processes in Visio, and then import them into FileNet Process Designer
- Rapidly develop applications and interfaces without coding
- Maintain the look and feel of your paper forms with electronic forms

## Introduction

In addition to providing proven technologies in the areas of application integration, process automation, and choreography, IBM also offers FileNet Business Process Manager (FileNet P8) for clients who need content-centric BPM as part of a broader enterprise-content management (ECM) strategy. Content-centric BPM allows you to automatically retrieve and then review documents (such as scanned images and e-mails) in an approval step, enter data from those documents into other systems, and use the information in those documents to make decisions.

## Why content-centric BPM?

Content-centric BPM has unique technical requirements, the primary requirement being integrated ECM functionality. Many enterprises have millions (if not billions) of electronic files that need to be managed in conjunction with business processes. Consider how you often need to review, distribute, create, or complete electronic documents during a step in a business process. Having the right content available when it is needed at a process decision point allows you to make better decisions faster and enhances organizational responsiveness. FileNet Business Process Manager is unique because it provides integrated content management at the architectural level with mature business process capability.

**Make better decisions  
faster by having the right  
content when you need it**

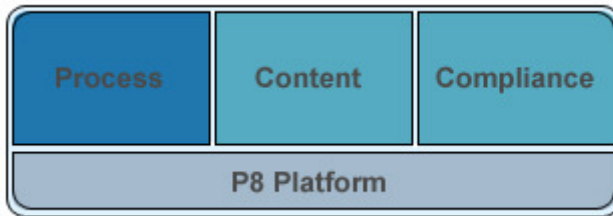
## WebSphere and FileNet

As core offerings in the IBM BPM portfolio of products, the FileNet products are well integrated with the modeling and BAM capabilities that WebSphere Business Modeler and WebSphere Business Monitor offer. For more information, see the Modeling and Monitoring sections of this chapter.

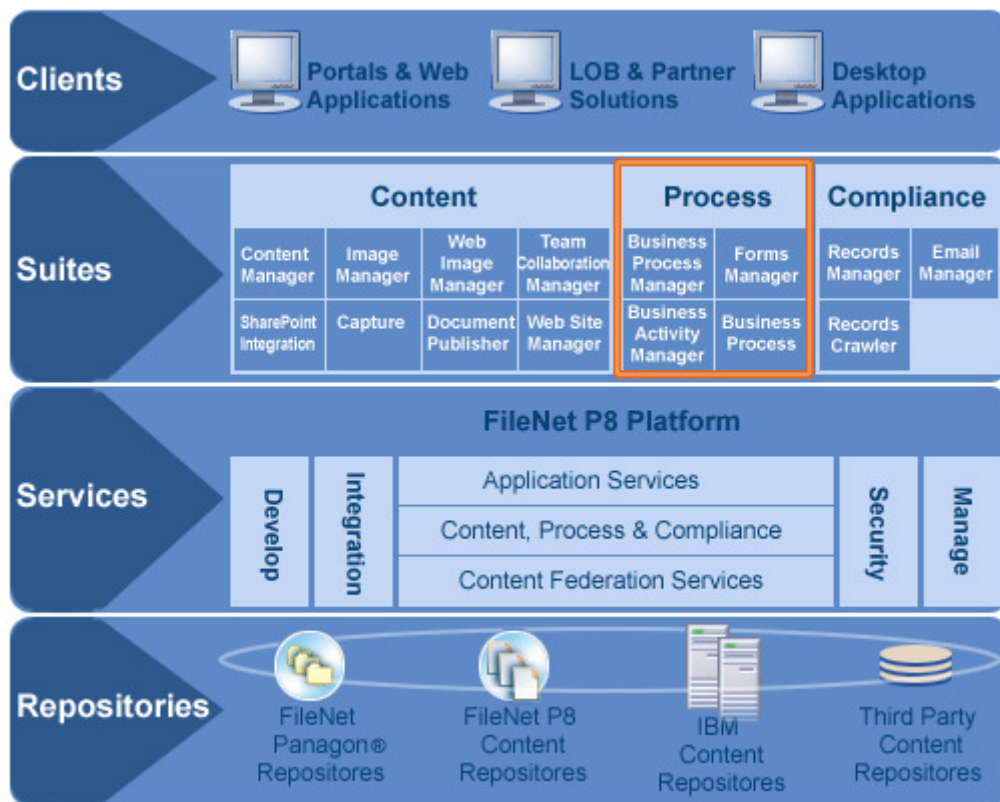
## Building the foundation for content-centric BPM

FileNet Business Process Manager is an ECM architectural platform and the foundation for the FileNet Content Manager, Business Process Manager, and Compliance Manager. The platform is a J2EE-based, open and enterprise-scalable set of shared services that

provides interoperability to a wide selection of database, Web server, portal, security, and storage environments.



At the core of the architecture are the process, content, and application engines. IBM ensures content-process integration because, as the following architectural figure shows, FileNet products share a common set of services.



### Content-centric process in action

Consider a customer-enrollment scenario where people must contact a call center. The call center employee opens a case or a file for the customer. The customer must follow up by completing and mailing or faxing a multi-page application (depending on the case type) and attach supporting documents. The documents and attachments must be tracked, reviewed, and indexed as they are received. The approval process suspends or resumes as new documents are needed or received. Throughout the process, the case might be escalated to a specialist or a supervisor because of exceptional conditions. The customer might be sent an automated letter or e-mail because of a condition or event.

## Active content adds value to BPM

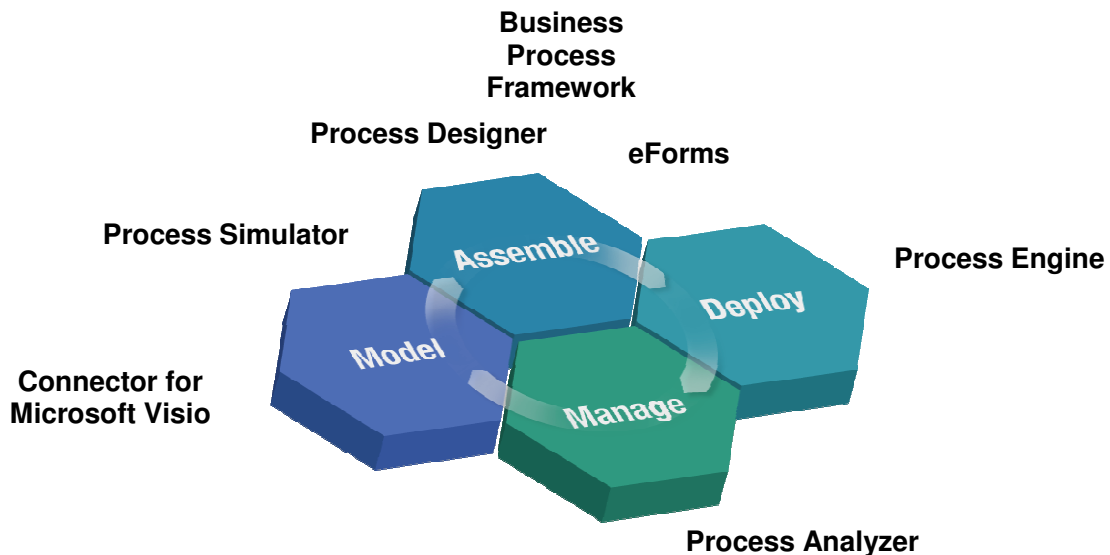
Taking the content-centric process scenario a step further, consider how changes in an electronic file are often events that should advance or trigger business processes. Example changes are the receipt of content, edits to content, and management approval of an electronic document, letter, or e-mail sent to a customer.

Technically speaking, these example changes to content change the metadata of the content. FileNet Business Process Manager can monitor or subscribe to the content metadata and trigger the appropriate processes when a change is detected. IBM refers to this event-trigger capability as *active content*. Active content makes FileNet unique.

## The BPM Lifecycle and FileNet Business Process Manager

Not simply a BPM solution, FileNet Business Process Manager is a content-centric set of technologies that works on top of the FileNet Business Process Manager platform. Both FileNet Process Manager and FileNet Content Manager are solidly based on the FileNet ECM platform and complement one another.

Furthermore, FileNet Business Process Manager is not just a process management and automation tool. It facilitates process monitoring and continuous process improvement.



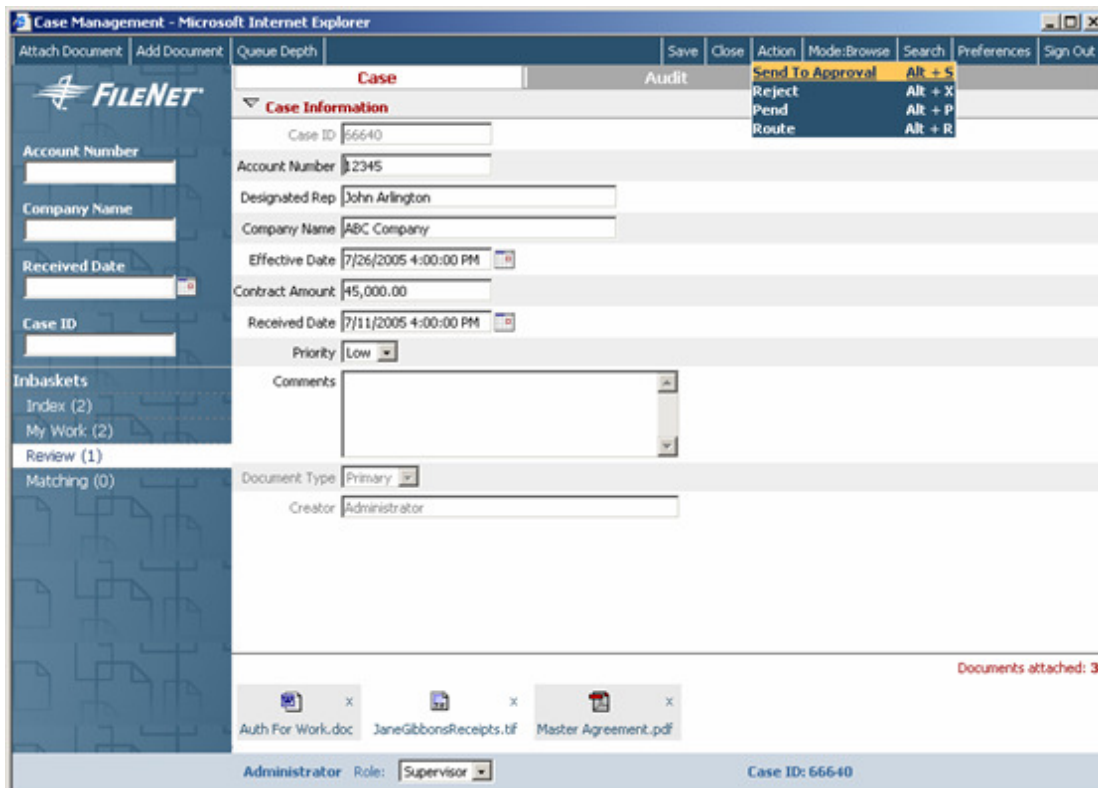
FileNet Business Process Manager includes the following functionality:

**Process Engine:** Provides a robust, highly functional and extremely scalable process-management architecture. The Process Engine manages the database tables and their associated transactions, and runs the deployed business processes. This powerful component has the proven scalability to handle millions of process tasks per hour.

**Content Engine:** Provides core services for managing all content (or objects), including BPM artifacts. The following core services are included:

- Distributed repository services (object stores)
- Content retrieval and distributed caching services
- Object-oriented, extensible metadata models
- Version management
- Object relationship management
- Security
- Server-side events and subscriptions
- Content classification framework
- XML content classification
- Content transformation to PDF and HTML
- Document lifecycle model
- Search services
- XML-based import and export
- Content administration

**Application Engine:** Provides both an out-of-the-box application (called Workplace™) and the application programming interfaces (APIs) that are hosted on a J2EE application server. The Application Engine is the presentation layer for both the process and content, and it protects user credentials passed between the Workplace and the Content Engine. In addition, the Application Engine hosts a comprehensive suite of user, administrative, and development tools.



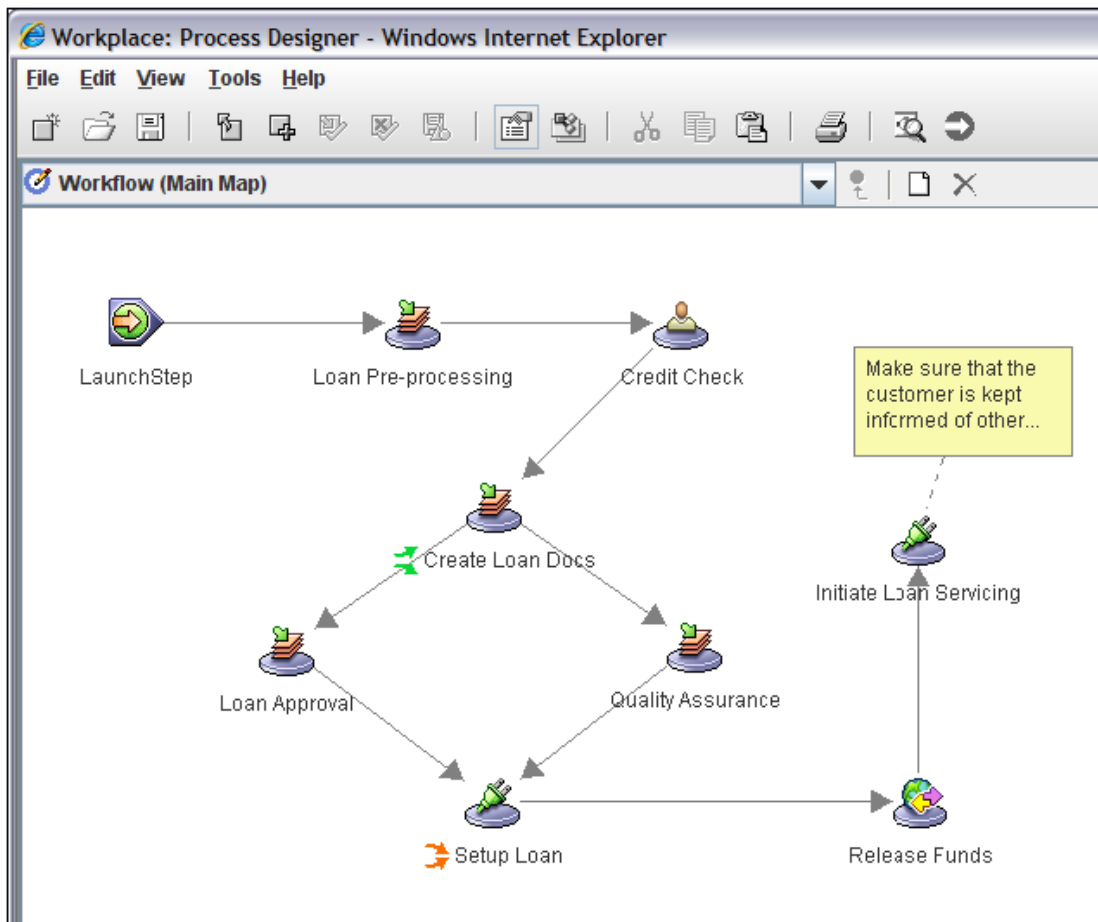
**Process Designer:** Provides an easy-to-use Web-based graphical design tool for defining processes. Unique to Process Designer is the ability to perform content manipulations from a process step and to reference data fields from content (for example, a customer ID or policy number).

**Extend the power of enterprise content management from the process step**

The Process Designer ensures that there are no gaps between business and IT. For example, the Process Designer contains process design palettes that promote reuse of process sub-maps and process components, which can be shared as corporate assets for multiple development teams.

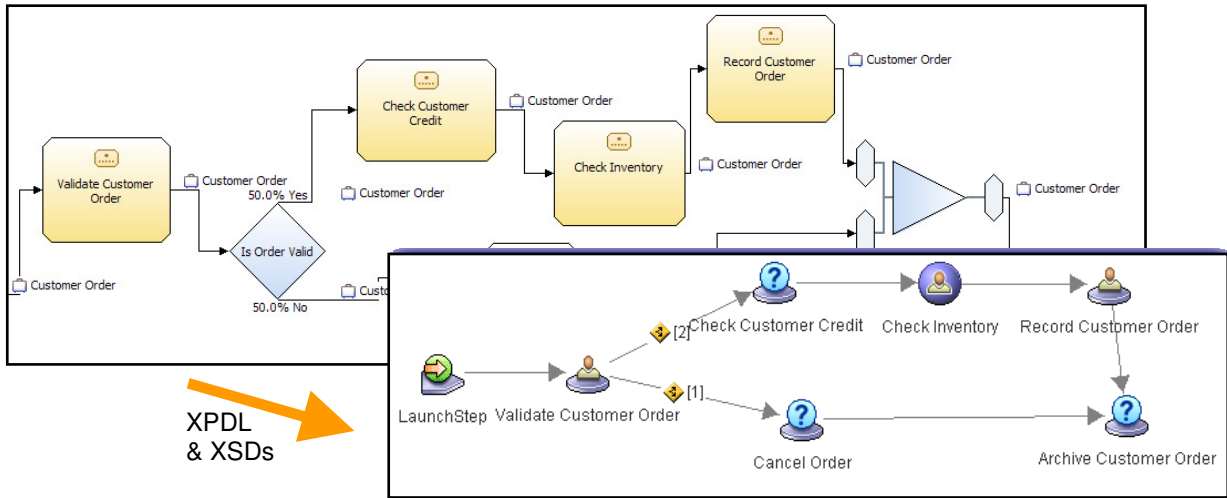
Using Process Designer, you can also import models in XPD and BPMN (Business Process Management Notation) format. You can import Microsoft Visio models using FileNet Connector for Microsoft Visio.

The Process Designer and other FileNet Business Process Manager components are thin-client based and maintained on the server. There is no need for client maintenance; therefore, ongoing costs are minimal.

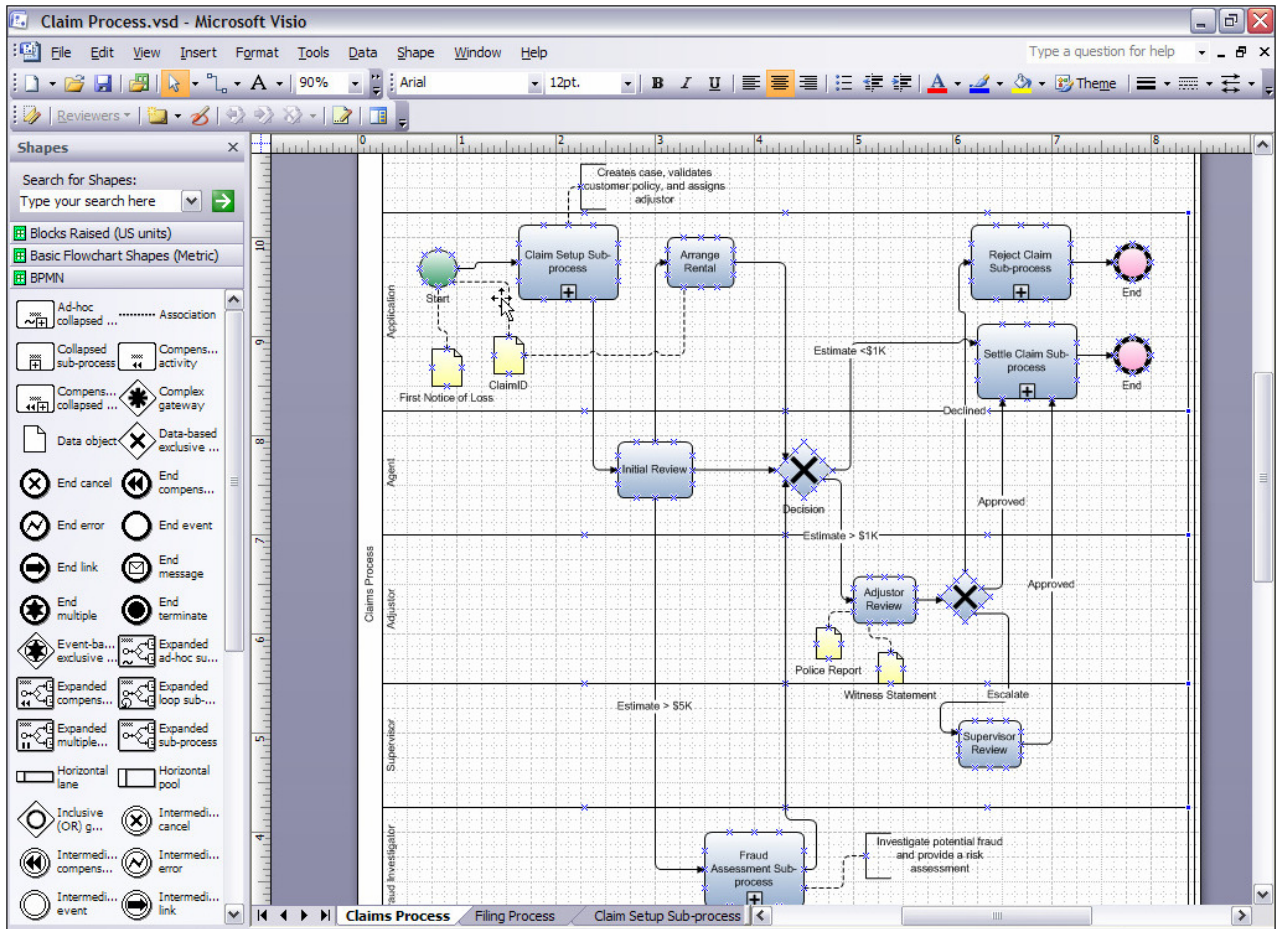




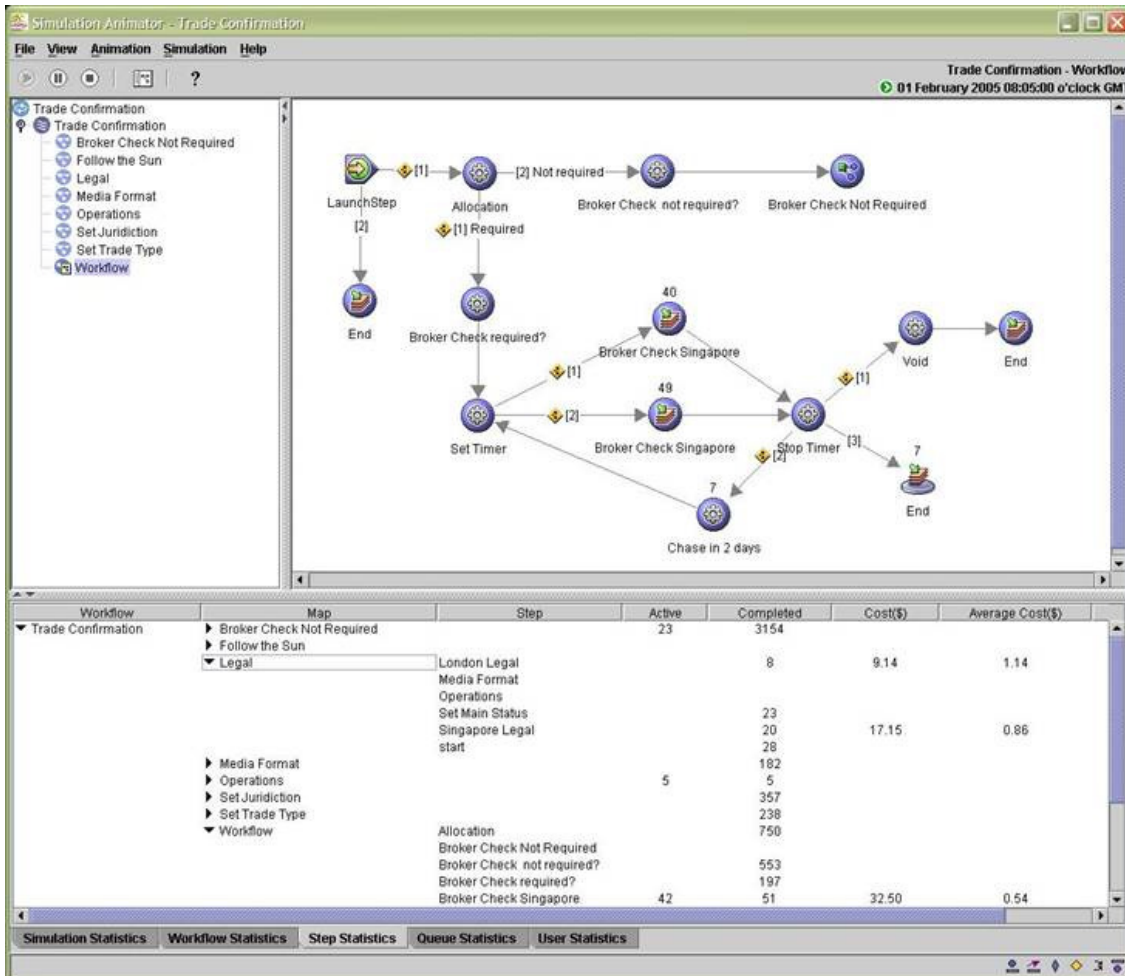
**WebSphere Business Modeler:** For organizations that define a broad set of business processes, some of which are content-centric (targeted to run on FileNet Business Process Manager) and others that are integration-centric (targeted to run on WebSphere Process Server), you can use WebSphere Business Modeler as the single tool for defining processes. Then you can implement process model definitions from WebSphere Business Modeler in Business Process Designer.



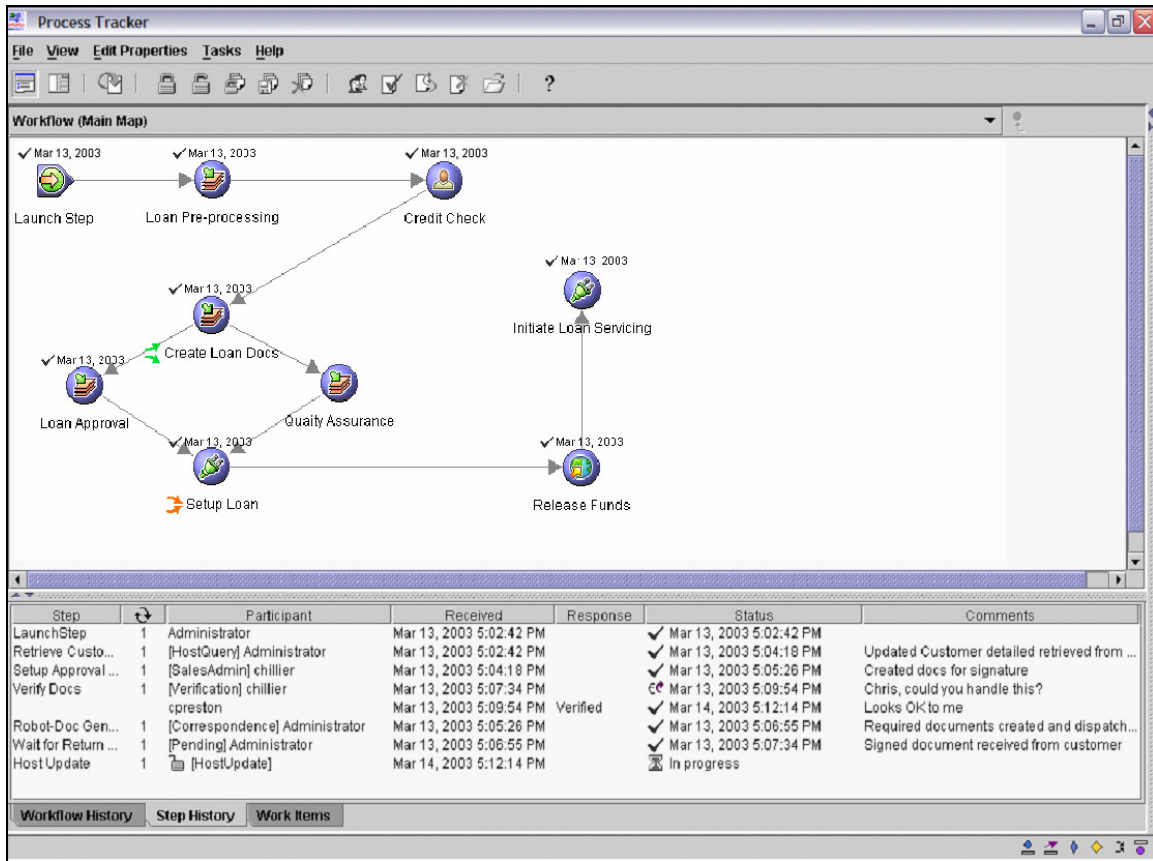
**Connector for Microsoft Visio:** Provides a BPMN stencil and BPMN template for Visio, and a mapping facility from Visio to Process Designer. As a business analyst, you can model processes based on BPMN process modeling standard in Visio, and then import them into FileNet Process Designer in XPD. The mapping tool is general enough so that any Visio process diagram, even if it is not based on BPMN, can be mapped to XPD after you define a mapping.



**Process Simulator:** Simulates the performance of business processes before deployment by incorporating actual or projected data. The simulation capability fully leverages the Process Analyzer by using previously captured data in subsequent simulation scenarios and publishing simulated performance data to the data cubes in exactly the same manner as a fully deployed production process.

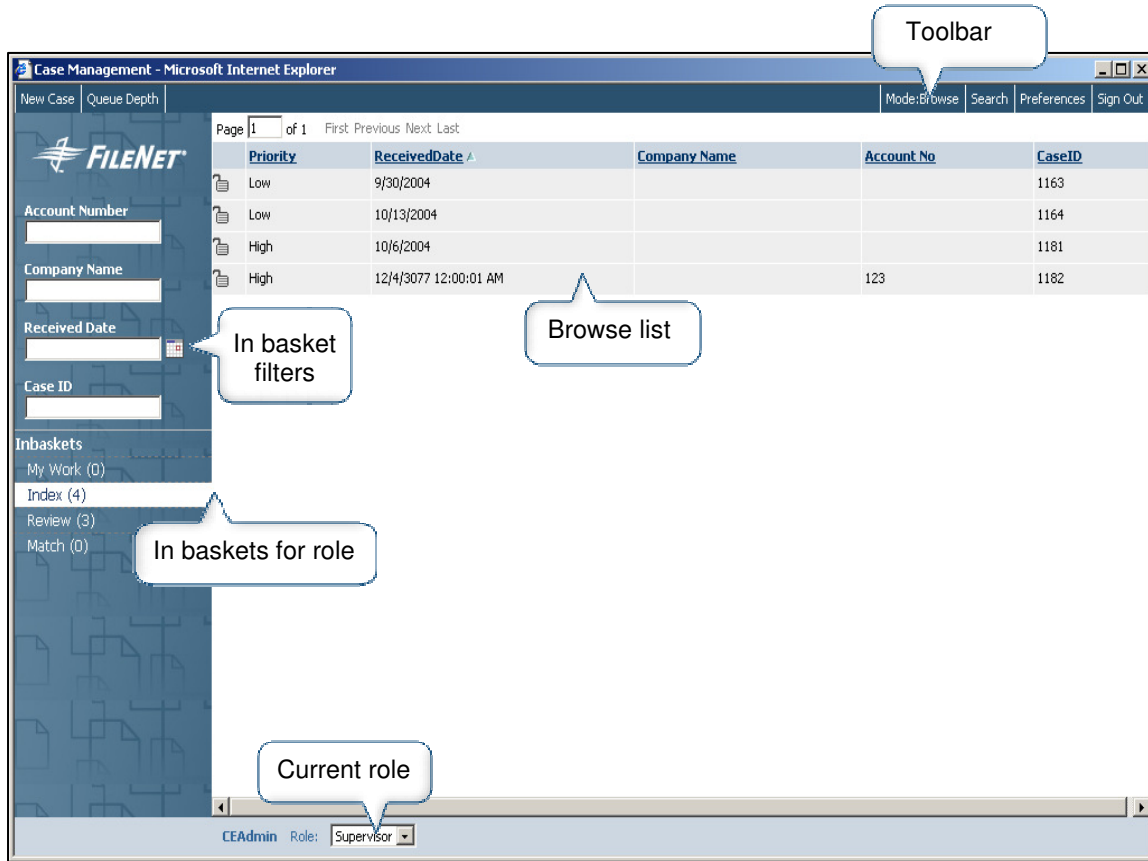


**Process Tracker:** An out-of-the-box application monitors and tracks in-flight (active) processes, Process Tracker renders the event data for a given process instance with a graphical view of the process definition, giving you an interactive view of the process status and history for the most complete picture of the state of the work and how it got there.



**Process Analyzer:** Features OLAP-based analytics and out-of-the-box reports. Process Analyzer tracks process data and displays it in real time. Process data is maintained in online analytical processing (OLAP) cubes so that you can quickly customize and drill down for further detail. You can also export OLAP cube data so that you can use it with business-intelligence tools to establish a foundation for improving business processes.

**Business Process Framework (BPF):** Provides a highly configurable user interface framework so that you can rapidly develop and deploy BPM applications by configuring without coding. BPF features include sophisticated case management, a case management user interface, and skills-based work routing. Ideal for case-based applications, BPF supports complex task management and provides a role-based, customized, and personalized user experience.



**eForms:** Enables the easy creation of intuitive user interfaces for online or offline user participation in FileNet processes. eForms maintain a high-fidelity paper-form look and feel but can also perform calculations, field validations, and field pre-population. The WYSIWYG forms designer allows you to easily create and change forms. An eForms API is also available.

**FileNet Business Activity Monitor (BAM):** Provides real-time business activity monitoring functionality for FileNet Business Process Manager, and other enterprise business applications (such as ERP and CRM). BAM features a highly configurable Web-based dashboard framework with visual metrics and alerts tied to various events coming in from the Process Analyzer database and other sources. You can define business rules so that certain event patterns or threshold crossings can result in visual or messaging alerts, invoke a Web service, or launch a business process back into FileNet Business Process Manager.

**Component Integrator:** Provides a mechanism for easily interacting with components (such as Java classes) from a workflow. For example, a step in a loan-processing workflow can call a Java component to request services, such as a credit score, from a third-party vendor. You then use the Process Designer to invoke that Java class without programming. You can also invoke services that are registered in WebSphere Service Registry and Repository, including services that run on WebSphere Process Server.

**Leverage industry expertise and client-proven patterns through IBM ECM ValueNet partners**

## **Accelerating time to value**

### **Overview**

Every client has unique needs and requirements as does every vertical market. Furthermore, many clients deploy solutions to achieve or facilitate regulatory compliance. In response to these disparate needs, FileNet created the IBM ECM ValueNet Business Partner Program. The partners combine their industry-specific expertise with the FileNet Business Process Manager open platform to create BPM and ECM solutions that are validated by an ECM Channel Development team.

### **Example industry solution from an IBM ECM ValueNet partner**

TriTek Solutions produces five different vertical solutions that run on FileNet Business Process Manager. One of these solutions, Trans@ction eXpress, is used in property and casualty claims. Claims are routed to specialists based on the task and claim type, the claim status, and special requirements. These different claim classes automatically call up specific user interfaces or eForms as well as query the proper backend legacy systems so that the claims staff has the proper information.

## Partner Solutions for FileNet Business Process Manager

The current Worldwide ECM Partner Solutions Handbook lists 202 different solutions from 114 partners. These out-of-the-box solutions enable you to leverage customer-proven patterns to see results more quickly. The following list shows you some of these solutions and the vertical markets that these solutions serve:

- Enterprise Credit Risk Management
- State Archives Content
- Pension Administration
- SOX Compliance
- Real-time Forensic and Content Control
- Retirement
- Land Records
- Non-profits
- Office of the Attorney General
- Medical Credentialing
- Justice Agencies
- Health and Human Services
- Housing
- Child Support
- Fraud Monitoring
- Workers Compensation
- Consumer Complaints
- Inmate Tracking
- Disability Claims



### An open platform for customization and integration

Because FileNet Business Process Manager is a standards-based, open architecture, you can develop your own applications and architectures with FileNet APIs, including those that rely on a J2EE Web Container (JavaServer Pages and Java Servlets), Enterprise JavaBeans™ (EJB) Container or J2SE stand-alone Java applications. These are the same APIs that ECM ValueNet Partners use to build applications. Furthermore, FileNet integrates with enterprise business applications and the content they contain through Microsoft .NET, SOAP, XML, and Enterprise Application Integration (EAI).

You can also call Web services from a process point and expose processes as Web services. Process Designer includes systems steps that allow this functionality.



Invoke Step



Receive Step

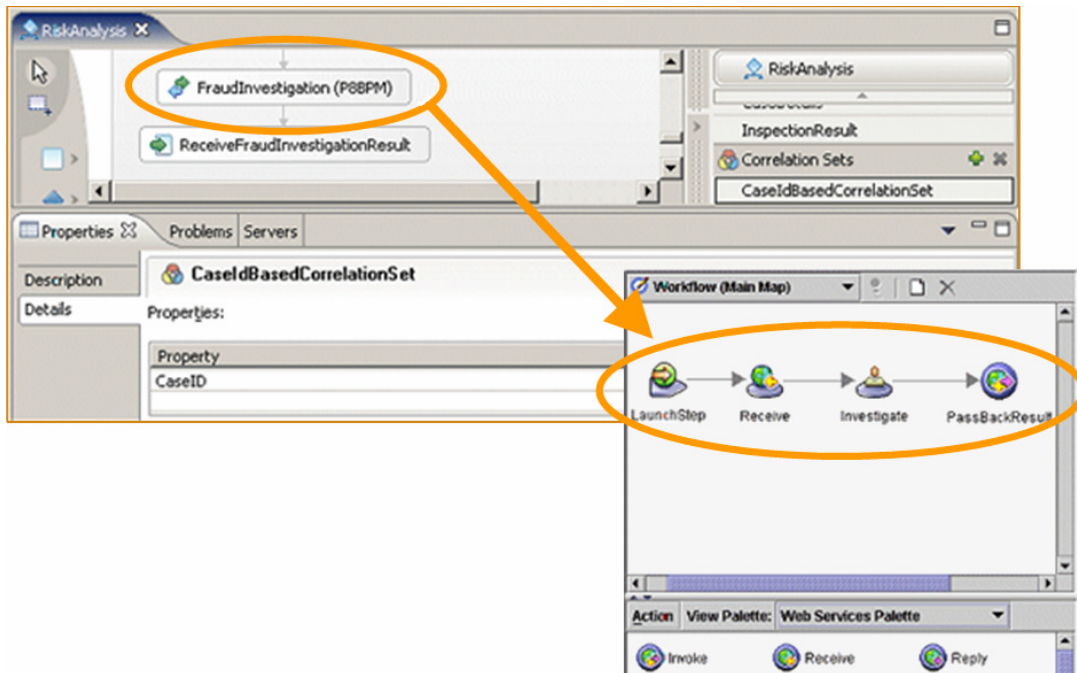


Reply Step

The popularity of Web services as an integration mechanism ensures platform independence in your enterprise and hastens time to value.

## Integration points in the IBM BPM portfolio

Choosing to enable BPM using FileNet products and WebSphere products is typically not an either/or proposition in the enterprise. Most clients have enterprise-wide processes that touch the full spectrum of applications, the enterprise information systems, and multiple content repositories in a single iteration or instance.



BPM products are complementary, with various combinations of the products offering value to address unique requirements. IBM has integrated and will continue to integrate and enhance its products so that you can leverage and extend your current investments in the entire IBM BPM portfolio using the following integration points.

### Engines

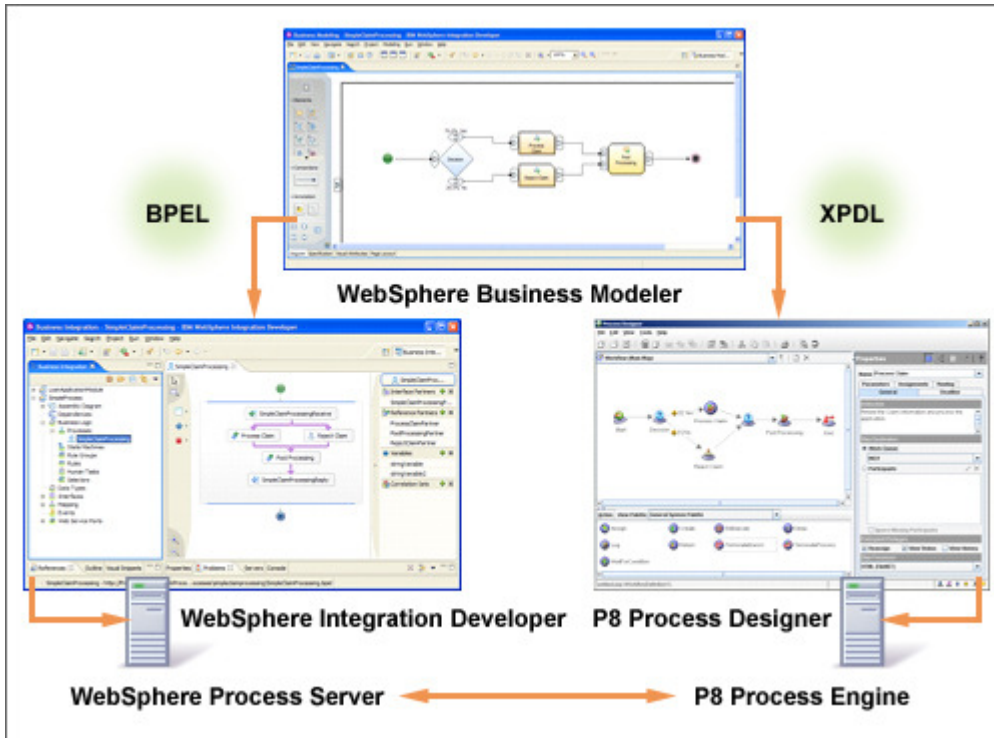
Thanks to Web services, engines are capable of bi-directional support: A process in WebSphere Process Server can invoke a process in FileNet Business Process Manager and vice versa.

### Modeling

You can export models created in WebSphere Business Modeler in XPD format to FileNet Process Designer. Inside the FileNet Process Designer, you can add content-centric operations to your process design. Or, you might want to use WebSphere Business Modeler to model new FileNet Business Process Manager processes that invoke WebSphere Process Server processes so that you can document and simulate those processes in the WebSphere environment.



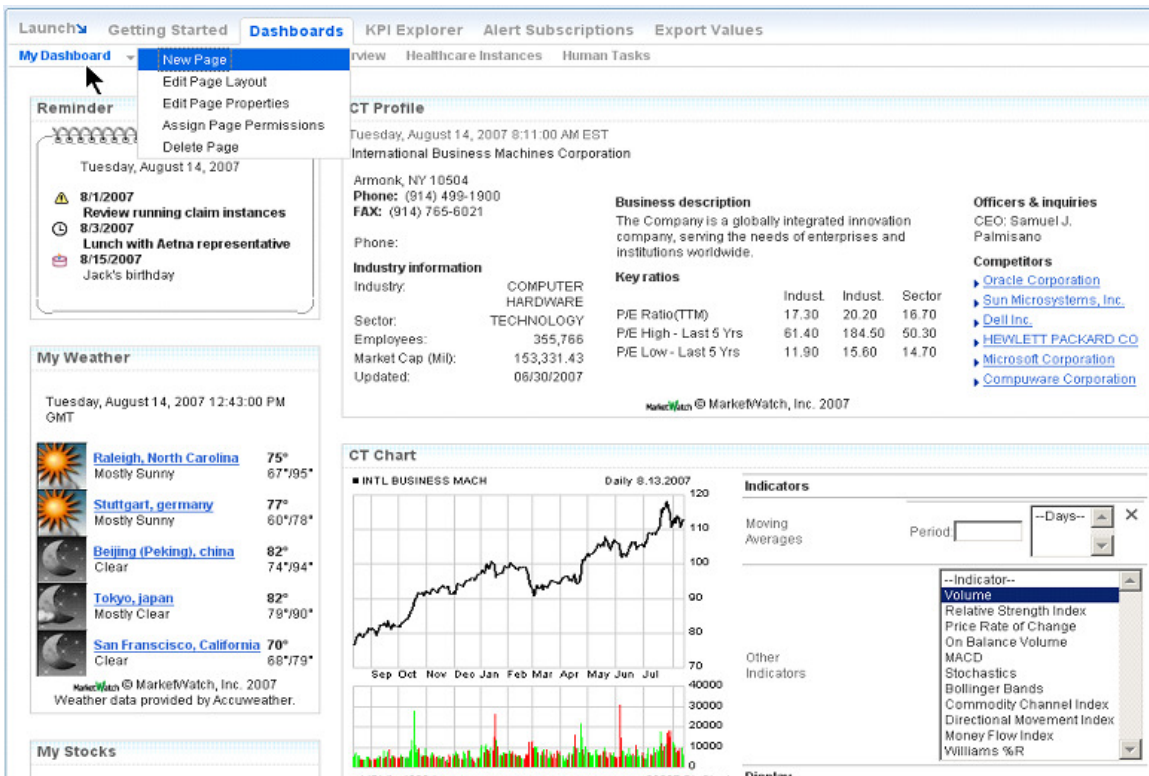
As well, given the strong integration between WebSphere Business Modeler and WebSphere Business Monitor, you might choose to use WebSphere Business Modeler as the default modeling tool for BAM solutions, even if the runtime environment is FileNet Business Process Manager.



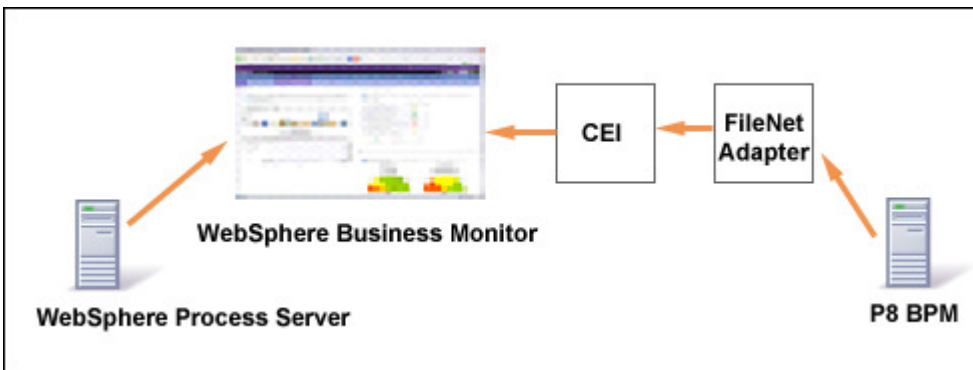
## Monitoring

WebSphere Business Monitor provides real-time business activity monitoring (BAM) that helps you attain operational and strategic insight on the business. It features customizable Web-based and portal-based dashboard frameworks with visual metrics and alerts tied to various events coming in from the Process Engine as well as other sources. You can define and customize key performance indicators (KPIs) on the fly.

In addition to sending alerts in specific situations, WebSphere Business Monitor can initiate action by sending events or calling a Web service. A robust set of tools enables business analysts to define the high-level KPIs and business metrics, while developers use the advanced set of integrated function to implement and test monitoring models.

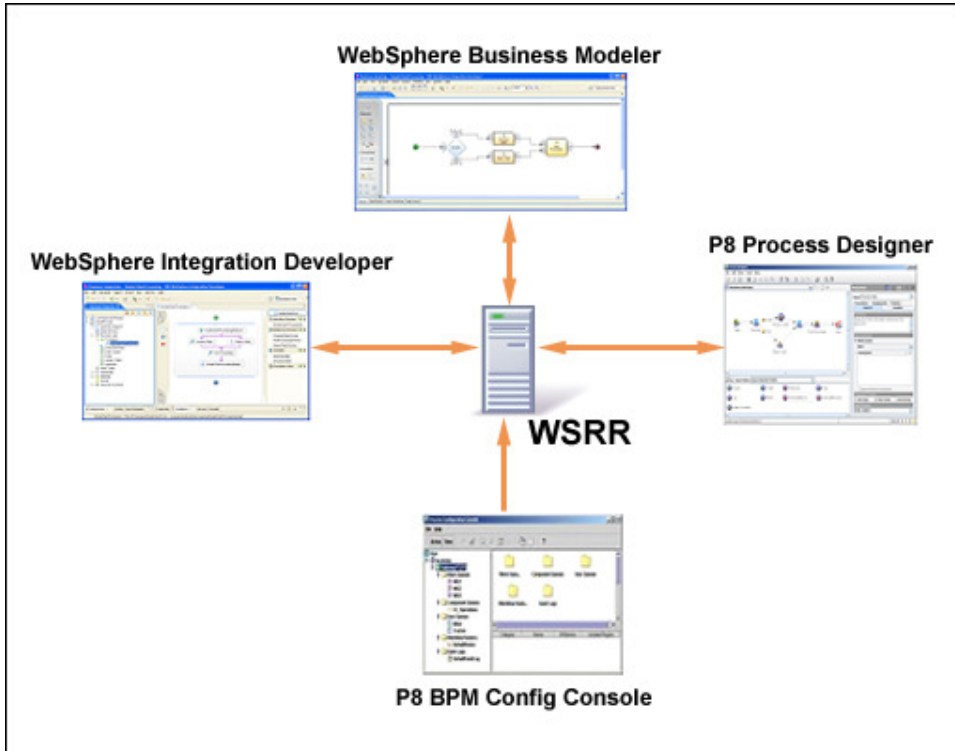


Use the Monitor Toolkit (installed on WebSphere Integration Developer or Rational Application Developer) to define the monitoring model, and then deploy the model to the monitoring server to monitor the FileNet BPM processes. The FileNet Adapter is a FileNet BPM component that transforms native FileNet events for use by monitor. At run time, the Common Base Event (CBE) Adapter reads events from the Process Engine event log, transforms these events into CBE format, and, using the CEI, sends the CBE event to WebSphere Business Monitor. Then you use the dashboard in WebSphere Business Monitor to view the analytical results.



## Repository

You can use WebSphere Service Registry and Repository as a common registry for both FileNet processes and WebSphere processes. Processes published in WebSphere Service Registry and Repository by WebSphere Process Server are accessible from FileNet Process Designer. FileNet BPM processes published to WebSphere Service Registry and Repository are accessible from WebSphere Process Server. While the process is running, the FileNet Component Manager can invoke the Web services discovered in the WebSphere Service Registry and Repository registries using a Web services Invoke step.



## Summary

FileNet Business Process Manager enhances productivity and decision making for customers who have content-centric BPM requirements. Its active content capability and robust BPM offering makes it unique among ECM vendors. With the open, standards-based architecture of FileNet Business Process Manager and multiple integration points to WebSphere, you can leverage the strengths of the IBM BPM portfolio and preserve your current BPM investments.

# Enabling BPM and BAM with WebSphere Business Monitor

- Customize your dashboard experience and KPIs, without IT involvement
- Consume business events from IBM run times, packaged applications, and beyond
- Develop and test iteratively, synchronized with SCA assets
- Scale your monitor solution to suit your needs
- Leverage monitor solution data for business reports
- Enable access through federated user registries

## Introduction

The fundamental value of business activity monitoring (BAM) is to bring real-time insight into how well a business is running, in a timely manner. To do this, BAM enables business leaders need to understand the status of various components of the business, where it is trending, and where there are opportunities for improvement, so that they can take action. To take timely action, business leaders need to be alerted to operational information on unforeseen events that affect their customers or the bottom line. They also need to be made aware of long-term trends that identify strategic targets and factor in opportunities and competitive challenges.

**Managers need  
up-to-the-minute  
insight on key  
operational metrics**

In addition, managers need up-to-the-minute insight on key operational metrics so that they can determine whether processes are on schedule, workload is being distributed properly, and costs are not exceeding expectations. Business analysts benefit from having snapshots of real-time data that they can factor back into model simulations, in the continuous cycle of process improvement.

WebSphere Business Monitor provides powerful capabilities to define BAM solutions and evolves the place of monitoring in a broader BPM context:

- Empowering the line of business
- Extending the reach of BAM
- Accelerating time to value
- Lowering the cost of ownership

## Empowering the line of business

### Overview

An essential component of BPM is to enable the line of business (LOB) to play an active role in defining how business metrics should be measured. The scope of this role includes being able to define what the high-level business metrics are (with WebSphere Business Modeler), view operational and strategic business activity through dashboards, be alerted

to key situations, and be able to leverage real-time data to improve business process definitions (also working with WebSphere Business Modeler).

WebSphere Business Monitor raises the bar of empowerment by enabling you to customize your dashboard experience without requiring IT to re-implement, test, and re-deploy the monitor model. You can now modify what is displayed, add new key performance indicators (KPIs) or change the thresholds on existing ones, and determine which alerts you want to be alerted to, without discussing changes with a developer or portal administrator. This customization not only provides flexibility to the business, but relaxes the need for IT to meticulously define all KPIs up front.

**Customize your dashboards  
without requiring IT to  
re-implement, test, and  
re-deploy the monitor model**

The unit test environment in WebSphere Business Monitor includes an AJAX-based Web dashboard that provides a faster user experience because only necessary portions of the dashboard page must be reloaded as new events are received.

The screenshot displays the WebSphere Business Monitor interface. At the top, there is a navigation bar with 'WebSphere Business Monitor' and a 'Welcome' message. Below this are tabs for 'Getting Started', 'Dashboards', and 'Utilities'. A 'Manage Instances' section is visible. The main content area is divided into two sections: 'Human Tasks' and 'Diagrams'.

**Human Tasks**

| Task Name        | Owner      | Status               | Escalated | Work Duration  |
|------------------|------------|----------------------|-----------|----------------|
| Patient checkin  | mjohnson   | Ready to be Assigned | false     | 22 m, 10 s     |
| Patient checkout | svalter    | Complete             | false     | 1 h, 15 m, 5 s |
| Update record    | ewayne     | Ready to be Assigned | false     | 20 m, 5 s      |
| File insurance   | sjasinski  | Working              | false     | 45 m, 45 s     |
| Verify record    | Unassigned | On hold              | true      | 25 m, 10 s     |

**Diagrams**

The diagram, titled 'FFT\_MC', illustrates a business process flow. It starts with an 'FFT Record' input leading to a 'Case No Added' task. This is followed by 'Obtain Customer Info' and 'Funding Transactions Prepared'. A decision diamond 'Confirm All Payoff Info Present' branches into two paths: '50.0% Yes' leading to 'Fund Transactions Processed', and '50.0% No' leading to 'Update Case As Needed'. Both paths merge and lead to 'Fund Transactions Processed'. The diagram uses various icons and arrows to represent tasks, decisions, and data flow.

You now have the choice of using the default dashboard provided by IT or building one yourself. For example, you might want to build a new dashboard with a unique view configuration, accessible only by a particular group of users. You can give this dashboard a new name, select which views to include and arrange them in a unique layout, and select which views will cooperate with one another (that is, indicate how a change in one view affects another view).

## Subscribing to business alerts

WebSphere Business Monitor can alert you to a particular situation (for example, a KPI has exceeded a threshold) by sending a notification to an e-mail ID, pager, or PDA. The monitor model developer can predefine specific alerts that will take effect when the monitor model is deployed to production. However, there might be times when you want to alter the alerts you receive.

For example, the Order Fulfillment manager is alerted by e-mail when the average time taken to fill orders exceeds a specific threshold. However, he has decided that he now wants to be alerted by pager when a Gold customer order exceeds a specific threshold. Using the Alerts Subscription utility in WebSphere Business Monitor, business users can subscribe to alerts of interest and specify the notification mechanism, without involving IT.

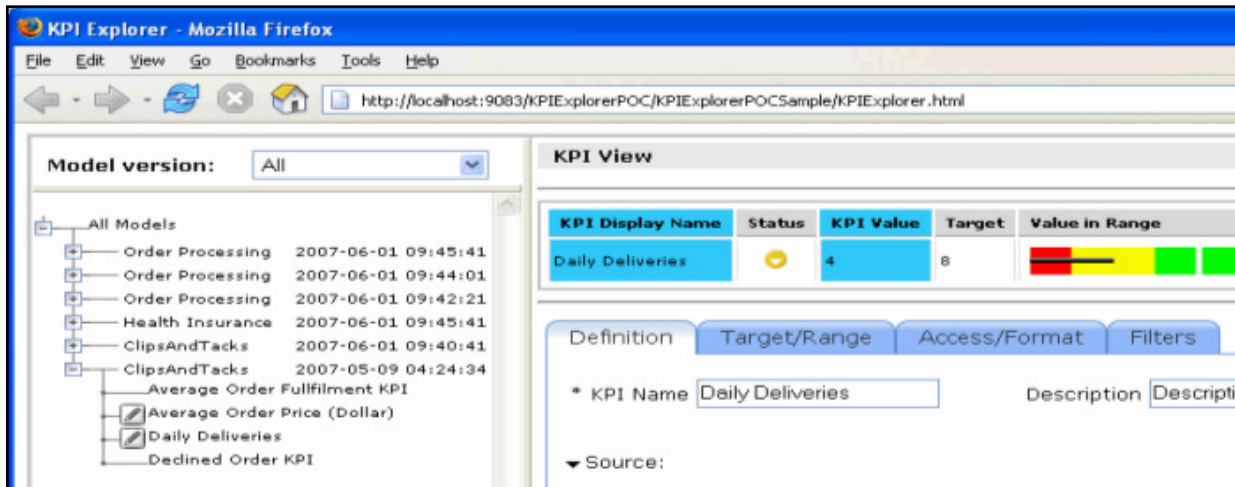
The screenshot shows the 'Alert Subscriptions' utility in WebSphere Business Monitor. The 'Alert Subscriptions' tab is highlighted with an orange circle. Below it is a table of alert subscriptions with columns for Alert Name, Description, Category, Create Date, and notification methods (Dashboard Alert, Cell Phone, Email, Pager). Three orange arrows point from the table to images of a PDA, a computer monitor, and a pager.

| Alert Name        | Description  | Category | Create Date                 | Dashboard Alert                     | Cell Phone                          | Email                               | Pager                               |
|-------------------|--|----------|-----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Denied Claim      | Alerts the user when a claim has been denied.                  | Claims   | Mon 2007-06-18 09:55:00.000 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Overdue Claim     | Alerts the user when a claim is overdue.                       | Claims   | Mon 2007-06-18 09:55:25.917 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| Unsubmitted Claim | Alerts the user when a claim is still waiting to be submitted. | Claims   | Mon 2007-06-18 09:19:08.251 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

## Personalizing and creating KPIs on the fly

An underlying theme of BAM is discovery: analyzing data to gain business insight into what might not be known or realized. With the KPI Manager utility, you can select one or more KPIs and modify the display mode (Table view, Gauge view, and so on) and the

visual characteristics (color range spectrums, sizes, layout format, and so on), and then save this personal configuration so that it is applied to the most current deployed model.



As the business environment changes, KPI thresholds often need to change too. The KPI viewer enables you to modify KPI thresholds so that you can move your success targets and evaluate various what-if scenarios without asking IT to update and redeploy the monitor model.

For example, a business leader deems that the Order Fulfillment Duration threshold is too high. She lowers the threshold value and assesses how well the business would perform given the same incoming events. If this real-time simulation shows that the threshold has been exceeded, she can then ask business analysts to determine how the process can be improved given this new goal.

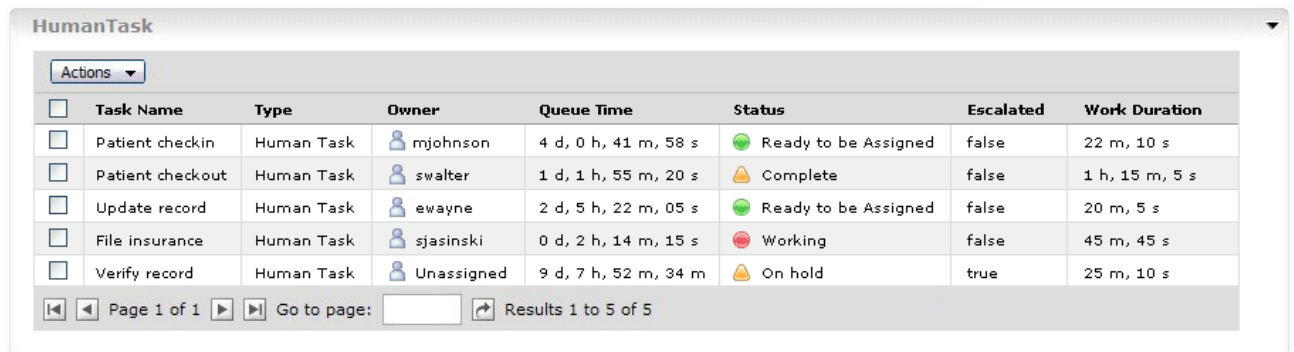
**Evaluate various what-if scenarios without asking IT to update and redeploy**

As you assess the state of the business using the dashboard, you might realize that a new, yet-to-be-defined KPI would be helpful, one that correlates data in a new way. With KPI Manager, users with KPI administrator status can define, copy, and update KPIs. New KPIs can be based on correlating data from existing KPIs.

As an alternative to receiving business data through events to define KPIs, you can use XML Path (XPath) user-defined functions to proactively retrieve data. WebSphere Business Monitor supports user-defined XPath functions in XPath expressions as well as in built-in XPath functions. Developers can make libraries of user-defined functions available. For example, a user-defined XPath function can be implemented as a Web service call to retrieve the customer name based on a known customer ID and can involve updating some records in a database.

## Monitor and manage human tasks

Because human tasks often take longer to perform than automated tasks, business leaders need to understand the role and effectiveness of people in the processes. WebSphere Business Monitor provides a set of configurable views to display human task instances to better assess workloads, identify bottlenecks, and redirect workload to prevent backlogs. Human tasks can be BPEL tasks orchestrated by WebSphere Process Server, or stand-alone human tasks in the monitored system.



The screenshot shows a web-based interface titled "HumanTask". It features a table with columns for Task Name, Type, Owner, Queue Time, Status, Escalated, and Work Duration. There are five rows of task data. Below the table, there are navigation controls including "Page 1 of 1", "Go to page:", and "Results 1 to 5 of 5".

| <input type="checkbox"/> | Task Name        | Type       | Owner      | Queue Time           | Status               | Escalated | Work Duration  |
|--------------------------|------------------|------------|------------|----------------------|----------------------|-----------|----------------|
| <input type="checkbox"/> | Patient checkin  | Human Task | mjohnson   | 4 d, 0 h, 41 m, 58 s | Ready to be Assigned | false     | 22 m, 10 s     |
| <input type="checkbox"/> | Patient checkout | Human Task | swalter    | 1 d, 1 h, 55 m, 20 s | Complete             | false     | 1 h, 15 m, 5 s |
| <input type="checkbox"/> | Update record    | Human Task | ewayne     | 2 d, 5 h, 22 m, 05 s | Ready to be Assigned | false     | 20 m, 5 s      |
| <input type="checkbox"/> | File insurance   | Human Task | sjasinski  | 0 d, 2 h, 14 m, 15 s | Working              | false     | 45 m, 45 s     |
| <input type="checkbox"/> | Verify record    | Human Task | Unassigned | 9 d, 7 h, 52 m, 34 m | On hold              | true      | 25 m, 10 s     |

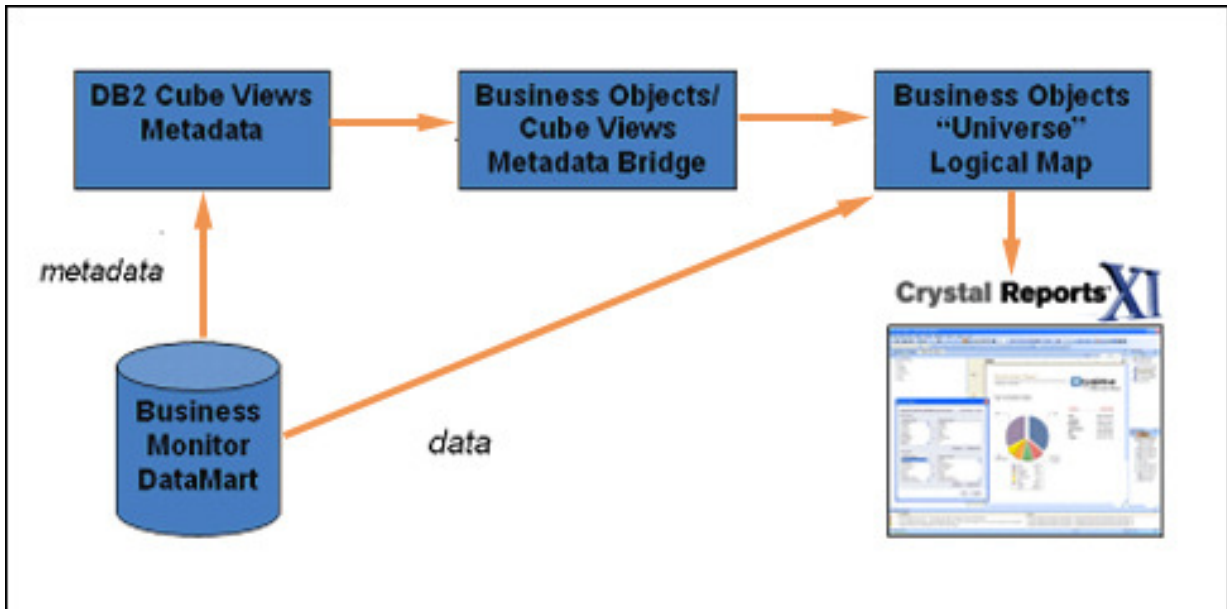
Using the human task editor, you can view all WebSphere Process Server human-task events for different models and their properties. You can also choose which properties to show or hide, as well as filter and define sortable properties. The business leader can also assign, claim, release, or transfer tasks, depending on the accessibility that they have been granted.

## Leverage monitoring data for reporting

While WebSphere Business Monitor gathers and display critical business data, business leaders often want to take snapshots of business performance, in the form of business reports, for delivery to a broad audience that is already familiar with business intelligence reporting. WebSphere Business Monitor uses DB2 Cube Views™ to map the metadata of the underlying tables.

Third-party reporting tools (for example, Cognos 8 Business Intelligence and Business Objects Crystal Reports) can use the open architecture of WebSphere Business Monitor. Business objects, for example, provide a data-mapping layer and metadata bridge to logically map the business objects data access abstraction layer to DB2 Cube Views. No additional software is required to enable WebSphere Business Monitor and Crystal Reports to work together. You simply need to change the configuration.





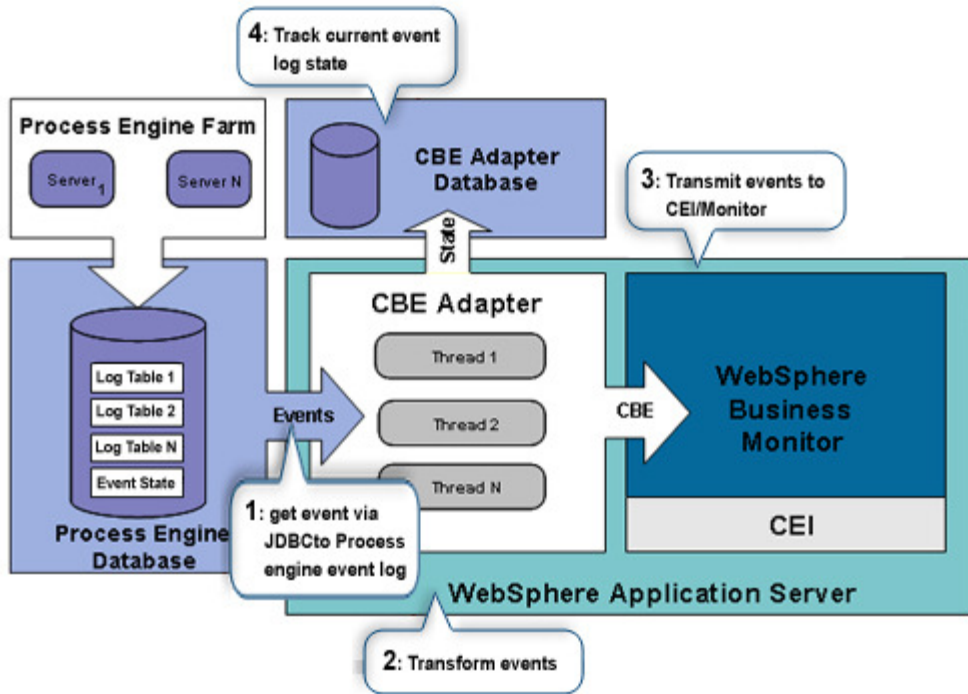
## Extending the reach of BAM

### Overview

To effectively monitor the business, a monitoring solution must be able to use events from all relevant event-emitting applications, processes, or data-driven solutions. Instrumenting a heterogeneous monitoring environment can be daunting without a standardized event infrastructure and the tools to gather events. In addition to monitoring Common Base Events (CBEs) from WebSphere Process Server and WebSphere Enterprise Service Bus, WebSphere Business Monitor facilitates BAM implementations by providing first-class support for WebSphere MQ Workflow events, FileNet Business Process Manager events, and XSD-based events. Plus, you can leverage WebSphere Adapters to get event information from Enterprise Information Systems (EISs), such as SAP, and even create user-defined functions to pull data from other systems.

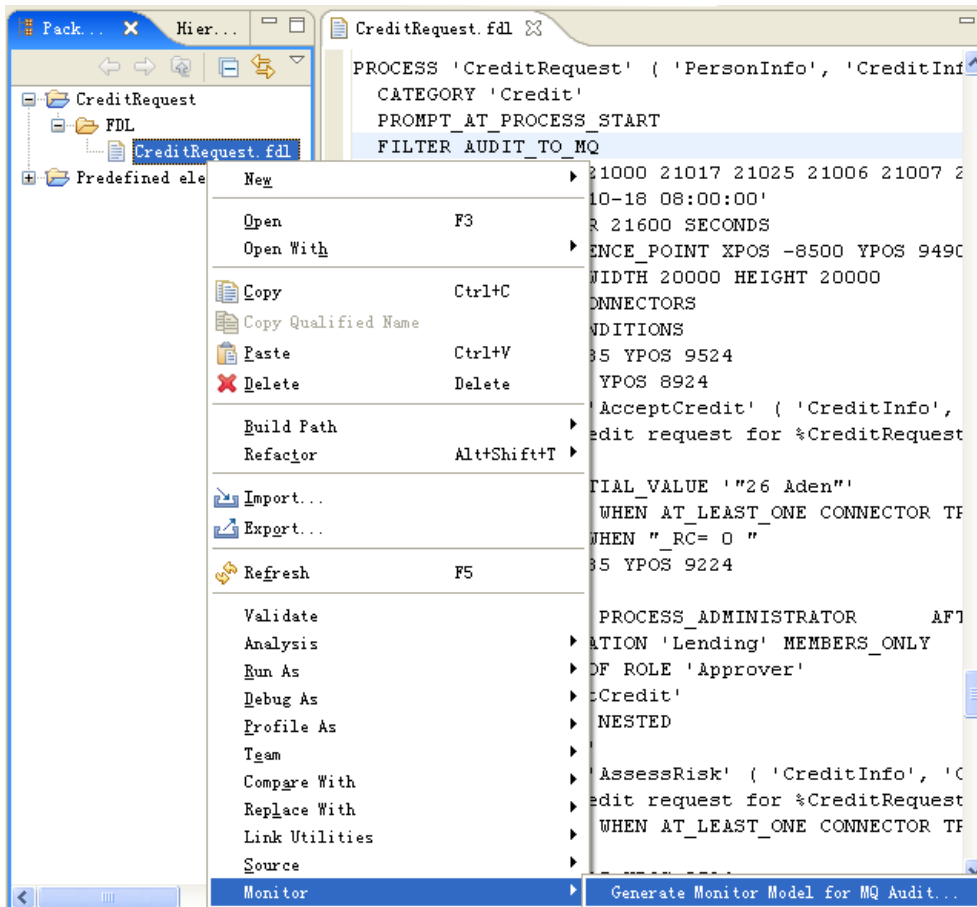
### Monitoring FileNet processes

Because FileNet Business Process Manager is the key environment for content-centric BPM solutions, it is important that WebSphere Business Monitor provide first-class support to monitor FileNet-based processes. FileNet provides a CBE adapter that retrieves FileNet Process Engine events, transforms those events to CBEs, and transmits them to the WebSphere Business Monitor server. An out-of-the-box monitor model tailored to monitor FileNet Business Process Manager processes provides a workflow monitoring context, a work item monitoring context, and several predefined measures (processing time, workflow maps, queues, and so on). Many native FileNet Business Process Manager event definitions (for workflows, work items, and activities) are also available for use in WebSphere Integration Developer and WebSphere Business Monitor.



## Monitoring MQ Workflow processes and MQ-based applications

Although IBM highlights WebSphere Process Server as a strategic server technology for running process flows, many WebSphere MQ Workflow clients want to begin monitoring their process environments before migrating to WebSphere Process Server. In response, WebSphere Business Monitor provides first-class support for WebSphere MQ Workflow events.



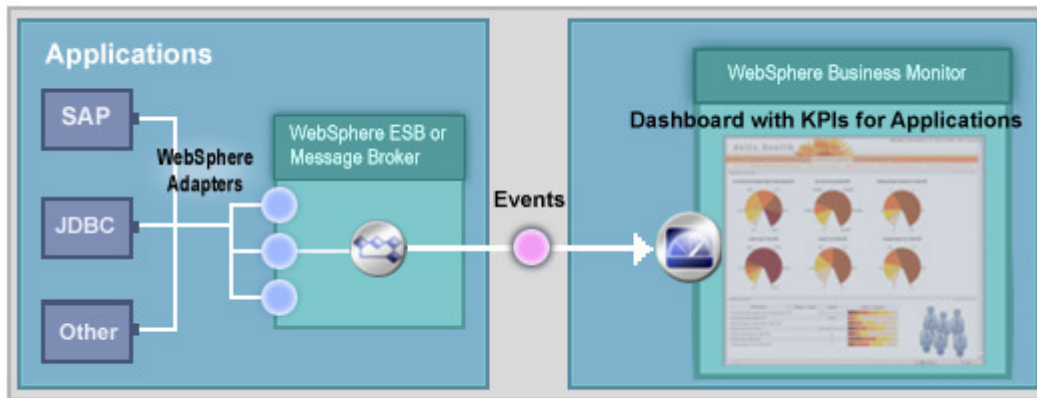
The FDL to monitor model utility, part of the Monitor Development Toolkit, enables you to import an existing Flow Definition Language (FDL) file so that you can generate event definitions and a monitor model. As well, WebSphere MQ Workflow provides a support pack that helps the runtime environment perform the following tasks:

1. Emit the container data from the audit trail.
2. Convert the audit trail data to CBEs using the WebSphere MQ Workflow Event Converter.
3. Publish the CBEs to the Common Event Infrastructure (CEI).

In addition, you can enable WebSphere Business Monitor to receive events from WebSphere MQ applications. The key here is to configure a WebSphere MQ link between the WebSphere MQ queue manager and the CEI that routes events to WebSphere Business Monitor. WebSphere MQ applications can then send XML-based CBEs to the CEI server queue.

## Monitoring business applications with WebSphere Adapters

To extend the reach of BAM, WebSphere Adapters give you the ability to leverage events that come from various EISs and applications, including Oracle E-Business Suite, Siebel Business Applications, mySAP.com, and JD Edwards OneWorld.



To configure the use of adapter-based events with WebSphere Business Monitor:

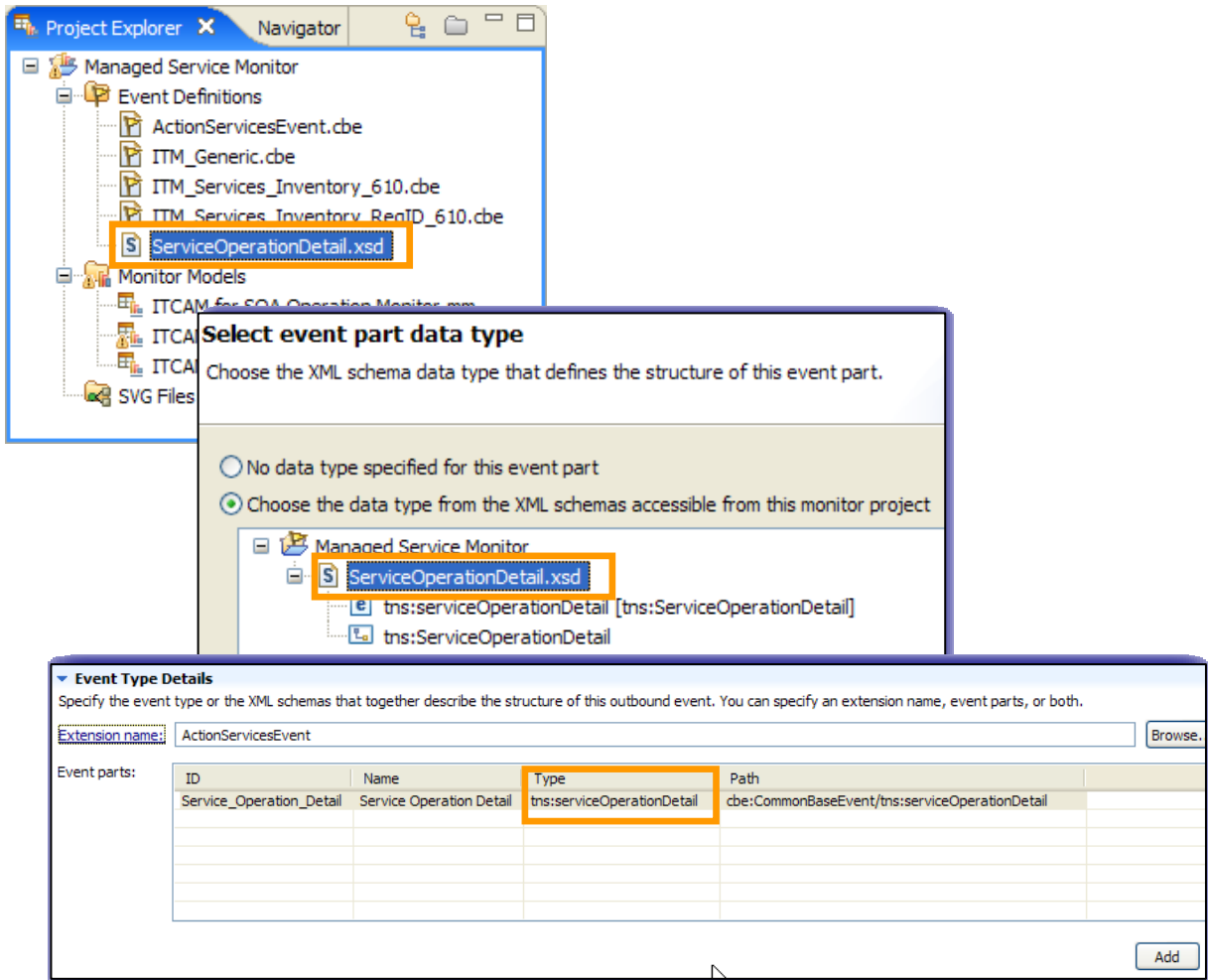
1. Install the WebSphere adapter.
2. Create a mediation flow and import the adapter interfaces.
3. Construct the mediation flow to send one or more events to the service using the mediation primitives.
4. Construct the monitor model that defines how to consume the emitted events and defines the business measures to be calculated to facilitate the business monitoring. As a starting point, generate event definitions from mediation flow primitives.
5. To prepare for deployment to the runtime environment, export the adapter application, the mediation flow application, and the monitor model.

WebSphere Business Monitor includes SAP and JDBC samples to illustrate how you use adapters to deliver events to WebSphere Business Monitor. If your applications do not have a ready-made adapter, the samples show you how to write a custom event emitter.

### Leverage XSD-based events

WebSphere Business Monitor stores events in the XML-based CBE file format, a standard for events among different distributed applications. This standard ensures that the data elements that comprise these events are consistent. In addition, you can define XSD-based user and system events in WebSphere Business Monitor, which means that business objects (such as invoices and purchase orders) can be expressed as XSDs rather than as primitive data.

XSD events can be made up of fragments of structures that exist for other purposes, for example, business objects for passing data through an application. You can also refer to standard XSD event definitions from the development-time XML catalog, which is a storage repository for commonly used schemas and other definitions.



XSD event definitions are beside CBE definitions in the Event Definitions group in Project Explorer.

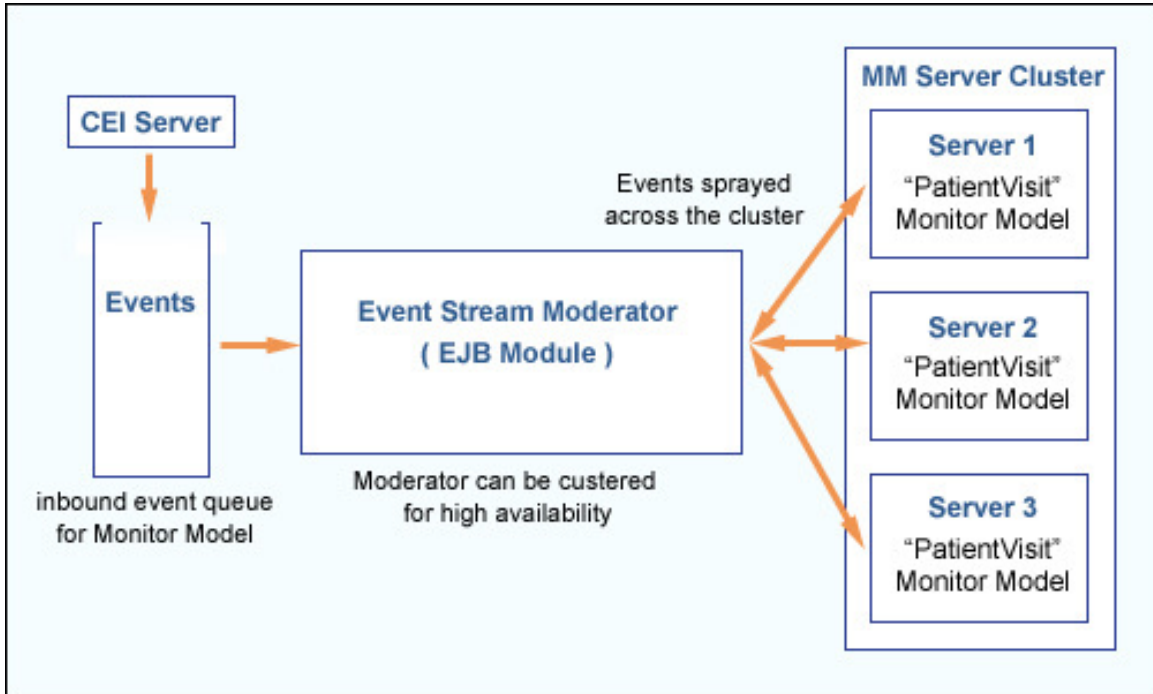
## Robust event handling

Given the heterogeneity and size of many enterprise IT infrastructures, a business monitoring solution must provide high-quality service characteristics. The integrity of the monitoring solution needs to ensure that reported business results are based on complete, timely, and accurate events. For these reasons, WebSphere Business Monitor processes events quickly, manages failover, isolates bad events, and ensures that monitoring contexts receive events in the correct order.

**The high-availability manager ensures that no events are lost**

To address cases where a tremendously large number of events need to be processed for monitoring and business metrics need to be updated frequently, WebSphere Business Monitor enables you to cluster event processing for scalability. You can deploy a monitor model on multiple WebSphere Business Monitor servers for workload balancing. If one

server goes down or is unavailable, the high-availability manager ensures that no events are lost.



When a process emits events, it is often critical that those events be processed in the correct order. If they are not, incorrect business metrics are calculated. But you cannot always be assured that events are being received in the correct order if the events are emitted asynchronously. For example, consider the case where an auditing monitor solution identifies internal requests that have not been approved on an order. If WebSphere Business Monitor receives an On order event before the Approved event, then the monitor might raise a false alert in the dashboard or compile incorrect data for a report.

However, using WebSphere Business Monitor, you can batch related events for processing, rather than processing them in the order they were received. When all of the related events are received, they are processed in the correct order, even if they arrived out of order.

## Accelerating time to value

### Overview

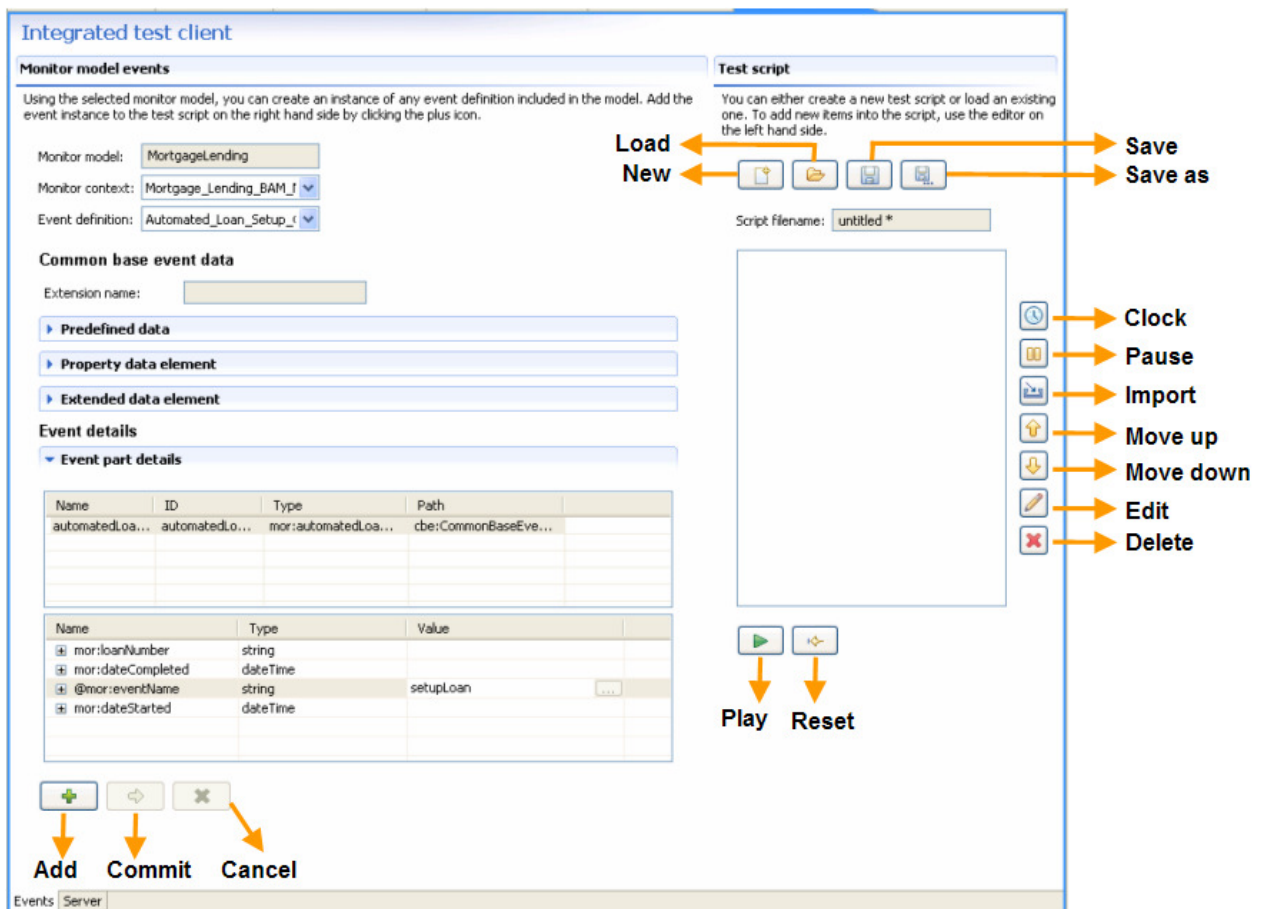
The development of robust BAM solutions offers two competing challenges: correlating data from a broad heterogeneous environment, and being able to develop a rich monitor model for that environment quickly. The process of pulling in the correct data structures, having some examples or templates to start with, and testing iteratively can be complex

and time-consuming without the right tools. The Monitor Development Toolkit enables a developer to perform the following tasks:

- Work with business analysts by leveraging a monitoring specification defined in WebSphere Business Modeler as a starting point.
- Reuse existing generic and industry-specific assets.
- Leverage implementations from WebSphere Integration Developer.
- Easily test a monitor model without deploying to a production environment.

## Simplified iterative development

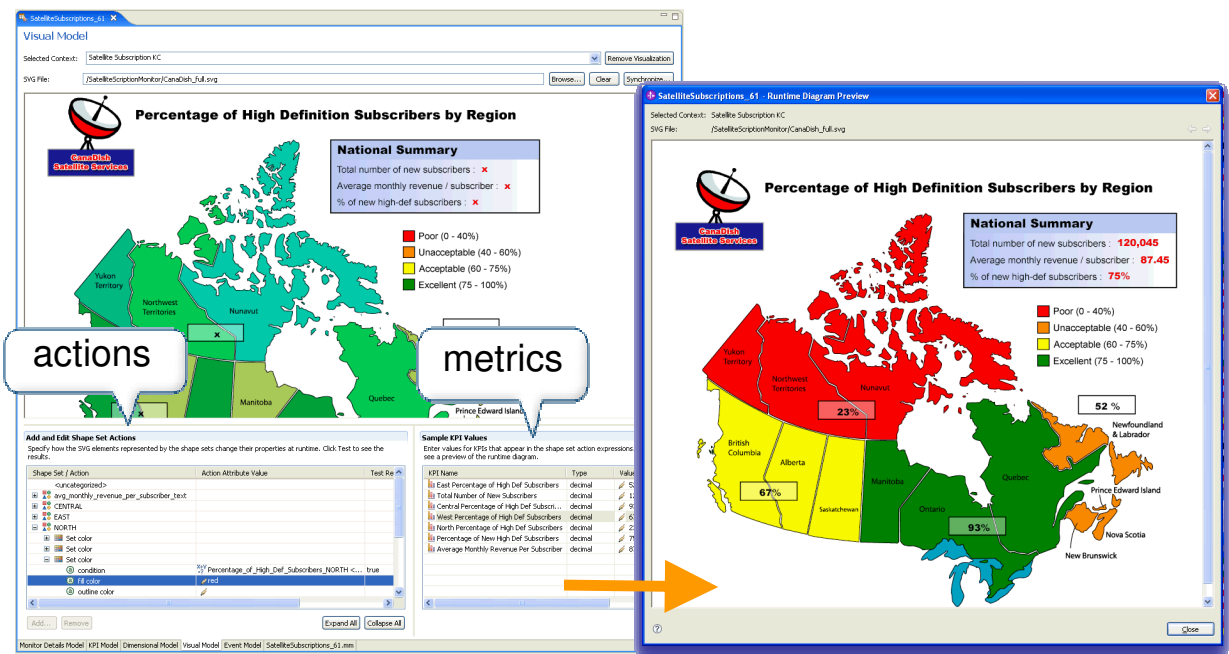
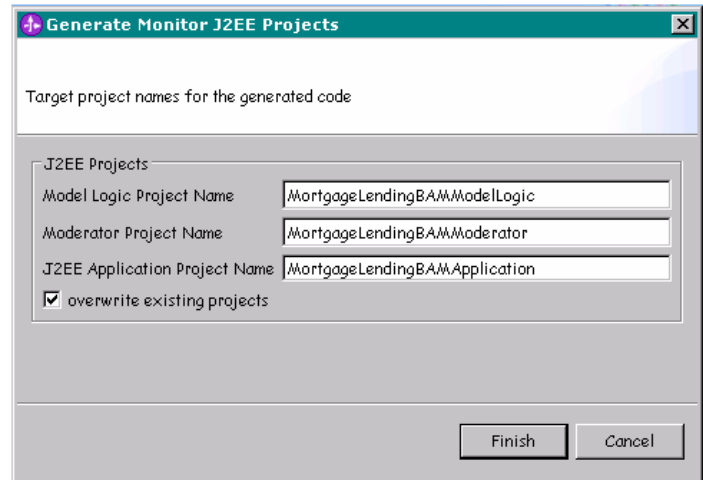
Effective model development is often approached iteratively: develop, test, enhance, test, and so on. WebSphere Business Monitor includes an integrated test environment that allows you to easily assess your progress in defining monitoring models. The Integrated Test Client (ITC) is a graphical interface that simplifies the emission of test events, so you do not have to instrument a live production system for testing purposes. The developer writes reusable test scripts that express both the events to be emitted and the order in which to emit them. The ITC provides the flexibility to define different combinations of test scripts to reflect various monitoring scenarios.



With WebSphere Business Monitor, the steps required to deploy a monitor model are streamlined so that you can complete the deployment dialog boxes that will automatically create the database tables, deploy the generated EAR file to the monitor server, and start the monitoring solution simply by right-clicking the monitor model.

You can use these same steps for production-level deployments, although the solution administrator retains the option to perform the steps manually for a more-controlled deployment. However, with WebSphere Business Monitor, the number of manual steps has been reduced and simplified.

As well, WebSphere Business Monitor simplifies the testing of Scalable Vector Graphics (SVG) diagrams so that you do not need to iteratively define the model, deploy it to the test server, emit test events, and finally observe the behavior of the SVG diagram. Now, you can add actions to the shape sets directly, specify test data, and generate and render a static diagram all in the development environment—no deployment or event emission is required.

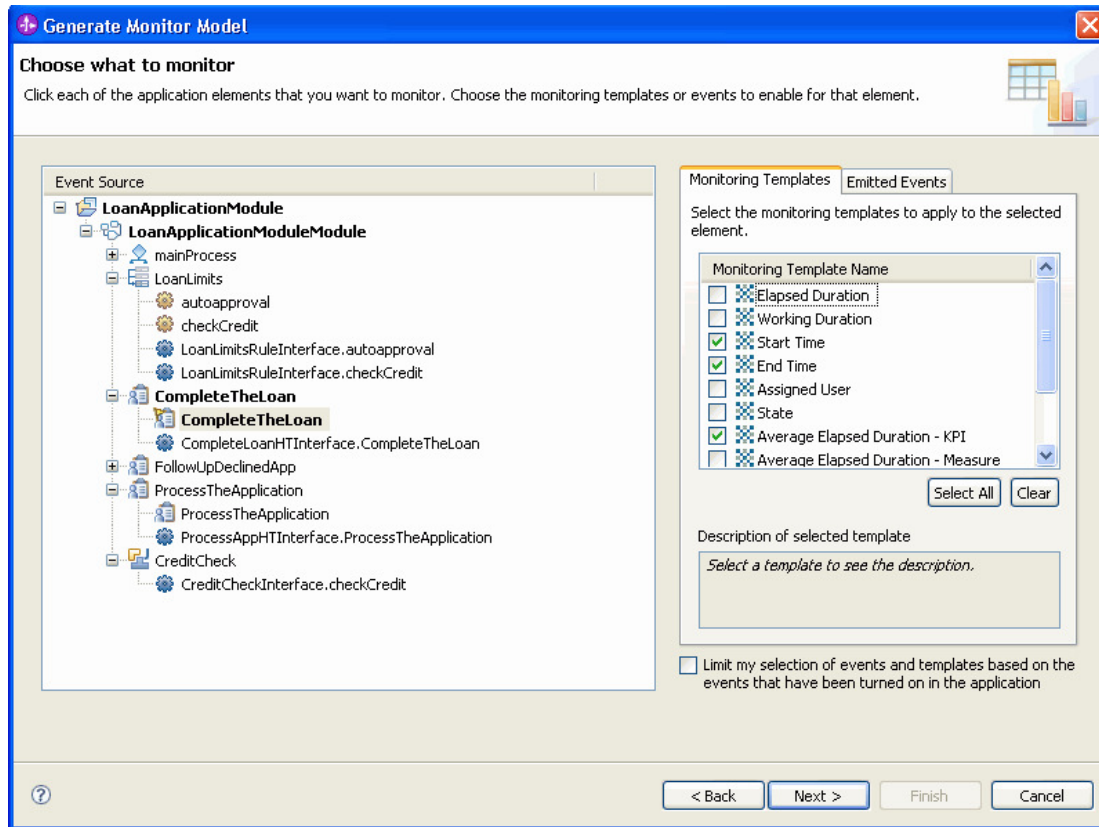


## Predefined templates and assets

WebSphere Business Monitor includes several predefined templates that support the generation of monitor constructs in models from several applications and components,



such as BPEL, ESB events, MQ Workflow events, FileNet processes, Service Component Architecture (SCA), and human tasks.



The SOA Business Catalog ([www.ibm.com/soa/soabusinesscatalog](http://www.ibm.com/soa/soabusinesscatalog)) is a comprehensive, online resource for clients to find ready-made monitoring models and predefined business measures supplied by IBM and IBM Business Partners that have been validated for enablement on IBM SOA products. The catalog holds thousands of assets, including adapters, Web services, process models, and plug-ins that are regularly updated to keep pace with business, technical, and regulatory changes and continually help you build your SOA solutions. Third parties (for example, IBM Business Partners) can register licensed assets in the catalog. The catalog provides an asset overview and details on where to get the asset and accompanying documentation.

You can search the catalog in many ways, including by using the following criteria:

- SOA entry points (people, process, information)
- Industry (such as banking, insurance, automotive, and retail)
- SOA lifecycle phase (model, assemble, deploy, manage)
- IBM product



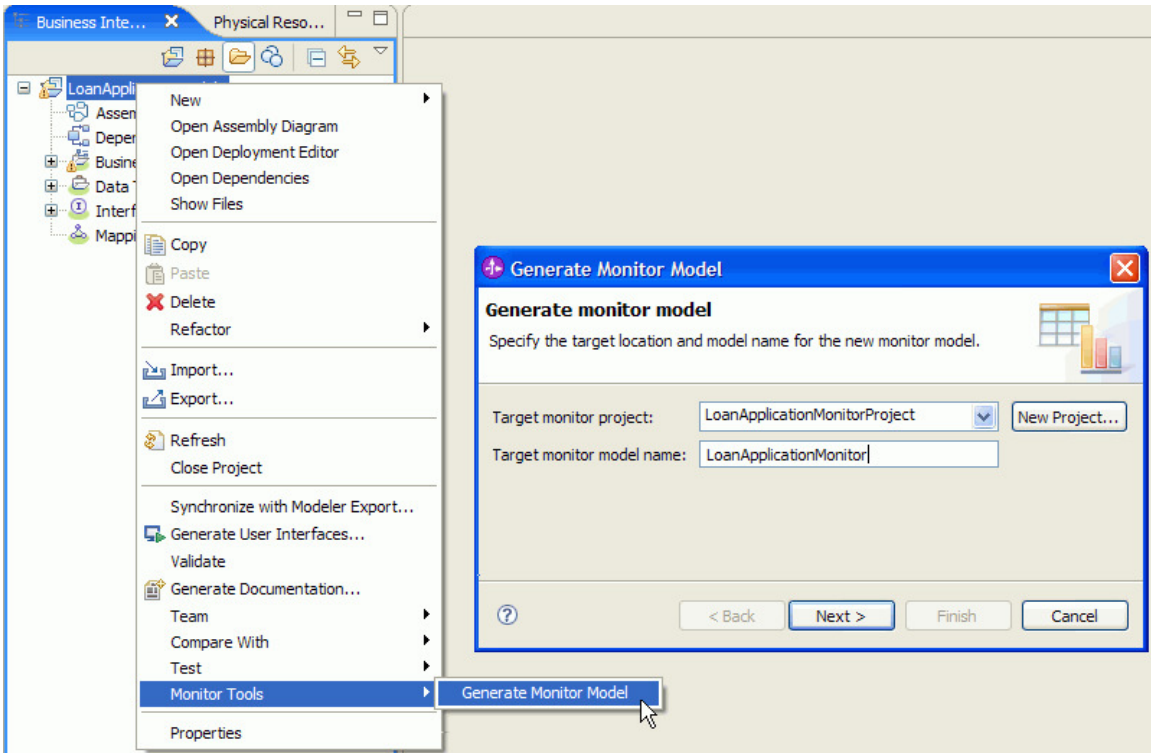
The assets that IBM provides are based on a long history of developing domain expertise. For example, there are monitoring models for the banking, healthcare, and retail industries, such as the monitoring model for the mortgage lending process.

## Synchronization with WebSphere Integration Developer

To quickly leverage SCA modules from WebSphere Integration Developer and define monitor models, WebSphere Business Monitor provides the Generate Monitor Model wizard, which introspects an SCA module to generate a stand-alone monitor model that is based on a predefined template for that type of SCA module (BPEL process, human task, mediation, and so on). The generated model can then be modified.

You might generate the first monitor model from an application simply as a starting point. Additional monitoring elements can be added as the solution grows. Or perhaps there was an oversight to include some monitoring elements in the originally generated model, or there are ongoing changes made to a model by a team of developers. In any case, you maintain the flexibility to add other monitoring elements iteratively, which allow both the application and the corresponding monitoring solution to co-evolve. The integrated tools enable you to keep the two code bases (runtime code and monitor model) in sync, without requiring you to manually reconcile existing and updated monitor models.

**Keep the two code bases (runtime code and monitor model) in sync**



Changes to the names of WebSphere Integration Developer artifacts (for example, modules, components, interfaces, namespaces, and business objects) are applied to the monitor model through live refactoring. Other changes can be reconciled through synchronization facilities, to add or remove event sources, interface operation parameters, and so on.

The synchronization dialog groups the application changes into three categories: **added** elements, **removed** elements, and **changed** elements.

A checkbox will be placed under the table allowing the user to hide the parent tree elements to flatten the change trees.

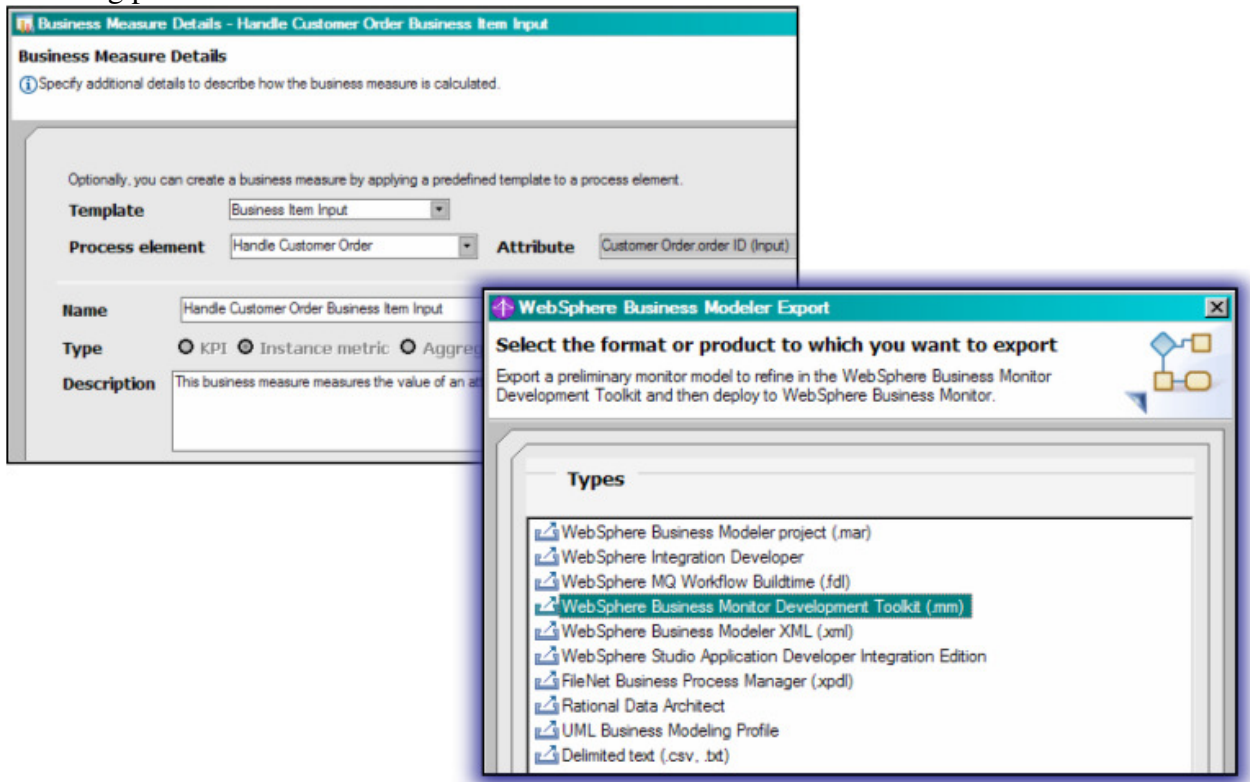
The built-in Eclipse help button will open the help side-bar directly on the dialog to offer immediate user assistance.

Choose the resulting action to take by selecting different options in the third column. For example, when a monitored event source is deleted, the user can choose to also delete the monitoring elements, or simply to disconnect the monitoring elements from the application.

| Application change                   | Affected monitor elements     | Resulting action        |
|--------------------------------------|-------------------------------|-------------------------|
| <b>Elements added</b>                |                               |                         |
| LoanApplicationModule                |                               |                         |
| LoanApplicationModuleAssemblyDiagram |                               |                         |
| Component1                           | LoanApplicationModuleAssem... | Update event source     |
| <b>Elements removed</b>              |                               |                         |
| LoanApplicationModule                |                               |                         |
| LoanApplicationModuleAssemblyDiagram |                               |                         |
| mainProcess                          |                               |                         |
| LoanProcess                          |                               |                         |
| Sequence                             |                               |                         |
| Receive                              | Receive                       | Update event source     |
| <b>Elements changed</b>              |                               |                         |
| LoanApplicationModule                |                               |                         |
| LoanApplicationModuleAssemblyDiagram |                               |                         |
| mainProcess                          |                               |                         |
| LoanProcess                          |                               |                         |
| LoanProcessENTRY                     | LoanProcess                   | Update event descriptor |
| LoanProcessCOMPENSATED               | LoanProcess                   | Update event descriptor |
| Sequence                             |                               |                         |
| LoanProcessEXIT                      | LoanProcess                   | Update event descriptor |

## Synchronization with WebSphere Business Modeler

Different users can provide input to a monitor model definition. The business analyst can use the Business Measures view of WebSphere Business Modeler to define the broad characteristics of KPIs and other business metrics. Then the WebSphere Business Monitor developer can import these definitions into the Monitor Development Toolkit as a starting point.

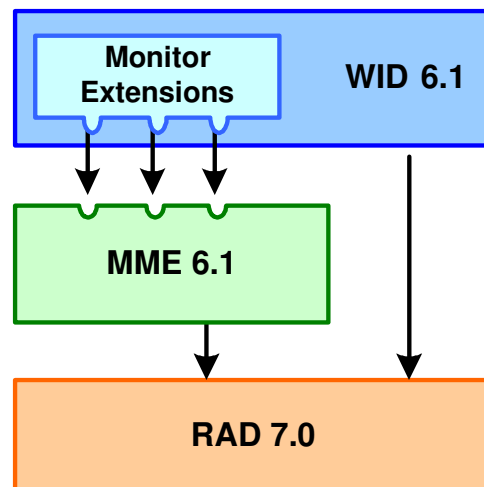


With WebSphere Business Monitor, you can iteratively review updates coming from WebSphere Business Modeler, compare how changes affect the currently implemented monitor model, and easily synchronize selected changes.

## Developing on top of Rational Application Developer

The nature of what needs to be monitored determines which tool platform to use. With WebSphere Business Monitor, you can choose from two tool platforms:

- Install the Monitor Model Editor (MME) on top of WebSphere Integration Developer and maintain first-class integration to monitor BPEL-based solutions, SCA, or other components, and leverage patterns-based monitor model generation, refactoring, and synchronization.



- For BAM solutions that do not require the ability to monitor components running on WebSphere Process Server, install WebSphere Business Monitor on top of Rational Application Developer and benefit from the smaller footprint of Rational Application Developer.

## Lowering the cost of ownership

### Overview

The time and effort required to install and administer your monitoring solution must be minimal. To speed the installation and administration steps, WebSphere Business Monitor provides flexible options that you can choose from to customize your configuration to your IT environment, and easy-to-use administrative capabilities to ensure that monitoring data is properly replicated and security is effectively enabled.

### Flexible configurations

Not all business monitoring requirements are the same. Some clients want a robust portal infrastructure that will serve as the framework for business monitoring. Some clients might need to enable dimensional analysis to generate multidimensional reports and analyze different dimensions of data. Still others look for a lightweight infrastructure to get started.

WebSphere Business Monitor now provides a Web-based dashboard that uses Representational State Transfer (REST) services for data access, JavaScript™ Object Notation (JSON) for data exchange, and the Dojo open-source Ajax toolkit for dashboard rendering. This configuration only requires WebSphere Application Server, not WebSphere Process Server. WebSphere Business Monitor also includes a REST API for additional dashboard customization.

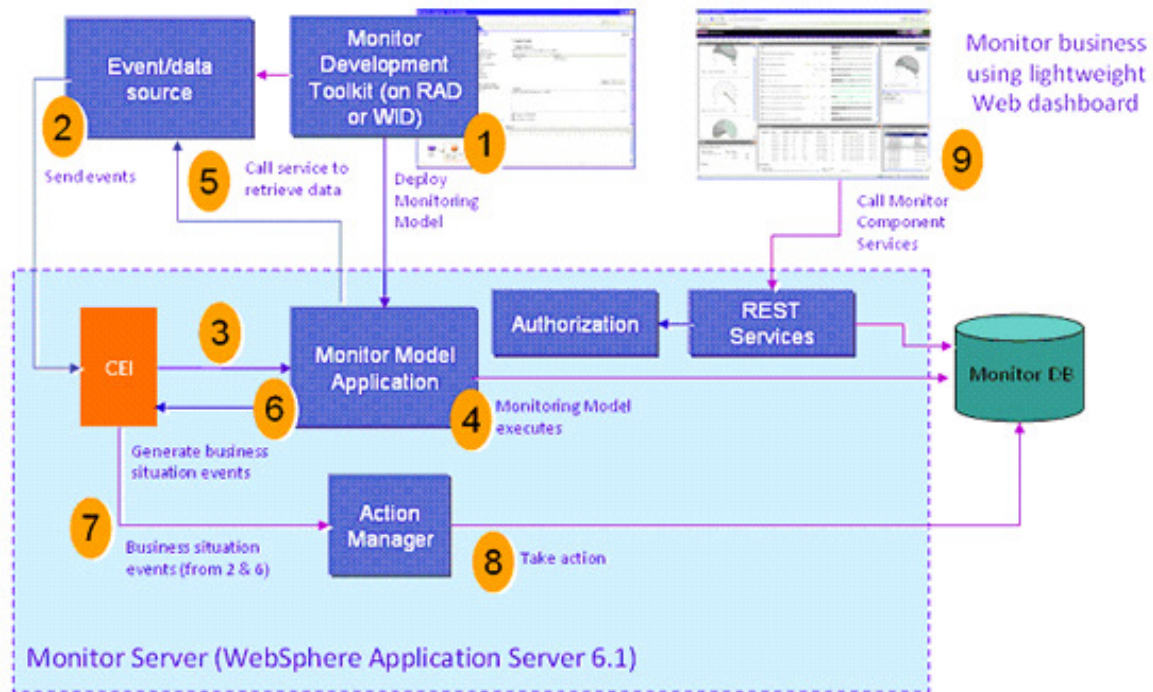
**WebSphere  
Business  
Monitor now  
provides a  
Web-based  
dashboard**

To flexibly accommodate various configuration needs, WebSphere Business Monitor defines four out-of-the-box configurations:

- Web-based dashboard, which is a lightweight configuration to get you started
- Web-based dashboard plus dimensional analysis, which is the browser-based configuration that includes DB2 Alphablox, enabling a light configuration geared toward trend analysis
- Portal-based dashboard, which is a dashboard configuration rendered in WebSphere Portal Server to offer integration in a broader collaboration environment
- Portal-based dashboard plus dimensional analysis, which is a portal-based dashboard with DB2 Alphablox, providing complete and integrated monitoring capability

These configurations are complementary, so a monitoring solution could be initially deployed on a Web-based dashboard and then subsequently modified for deployment on a portal framework.

The following diagram shows the end-to-end monitoring lifecycle steps for the Web-based dashboard configuration.



1. Define and deploy the monitor model with the Monitor Development Toolkit (which is installed on Rational Application Developer).
2. Set up the event sources to emit CBEs.
3. Receive inbound event data through the CEI.
4. Correlate event data through the deployed monitor model.
5. Retrieve additional data from data sources using user-defined functions.
6. Filter and send relevant business situation events back to the CEI.
7. Alert the Action Manager about business situation events.
8. Handle outbound actions and write events to the WebSphere Business Monitor database.
9. Display business metrics in a Web dashboard.

### Simplifying administration

WebSphere Business Monitor simplifies the administration of monitor models, security, and user registries.

WebSphere Business Monitor Action Manager, which handles outbound events, is now integrated with WebSphere Virtual Member Manager (bundled with WebSphere

Application Server), which provides a federated view of user registries. As the interface to user registries, Virtual Member Manager could include references to operating system and LDAP registries. A directly connected LDAP registry is no longer mandatory.

The screenshot shows a 'Configuration' dialog box with a blue title bar. Below the title bar, the word 'Configuration' is displayed in bold. Underneath, a subtitle reads 'Global configuration values that persist for each template of the given type.' There are three tabs: 'General' (selected), 'VMM', and 'LDAP'. The 'General Properties' section contains several text input fields: 'VMM service provider URL' (localhost:2809), 'VMM search type' (PersonAccount), 'VMM Group type' (Group), 'VMM uid' (uid), 'VMM cell phone' (mobile), 'VMM email' (mail), and 'VMM pager' (pager). At the bottom, there are four buttons: 'Apply', 'OK', 'Reset', and 'Cancel'.

You can now use Action Manager without security in certain environments, such as the test environment, by providing support for direct alert IDs or direct e-mail addresses. In addition, Action Manager now supports SCA invocations if Action Manager is running on an SCA-enabled runtime environment. The SCA component can be invoked asynchronously or synchronously, depending on whether a response is required from the Web service. If WebSphere Business Monitor is running on WebSphere Process Server, you can use the SCA template to invoke a BPEL process or other SCA service directly using the SCA infrastructure. You specify the module name and the export reference, which is used to locate the SCA service.

In our earlier discussion on iterative development, we highlighted the simplification of monitor model deployments. For a production server deployment, you have much more control with WebSphere Business Monitor regarding how you deploy the monitor model. There are specific pages for monitor model deployments that streamline the running the schema and DMS scripts, and set up cube and CEI configuration information. If this is a new version of an existing model, then you can migrate user-defined KPIs from the previous version.

|  |   |
|--|---|
| <p><a href="#">Step 1</a> Select installation options</p> <p><a href="#">Step 2</a> Map modules to servers</p> <p><a href="#">Step 3</a> Map shared libraries</p> <p><a href="#">Step 4</a> Provide JNDI names for beans</p> <p><a href="#">Step 5</a> Map EJB references to beans</p> <p><a href="#">Step 6</a> Map resource references to resources</p> <p><a href="#">Step 7</a> Map resource environment entry references to resources</p> <p><a href="#">Step 8</a> Ensure all unprotected 2.x methods have the correct level of protection</p> <p><b>→ <a href="#">Step 9: Select Monitor model options</a></b></p> <p><a href="#">Step 10</a> Select Monitor model Alphablox options</p> <p><a href="#">Step 11</a> Select Monitor model CEI options</p> <p><a href="#">Step 12</a> Summary</p> | <h3>Select Monitor model options</h3> <p>Specify information about database scripts, model runtime options and KPI merge.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><b>Database options</b></p> <p><input checked="" type="checkbox"/> Run scripts to create the schema</p> <p><input type="checkbox"/> Run scripts to enable Data Movement Services</p> <p><input type="checkbox"/> Run scripts to delete the schema during uninstallation</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><b>Runtime options</b></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><b>Processing Strategy</b></p> <p><input type="radio"/> 6.0.2 emulation</p> <p><input checked="" type="radio"/> Serial consumption multi-threaded</p> <p><input type="radio"/> Parallel consumption multi-threaded</p> </div> <p><input checked="" type="checkbox"/> Enable event reordering</p> </div> <div style="border: 1px solid #ccc; padding: 5px;"> <p><b>KPI merge</b></p> <p><input checked="" type="checkbox"/> Enable KPI merge from previous version</p> </div> |
|--|---|

## Summary

WebSphere Business Monitor enables you to assess and manage business activity. The range of activity that you can monitor varies widely, from activity on human or automated tasks, process-oriented or data-driven solutions, for operational or strategic insight. You determine what kind of dashboard to use (Web-based or portal-based) and the relevant data you want shown on the dashboard, all in a scalable and secure environment.



# Enabling business agility with WebSphere Business Services Fabric

- Leverage business service policies to implement changes quickly
- Build more-powerful policies using comparators and operators
- Manage and govern the lifecycle of business services
- Accelerate your solutions by leveraging Industry Content Pack (ICP) assets
- Build solutions faster with tools that support an asset-based development model

## Introduction

Regardless of the industry the organization is in or its size, each company faces a universal challenge: the inability to change complex processes rapidly and respond quickly to new demands for process variations. Organizations need the ability to create new innovative business models, deliver new and exciting products and services, and personalize their products and services to varying customer segments. Adding new geographies, channels, partners, suppliers, and products are examples of how processes are becoming complex so rapidly in the marketplace. Adding to that complexity are infrastructure changes resulting from system consolidations to mergers and acquisitions or legacy system modernization. Wherever the need originates, being able to adapt to these changes rapidly and flexibly can set your company apart from the rest.

BPM that is enabled by SOA can add value by helping you manage and control continuous change. But the marketplace requires companies to change dynamically and innovate faster than ever before. The faster a company can incorporate change, the more agile it is, and the more competitive it can be in the marketplace. WebSphere Business Services Fabric gives you a way to manage the complexity of business process change that extends traditional BPM technologies. By combining reusable building blocks, called *business services*, into composite business applications in a service-oriented environment, WebSphere Business Services Fabric can help you achieve dynamic process change more rapidly and manage that change more easily over time.

## Policy management

### Overview

WebSphere Business Services Fabric abstracts the logic of how services are assembled and contextualized out of business processes and puts it into metadata and policies. A business policy represents how the business intends the business process and services to operate in a given business context or scenario. You can accelerate your ability to act on dynamic process changes by abstracting this type of logic into metadata and policies that are centrally stored and managed.

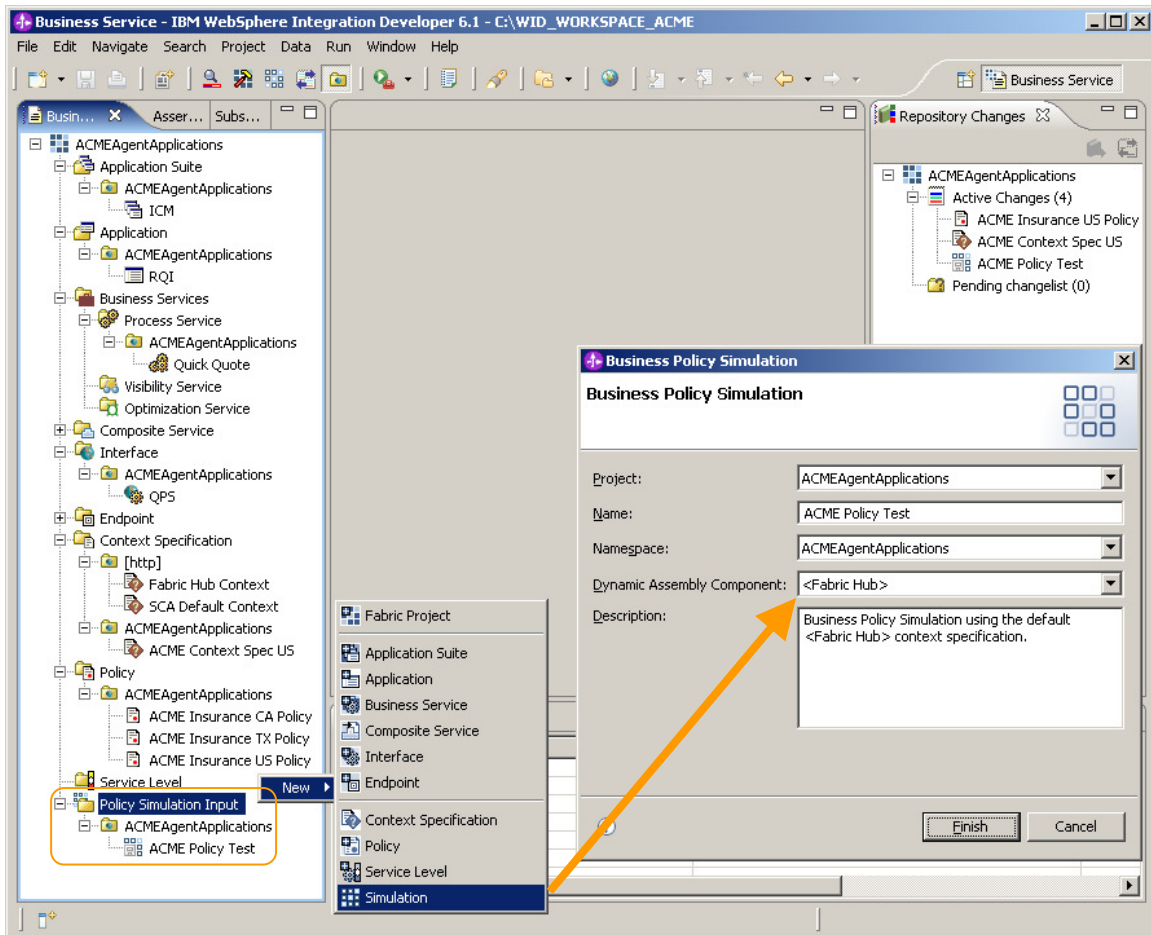
**Drive process changes using policies and avoid costly coding changes**

Traditionally, making changes to business process and services required changing code, which often required a lengthy and costly redeployment cycle. With WebSphere Business Services Fabric, you can drive process changes using policies, avoiding costly coding changes. You can also manage the lifecycle of business policies, making policy changes quickly while having complete control and visibility of those changes, simulating policies, and creating policy programming models and expressions.

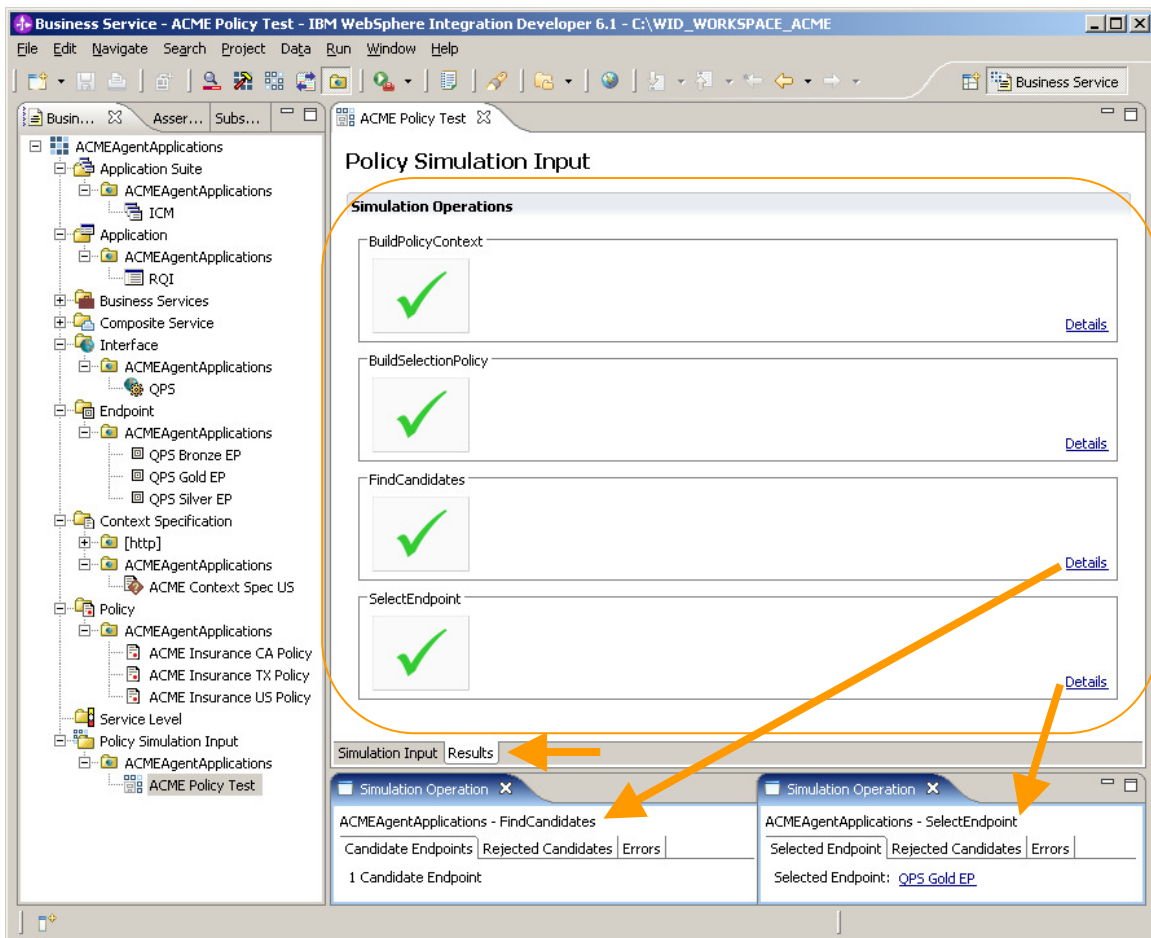
### **Policy simulation**

WebSphere Business Services Fabric includes a simulation environment where you can see how the runtime environment selects the best service endpoint to bind to a business processes for an operating context. You can model your policies and run a simulation immediately to see how the runtime environment enforces these policies, which is a key advantage of the WebSphere Business Services Fabric declarative approach. Conversely, in an imperative programming approach, you must write code that specifies how policies are enforced, which results in longer testing cycles because the code has to be compiled and deployed into a runtime environment before it can be tested.

With WebSphere Business Services Fabric, you can save, share, and reuse your simulations, which means that you can build test harnesses of simulations that you can quickly re-run to validate and verify the changes that were made to the policies. The following figure shows a simulation being created.



Simulations are automatically generated with a correct set of inputs that are based on the context specification that you defined, taking the guesswork out of defining the criteria used for a specific service selection scenario. Simulation results provide more-detailed information about the set of policies that are triggered for a given business context, the service endpoints considered, and the service endpoint selected. In case of failures, the system displays the exact point at which the simulation failed and the reason for the failure. This information makes it easy for you to understand how the runtime environment enforces policies and quickly determines the root cause of an error.

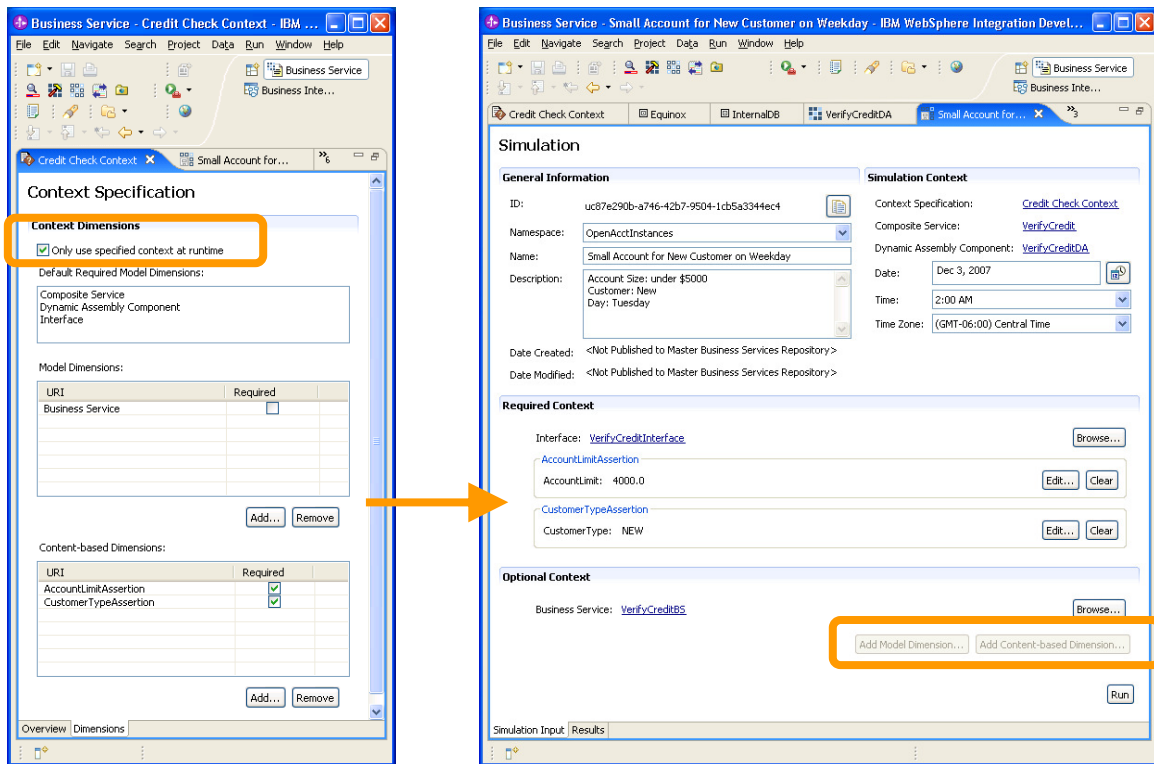


## Policy programming modeling using context specifications

WebSphere Business Services Fabric significantly enhances your productivity when building, testing, and deploying policies using context specifications. A context specification defines the set of dimensions required for a service-selection scenario and serves the following purposes, among others, in the policy lifecycle (for example, customer type and amount assertions):

- Documenting key criteria that are used for evaluating policies to drive a service-selection scenario
- Serving as a contract between what was modeled and the runtime environment, ensuring that only the necessary dimensions or relevant policies for a business context are present at run time and are considered for a service-selection scenario and for evaluating policies
- Automatically generating the simulation user interface with correct selection criteria, ensuring that each service-selection scenario is properly tested
- Enhancing performance by allowing the runtime environment to employ smart-caching strategies

The following screen captures show the context specification editor and simulation user interface with selection criteria automatically generated based on the context specifications.



## Expressive policy power

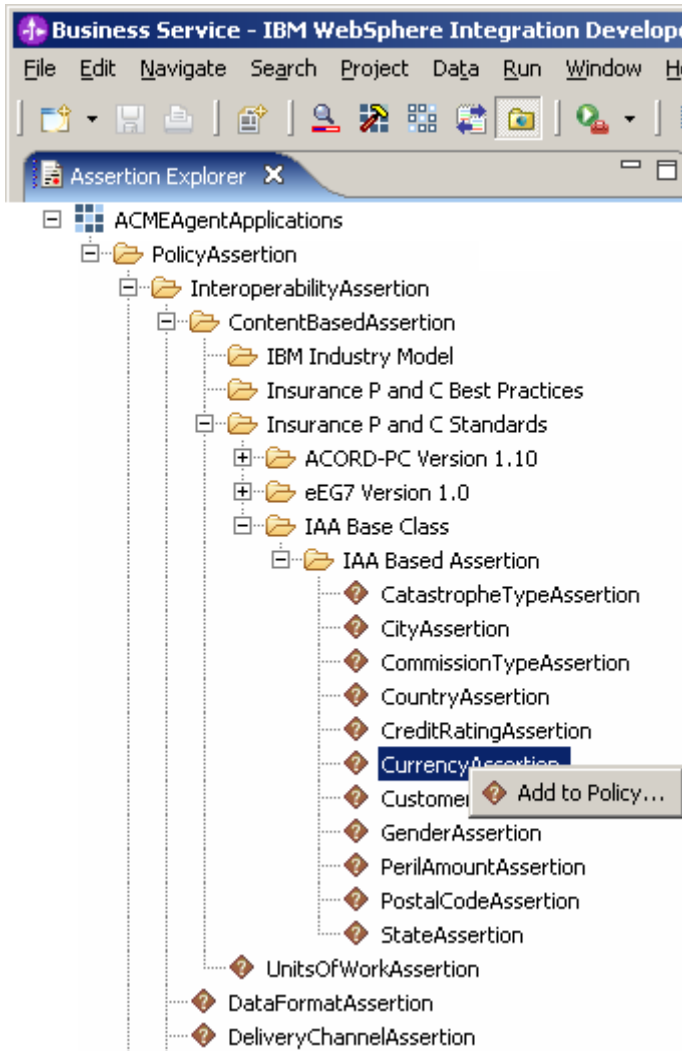
A key advantage of WebSphere Business Services Fabric is that the runtime environment understands the modeled policies. You do not have to write code to enforce the semantics of the service-selection policies; policies are enforced exactly the same way as what you model and simulate in the tools. Out of the box, WebSphere Business Services Fabric includes assertions, comparators, and operators that you can immediately incorporate into your modeling policies.

As part of the Industry Content Packs, 56 domain-specific assertions are available that help you model a broader range of service-selection scenarios. In addition, capabilities have been added for dealing with a large number of policy dimensions that use set-based comparators and regular expressions for complex string-based comparisons. For more information about or examples of the Industry Content Packs, see the Industry content packs section below.

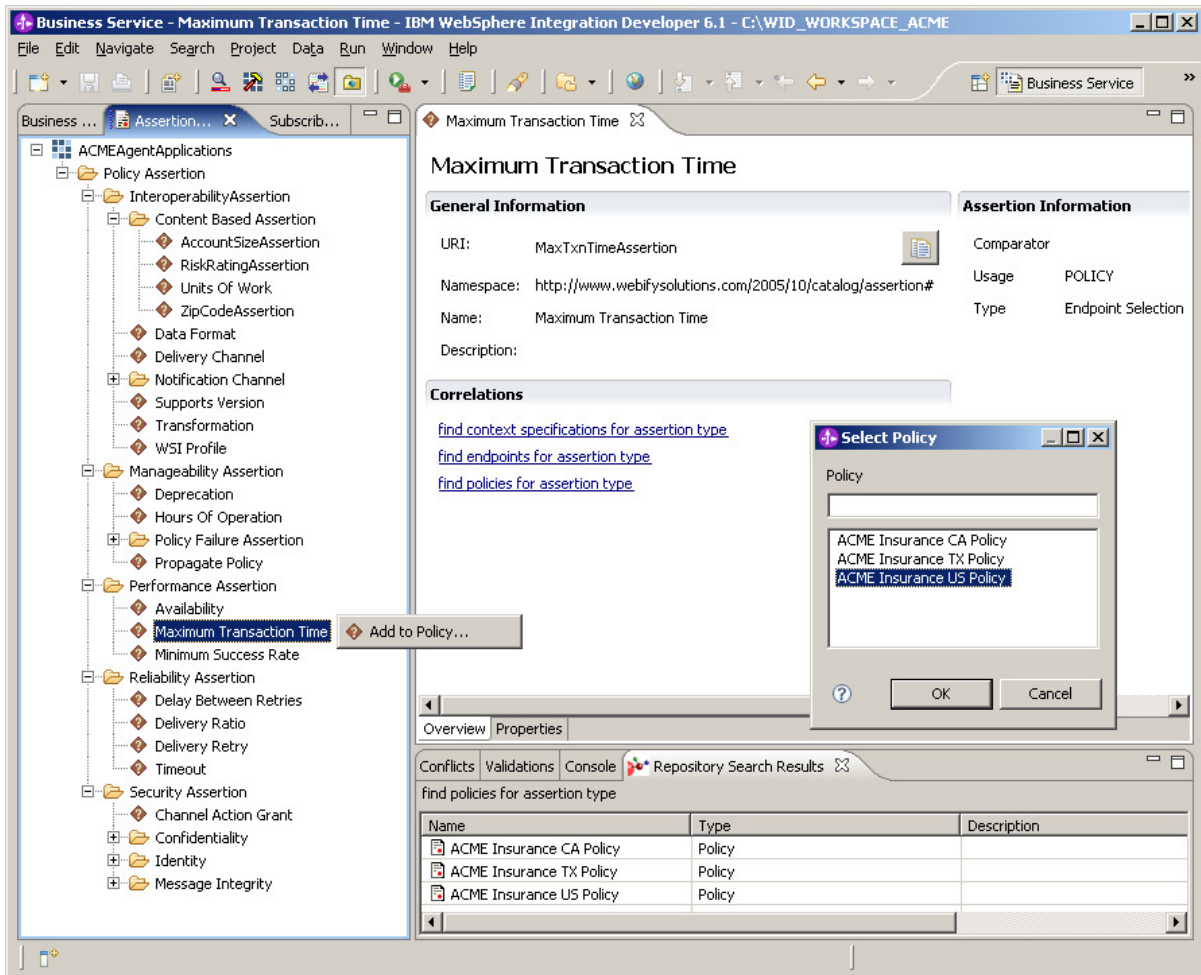
## Policy and assertion tools

WebSphere Business Services Fabric has streamlined tools that are related to policies. Constraints are now in place to prevent common policy modeling mistakes, such as the incorrect use of assertions while modeling policies. Assertions are used to model

industry-specific concepts that represent the capabilities of a service or describe the requirements in a policy. The WebSphere Business Services Fabric assertion tools can now handle large amounts of data. Using the Assertion Explorer, you can look for and discover assertions while you create policies. You can also organize the assertions that are available in the Industry Content Packs in a way that makes sense to using specific domains. The following screen capture illustrates assertions from the Insurance Property and Casualty Content Pack as organized by the standards that they originated from.



To make key details about assertions easy to find in the tools, WebSphere Business Services Fabric includes an assertion-type editor that provides assertion details, including the correlations that show the dependencies to objects in the business service model that use the assertion.



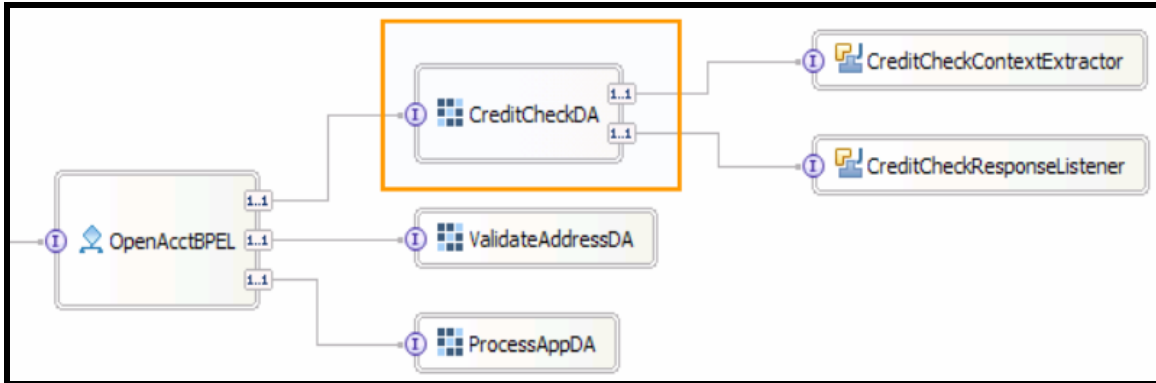
## Integrated and aligned with the BPM portfolio

### Overview

WebSphere Business Services Fabric is better integrated and aligned with other products in the portfolio, allowing it to be leveraged as part of a larger BPM-based solution.

### Programming model alignment

WebSphere Business Services Fabric leverages the same Service Component Architecture (SCA)-based programming model as the other products in the BPM portfolio, enabling you to create business services. In the following screen capture, the WebSphere Business Services Fabric runtime component is shown exposed as an SCA component that can be leveraged along with other BPM runtime capabilities that are exposed as SCA components to build solutions.



## Industry content packs

### Overview

Because Industry Content Packs contain predefined SOA assets, you can get started defining your policies faster. The following Industry Content Packs include business service templates that are based on industry standards and practices.

**Get started  
defining your  
policies faster**

Each of the following Industry Content Packs include revisions to business service metadata, additions to channels, roles, and assertions based on new standards, and capability and process maps, plus the following industry-specific features:

- IBM Insurance Property & Casualty Content, which focuses on the property and casualty lines of business for insurance enterprises, now includes support for new standards, such as eEG7 SMILe Data Dictionary (extended from Core Components) and eEG7-based data model, and additional common services based on ACORD business object models and ACORD PC 1.10 standards.
- IBM Healthcare Payor Content Pack, which focuses on the of health insurance processes, now includes support for new standards, such as HL7 Vocabulary, new interfaces, and additional common services based on ASC-X12,HL7 2.x and HL7 3.0 standards.
- IBM Banking Payments Content Pack, which focuses on the payments capabilities of financial services enterprises, now includes support for new standards, such as ISO20022 Data Dictionary, ISO20022 Data Dictionary-based business object models, and SEPA 2.2, process maps based on ISO20022 standards, and additional common services based on SEPA, SEPA-AOS, and NACHA standards,
- IBM Telecom Operations Content Pack, which focuses on the service provisioning and service assurance processes for telecommunication service providers, now includes process and capability maps based on eTOM, updated XSDs, new interfaces definitions, and additional common services.



## Knowledge assets

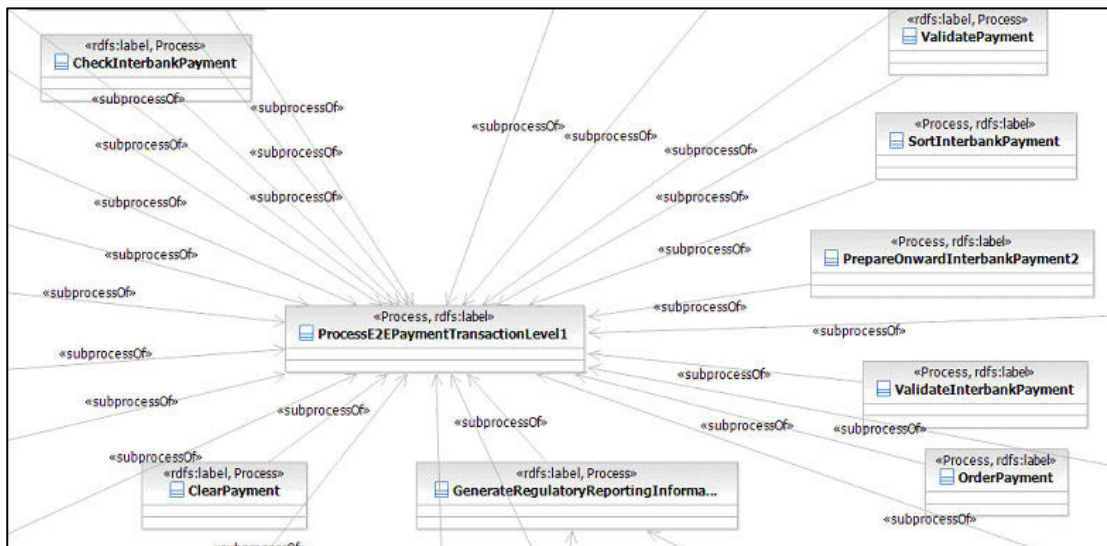
The *Reference Architecture Guide*, *How-To Guide*, and *Developer's Guide* in each Industry Content Pack now provide more-detailed and industry-specific documentation:

- *How-To Guide* explains the usage and extension patterns for Industry Content Pack assets with respect to a SOA solution using a case study.
- *Reference Architecture Guide* explains the high-level architecture for content packs, how Industry Content Pack architecture fits in with IBM SOA reference architecture, and how Industry Content Pack assets fit in with various IBM tools and products across different phases of SOA lifecycle methodology.
- *Developer's Guide* now addresses usage and extension scenarios for each Industry Content Packs and includes valuable feedback from clients.

## Capability and process maps by industry

Industry Capability and Process Maps, which are based on industry standards, such as eTOM, TAM, ISO 20022, ACORD, and HL7, help you attain business-to-IT alignment by giving you top-down visibility into the business by identifying the business capabilities and processes that are consistently reusable by mapping capabilities, processes, and business services.

The following image is an example of a banking payments capability and process map.



## Modeling support

In the following ways, WebSphere Business Services Fabric has streamlined the modeling support for Industry Business Glossary:

- Usability
  - The Fabric Modeling Tool is now more seamless with content editing.
  - The Fabric Modeling Tool generates only relevant concepts as part of Industry Business Glossary, resulting in faster product startup.

- Labels and comments from the source model are carried over into Industry Business Glossary, loaded, and made available in WebSphere Business Services Fabric.
- Efficiency
  - Define industry concepts using fewer steps to convert industry terms to Industry Business Glossary terms.
  - Use industry dictionaries (like eEG7 SMILe, ISO20022, and HL7 Vocabulary) that contain numerous industry terms that are defined as concepts, properties, and their relationships.
- Reliability
  - Preserve descriptions and comments about business terms from the source models.

## Summary

Companies need flexible solutions to support change in an environment of increasing process complexity. Composite business applications assembled from business services can meet these needs by dynamically adapting business functionality based on changing business context and policies. Additionally, by storing business policies in one centralized location to govern the behavior of business services, you can more easily change and maintain processes and do impact analysis. WebSphere Business Services Fabric extends the BPM enabled by SOA platform to achieve these benefits while offering optional Industry Content Packs to accelerate the deployment of industry-specific composite business applications.

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