Bruce Silver Associates
Independent Expertise in BPM

Industry Trend Reports
October 2008

OPTIMIZING YOUR BUSINESS FOR DYNAMIC CHANGE

Multiple Paths to BPM

In the spring of 2008 IBM announced the IBM Business Process Management (BPM) Suite, which integrates components from across the company's diverse brands – WebSphere, FileNet, Lotus, and Rational. While customers can select from a wealth of IBM BPM Suite offerings, most will begin with one of two prepackaged "foundational" configurations: WebSphere Dynamic Process Edition or FileNet Active Content Edition.

The first is based on the WebSphere Process Server platform and is oriented to mission-critical processes, integration-intensive and human-centric, based on SOA. WebSphere Dynamic Process Edition includes WebSphere Business Modeler, WebSphere Business Monitor, and WebSphere Business Services Fabric. WebSphere Business Services Fabric leverages WebSphere Process Server and WebSphere Integration Developer, so WebSphere Dynamic Process Edition provides comprehensive tooling and runtime for BPM solutions.

The second is based on the FileNet BPM platform and oriented to document-driven and other content-aware processes The FileNet Active Content Edition includes the FileNet BPM engine and design environment, eForms, and Business Process Framework for case management solutions. While the two editions have separate process engines and design tools, they now share a common modeling and monitoring environment (WebSphere Business Modeler and WebSphere Business Monitor) and asset repository for BPM, and FileNet processes can be easily invoked as subprocesses within an end-to-end WebSphere business process.

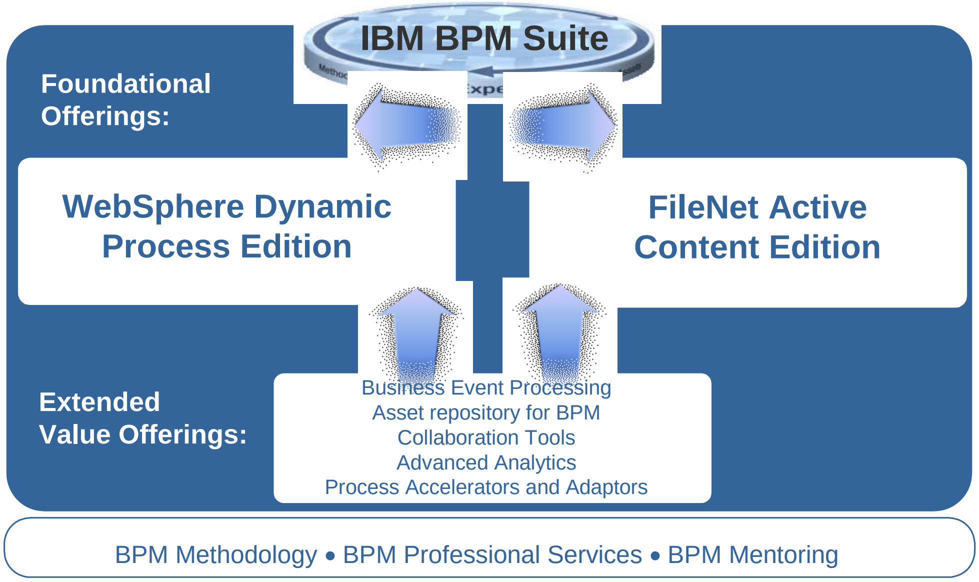
IBM BPM Suite
Foundational Offerings:
WebSphere Dynamic Process Edition
FileNet Active Content Edition
Extended Value Offerings:
Business Event Processing
Asset repository for BPM
Collaboration Tools
Advanced Analytics
Process Accelerators and Adaptors
BPM Methodology • BPM Professional Services • BPM Mentoring

Figure 1. IBM BPM Suite includes foundational editions for dynamic processes and content-aware processes. Source: IBM

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The choice of foundational offerings reflects IBM's view that there are multiple paths to BPM solution development, based on the nature of the business processes to be managed. In fact, many business processes, particularly solutions that have to deal with a lower degree of variability based on customer location, interaction channel, or type of request, are handled perfectly well by conventional BPM notions of process modeling and executable design. IBM's BPM Suite works well in the conventional BPM lifecycle, where activity flow logic modeled by business in WebSphere Business Modeler are imported directly into the BPEL implementation environment. In fact, IBM's BPM tools continue to improve there, giving business analysts and architects increasing capabilities and requiring less work for integration developers. However, in the core processes of major enterprises in banking, insurance, telecommunications, and healthcare, the dimensions of variation and change become so numerous that this conventional BPM lifecycle breaks down. IBM calls these *dynamic processes*, and provides a new BPM Suite architecture to handle them.

This white paper focuses on the WebSphere Dynamic Process Edition. In particular, we'll look at new capabilities introduced in version 6.1.2 and 6.2 that go beyond conventional BPM to provide a unique architecture for managing these dynamic processes subject to continuous customization and change. The heart of the WebSphere Dynamic Process Edition is a capability not found in competitors' offerings, WebSphere Business Services Fabric. WebSphere Business Services Fabric, the result of IBM's acquisition of Webify in 2006, provides modeling, dynamic assembly, and governance of *composite business applications* (CBA). CBAs are process implementations composed from reusable business services and configured dynamically at runtime based on *business service policies*. The introduction of WebSphere Business Services Fabric into the BPMS alters the conventional BPM lifecycle and replaces it with a new one that allows business and IT to collaborate in the modeling, monitoring, and governance of complex, large-scale integration-intensive solutions.

What Are Dynamic Processes?

In conventional BPM, the business logic of a process is first modeled as activity flows. The modeling tool allows a process analyst to simulate the expected performance of the process solution and create the user interfaces for human tasks. Publishing the model to the web allows other users to comment and collaborate on it. Integration developers can then import the model, add technical details for execution, and deploy it to the runtime environment, from which business performance can be monitored and analyzed in business dashboards. For many processes, this conventional BPM lifecycle still works well, and can be implemented readily using WebSphere Business Modeler, WebSphere Process Server, and WebSphere Business Monitor, and WebSphere Business Modeler Publishing Server.

But for an important class of processes – *dynamic processes* – the effectiveness of this conventional approach diminishes. Dynamic processes are those in which details of each major step in the process depend on specific attributes of the process instance, such as the customer making the request, the channel of interaction, the date and time of the request, and specifics of the request itself. Process instances differing in these characteristics represent variability in what otherwise could be seen as a standardized generic process.

IBM believes there are six key tools for increasing a business's ability to respond to change – *agility enablers*. They include policies, rules, service selection, active content, events, and analytics. All are intended to make processes more flexible and responsive, but in practice they too often hinder change due to their rigidity and inflexibility. These may involve changing manual tasks, or may be handled inconsistently through redundant processes, or perhaps the processes themselves may be completely ad-hoc and undocumented. In these cases, obtaining rapid, consistent and decisive process change is next to impossible. But done right, such agility enablers allow faster response to changing needs. IBM's BPM Suite tries to make each of these agility enablers responsive, reliable, and scalable through the combination of product capabilities, professional services, and related BPM best practices.

Introducing WebSphere Dynamic Process Edition

Optimized for the particular requirements of dynamic processes, WebSphere Dynamic Process Edition can be used with conventional processes as well. It provides policies, rules, service selection, and analytics and can support events and active content through WebSphere Business Events and IBM Cognos 8 Go! Business Intelligence. This foundational offering within the IBM BPM Suite includes:

- **WebSphere Business Modeler**, a business-friendly tool for modeling business processes, simulating them for what-if analysis, and creating task user interfaces via WYSIWYG for design.
- **WebSphere Integration Developer**, a tool for integration developers to create and assemble SOA solutions that include: business processes involving systems and human tasks; mediation, orchestration, and integration of services; business rules and state machines, interface and data mapping; and a wide range of adapters for interactions with people, data and systems.
- **WebSphere Process Server,** a standards-based SOA runtime environment that orchestrates people, processes, and information services. Process Server combines robust process automation, advanced human workflow, business rules, system-to-system and B2B capabilities on a common SOA platform.
- **WebSphere Business Services Fabric,** a set of tools and runtime components that let business and IT collaborate to manage process variation and change. WebSphere Business Services Fabric supports business-IT alignment by organizing the business into reusable building blocks and assembling them into composite business applications. It speeds time to value by via prebuilt industry assets that leverage years of IBM investments in key industries and applications, and drives business agility by adapting easily to changing business needs.
- **WebSphere Business Monitor**, providing flexible real-time Business Activity Monitoring based on both process data and external events, with customizable KPI dashboards showing the current state of business processes and operations, problem detection and alerts, rich analytics for dimensional analysis of business performance.

With WebSphere Dynamic Process Edition, a broad range of users can get started with conventional BPM processes and evolve from these processes to truly dynamic processes.

The Dynamic BPM Approach

All types of process participants, from Business Leaders to IT Architects, can collaborate in managing and optimizing their processes. The goal of BPM is not restricted to simply building and running a good process, but also to create processes supported by a continuous feedback loop, and the tools and capabilities to collaborate across multiple stakeholders within an organization. Each role contributes and gives back to the process to continuously improve and optimize it further.

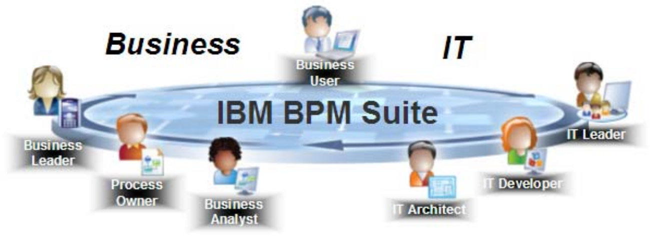


Figure 2. Many roles benefit from and participate in managing and optimizing dynamic business processes. Source: IBM

All the agility enablers mentioned earlier drive the dynamicity of BPM. This paper highlights an end-to-end BPM approach to dynamic process with WebSphere Business Services Fabric as the engine in WebSphere Dynamic Process Edition.

The conventional BPM approach is to model process variability using different paths in the flow logic (Figure 3, left): *if Gold customer contacts by phone, invoke service A; if regular customer contacts by web, invoke service B; etc*. Each node in the process model, representing a specific service endpoint, implements specific actions required by some type of instance, and the process logic as a whole is represented by the flow diagram. Because the activity flow is modeled graphically, it is not hard to change, at least compared to writing code. But in the real-world processes of loan origination, insurance underwriting, or telecom provisioning, the dimensions of variability among instances can be extremely numerous, leading to complex flow diagrams that, using the conventional BPM approach, are not truly agile.

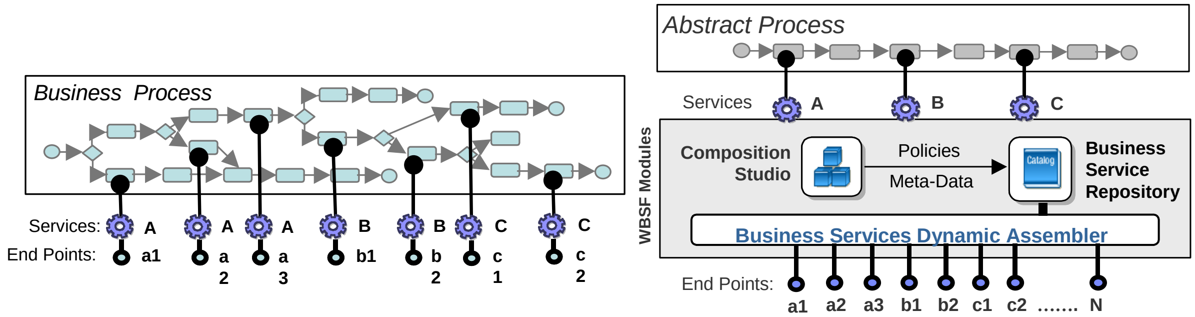


Figure 3. Conventional BPM (left) vs WebSphere Dynamic BPM (right). Source: IBM

Instead of representing process variation using complex orchestration logic, WebSphere Dynamic Process Edition does it a different way. A simpler, more reusable process model is employed, reflecting a linear sequence of configurable *business services* (Figure 3, right). A single business service represents all of the variants of a particular coarse-grained business function, with each variant represented by a different service endpoint. Fabric defines the *business service policies* or rules that govern which variant is selected based on properties of the instance, and dynamically assembles the correct service endpoints at runtime. Moreover, the policies and business service metadata they act upon are reusable across processes, maintained in a central *business service store* for improved governance and agility.

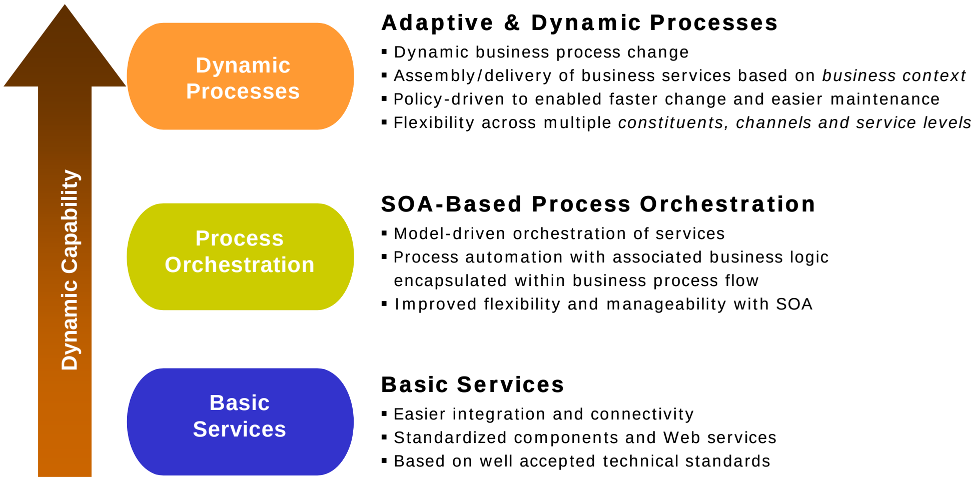

Dynamic Capability
Dynamic Processes
Adaptive & Dynamic Processes
▪ Dynamic business process change
▪ Assembly/delivery of business services based on business context
▪ Policy-driven to enabled faster change and easier maintenance
▪ Flexibility across multiple constituents, channels and service levels
Process Orchestration
SOA-Based Process Orchestration
▪ Model-driven orchestration of services
▪ Process automation with associated business logic encapsulated within business process flow
▪ Improved flexibility and manageability with SOA
Basic Services
Basic Services
▪ Easier integration and connectivity
▪ Standardized components and Web services
▪ Based on well accepted technical standards

Figure 4. Evolution of dynamic BPM. Source: IBM

IBM believes its dynamic process architecture represents the next stage in the evolution of BPM on SOA (Figure 4). The first stage simply leveraged standardized service interfaces to simplify business integration. The next stage, which characterizes most BPMSs today, uses standards like BPMN and BPEL to provide model-driven service orchestration. It requires little or no code, but requires complex models to handle dynamic processes. The new architecture, featuring abstract process models with just-in-time assembly and delivery of business services based on business policies, allows process solutions to adapt to a wide variety of circumstances and be maintained more easily, essential as BPM deployment evolves from individual projects to enterprise-scale programs.

Business Services and CBAs

IBM calls dynamic processes defined in this way *composite business applications* (CBAs). Composite business applications are a means to render dynamic processes within a business context, and have the following characteristics:

- Discoverable through metadata that can be searched in a repository.
- Composable from services exposed by packaged applications, integration adapters, custom development, and the Fabric middleware itself.
- Configurable without programming to support a wide variety of customer use cases.
- Dynamically assembled and executed at runtime based on context, content, and contract.
- Interoperable with heterogeneous systems and technologies using industry standards.
- Subscribable, that is, accessible at runtime to authorized consumers as a set of *portfolio entitlements.*
- Governable throughout their lifecycle through versioning in the repository

The resulting architecture is well suited to large-scale deployment of BPM based on SOA. Coarse-grained business services are reused in a variety of CBAs, which are accessible to a variety of role-based subscribers in the form of personalized service portfolios (Figure 5).

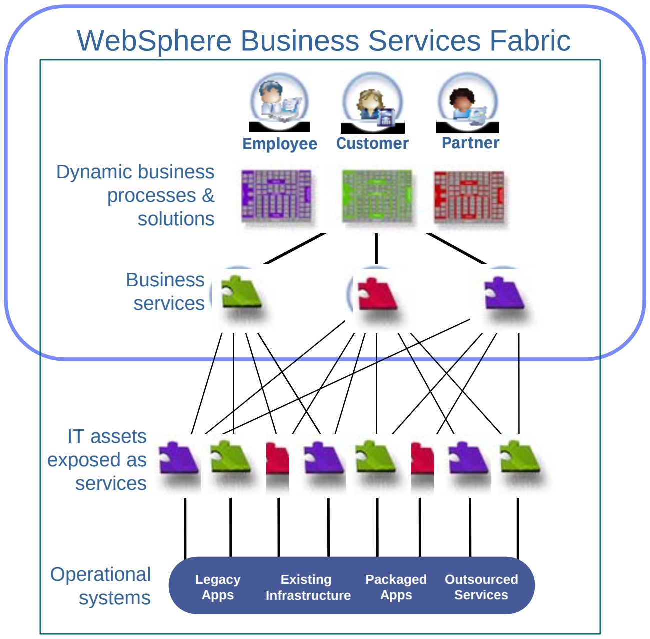


Figure 5. WebSphere Business Service Fabric application architecture. Source: IBM

Before they can become WebSphere Business Services Fabric business services, IT assets must first be exposed as coarse-grained services through SOA tools and middleware such as WebSphere Integration Developer (WID) and Rational Software Architect, and stored in WebSphere Registry/Repository (WSRR). From there they are imported into the WID Business Services perspective, where they are provided the additional metadata required for dynamic assembly.

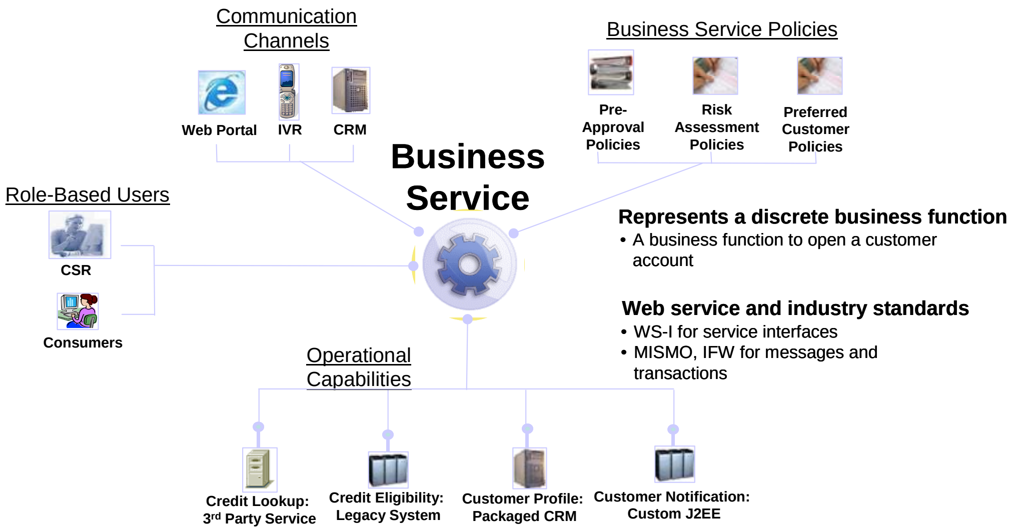

Communication Channels
Web Portal
IVR
CRM
Business Service Policies
Pre-Approval Policies
Risk Assessment Policies
Preferred Customer Policies
Business Service
Role-Based Users
CSR
Consumers
Represents a discrete business function
• A business function to open a customer account
Web service and industry standards
• WS-I for service interfaces
• MISMO, IFW for messages and transactions
Operational Capabilities
Credit Lookup: 3rd Party Service
Credit Eligibility: Legacy System
Customer Profile: Packaged CRM
Customer Notification: Custom J2EE

Figure 6. Anatomy of a business service. Source: IBM

A business service is an abstract, reusable representation of a discrete business function. It is more than a technical service definition such as WSDL. Business service metadata also includes information necessary to correctly apply the service in a business process context, such as availability, user entitlements, lines of business supported, and relationship to other services (Figure 6). A business service thus serves as a bridge between business and IT, clarifying shared understanding of service capabilities and constraints. It is described by three main elements:

- A *business function*, that is, the implementation itself, described using a standardized, semantically consistent interface. The implementation could range from a simple atomic service to a BPEL business process. The business service typically composes a variety of service endpoints, each representing a particular implementation of a service activity, so that the business function is applicable to any consumer or operational circumstance.
- A *canonical data model*, a standardized representation of data typically based on industry standards such as ACORD, HL7, or ISO 20022. IBM provides a variety of Industry Content Packs that encapsulate these industry standards in artifacts that accelerate business service development.
- *Business metadata*, business policies and assertions that describe the operational capabilities and restrictions of each service endpoint.

Unlike business services, CBAs are not generally intended to be reused. A CBA is a composition of business services organized to deliver a specific business outcome. CBAs are composed graphically in Fabric Composition Studio, an add-in to WID. Like business services, CBAs consolidate business usage information in the form of metadata available for discovery and long-term governance. This metadata also allows just-in-time configuration and execution of business services at runtime, which IBM calls *dynamic assembly*.

Dynamic Assembly

Dynamic assembly of a requested service is based on *business service policies*. Business service policies are described declaratively based on three pieces of information:

- *context*, such as which role is instantiating the request, over which channel, at what date and time, etc.;

- *content*, or process instance data, such as the type of loan requested or the loan amount; and
- *contract*, the selected set of service capabilities, restrictions, or preferences based on the specific combination of context and content.

Each business service policy essentially declares, "if context is X and content is Y, then contract is Z." *Endpoint assertions*, expressing capabilities of each endpoint, enable the WebSphere Business Services Fabric runtime to select a specific endpoint compatible with the contract to execute in a particular instance of the business service.

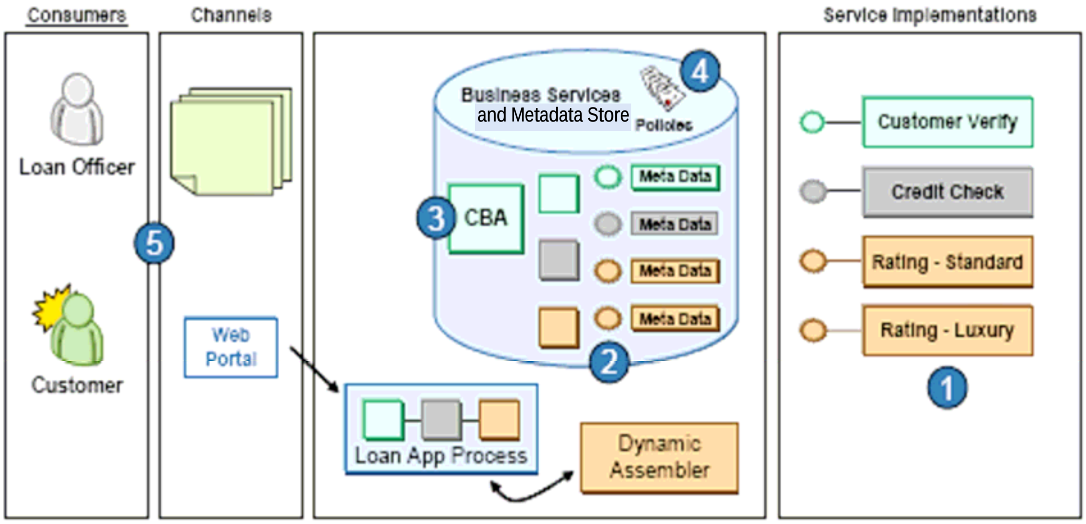


Figure 7. Dynamic assembly of business services at runtime. Source: IBM

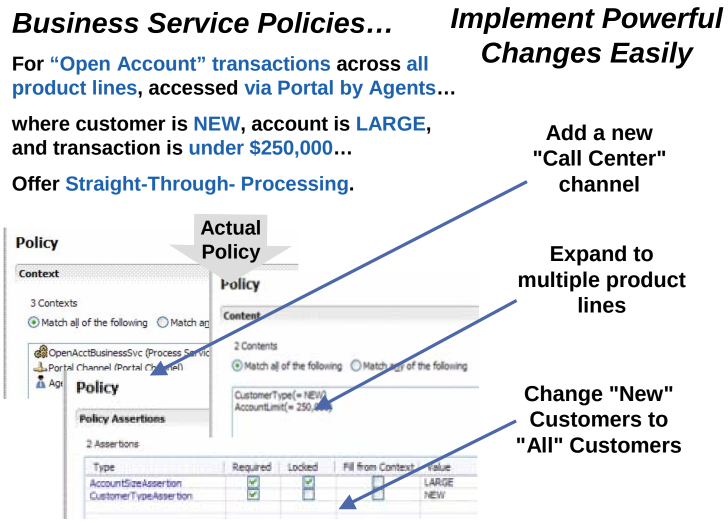
How It Works

Figure 7 illustrates how it works. Consider a home loan application process. On the right are the various service implementations, or endpoints (1). Here the loan rating service has one endpoint for a standard loan and another for a jumbo loan. The endpoint implementations are maintained in the WebSphere Registry/Repository. The business service metadata (2) is published to the Fabric Business Service Repository (BSR). The Loan Process CBA (3) is a composition of business services and its metadata is also published to the BSR. A business policy (4) states that all loan amounts in excess of $500K are considered jumbo loans and those under $500K are considered standard loans.

Two channels exist for invoking the CBA, a browser interface for consumers and a branch office batch interface for loan officers. Let's say the consumer requests a loan for $600K. Because the loan rating service has multiple endpoints defined, the decision on which to execute is deferred to the dynamic assembler engine. The engine reviews the context (consumer over browser channel), the content (loan amount over $500K), and all known metadata and policies to generate the contract. Although two endpoints exist, only one meets the requirements of the contract, and the dynamic assembler selects the jumbo rating endpoint to implement the business service.

Benefits of the Dynamic Approach

Configuring services dynamically at runtime based on business-defined policies simplifies process governance and change (Figure 8). Suppose the bank now introduces a new super-jumbo loan offering for amounts over $1 Million. With WebSphere Business Services Fabric, only a few simple additions to the CBA are required: a new service endpoint for the super-jumbo offering, association of the new endpoint with the loan rating service, and a new policy stating that loan amounts greater than $1 Million are super-jumbo.



Business Service Policies…

For "Open Account" transactions across all product lines, accessed via Portal by Agents…

where customer is NEW, account is LARGE, and transaction is under $250,000…

Offer Straight-Through- Processing.

Implement Powerful Changes Easily

Add a new "Call Center" channel

Expand to multiple product lines

Change "New" Customers to "All" Customers

Actual Policy

Policy

Context

3 Contexts

● Match all of the following ○ Match an

OpenAcctBusinessSvc (Process Servic
Portal Channel (Portal Channel)
Age

Policy

Content

2 Contents

● Match all of the following ○ Match any of the following

CustomerType(= NEW)
AccountLimit(= 250,000)

Policy

Policy Assertions

2 Assertions

Type	Required	Locked	Fill from Context	Value
AccountSizeAssertion	☑	☑	□	LARGE
CustomerTypeAssertion	☑	□	□	NEW

Figure 8. Declarative business service policy-based service configuration simplifies process governance and change. Source: IBM

In practice, centralizing the management of service governance and reuse is essential for companies looking to deploy BPM and SOA across multiple product lines, applications, or geographies across the enterprise. For example, consider a property and casualty insurer with multiple lines of business, multiple channels of contact for customers, prospects, and agents, and siloed IT systems to support each channel and line of business (Figure 9).

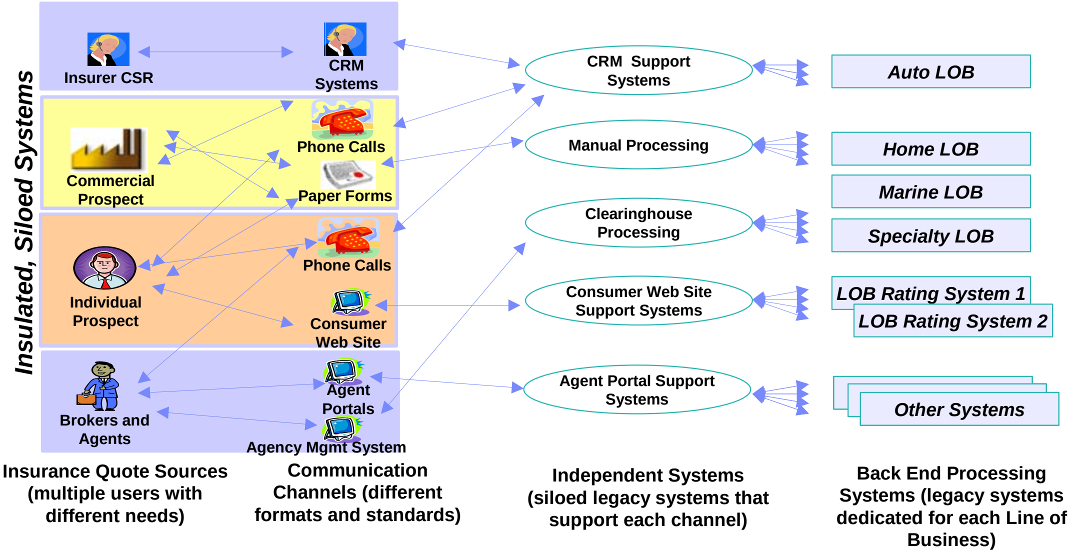

Insulated, Siloed Systems
Insurer CSR
CRM Systems
Commercial Prospect
Phone Calls
Paper Forms
Individual Prospect
Phone Calls
Consumer Web Site
Brokers and Agents
Agent Portals
Agency Mgmt System
CRM Support Systems
Manual Processing
Clearinghouse Processing
Consumer Web Site Support Systems
Agent Portal Support Systems
Auto LOB
Home LOB
Marine LOB
Specialty LOB
LOB Rating System 1
LOB Rating System 2
Other Systems
Insurance Quote Sources (multiple users with different needs)
Communication Channels (different formats and standards)
Independent Systems (siloed legacy systems that support each channel)
Back End Processing Systems (legacy systems dedicated for each Line of Business)

Figure 9. Conventional BPM integrates diverse contact channels and systems with complex process logic. Source: IBM

With conventional BPM and SOA, the prospect of modeling, configuring, and provisioning services for reuse across the enterprise would be a Herculean task. But IBM's dynamic process approach is ideally suited to create a QuickQuote CBA that works across roles, channels, and lines of business, managing policies and entitlements and process change in a centralized store (Figure 10).

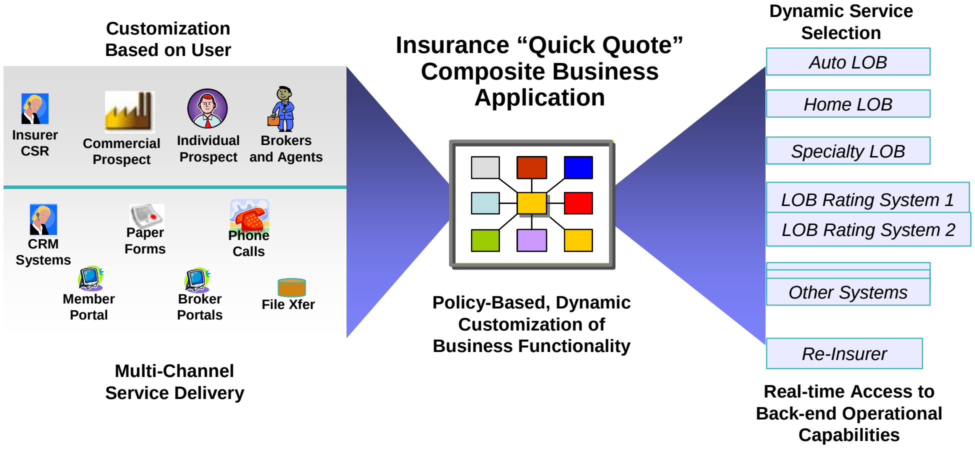

Customization Based on User
Insurer CSR
Commercial Prospect
Individual Prospect
Brokers and Agents
CRM Systems
Paper Forms
Phone Calls
Member Portal
Broker Portals
File Xfer
Multi-Channel Service Delivery
Insurance "Quick Quote" Composite Business Application
Policy-Based, Dynamic Customization of Business Functionality
Dynamic Service Selection
Auto LOB
Home LOB
Specialty LOB
LOB Rating System 1
LOB Rating System 2
Other Systems
Re-Insurer
Real-time Access to Back-end Operational Capabilities

Figure 10. The CBA approach combines simple process logic with dynamic customization to handle diverse channels and endpoints. Source: IBM

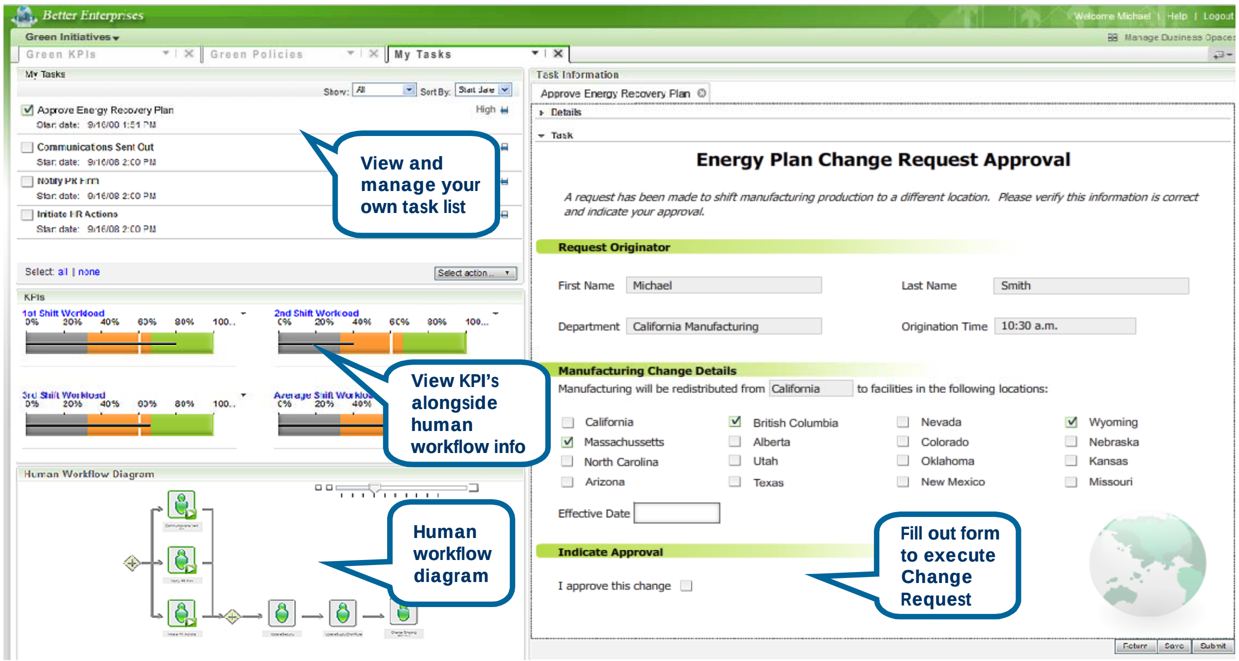
WebSphere Business Services Fabric business service policies are maintained as metadata in the Business Services Store, which also stores metadata describing business services and subscribers. All of this metadata is structured based on a business services model, which WebSphere Business Services Fabric calls an *ontology*. The ontology defines standardized terminology used in business service policies, business services, and subscriptions. Typically, these ontologies are based on industry-standard content imported into the WebSphere Business Services Fabric environment.

Business Space

The preceding discussion presupposes that all the required service endpoints have been created and deployed and are available for composition in business services and CBAs. With WebSphere Dynamic Process Edition, IBM has introduced a new component, called Business Space powered by WebSphere, supporting a business driven methodology that lets business users participate in, modify, and monitor their processes through an integrated, customizable web environment.

Business Space is a common component that ships with the WebSphere BPM family of products. Business Space's Web 2.0 architecture allows business and IT users to compose their own web workspaces – "business spaces" – from user interface components called *widgets* provided by BPM Suite process content. These widgets can extend their business space environments by creating mashups which access the BPM data sources such as core, internal systems or third party applications using the REST API. Each product in WebSphere Dynamic Process Edition provides a set of widgets out of the box, and other cross-product templates composed of widgets from various offerings within the IBM BPM Suite. Business users can customize their own workspaces without dependence on IT by using the palette of widgets that are available to them. In addition, prebuilt templates are provided that allow business users to rapidly create new spaces with minimal dependence eon IT.

For example, Figure 11 illustrates cross-component template combining a workflow task list, a KPI dashboard widget monitoring task performance, a widget diagramming the human workflow from Process Server, and a task form requesting a change to a business service policy. Moreover, the policy change modeled in that task was defined by another widget interacting with WebSphere Business Services Fabric. An important benefit of Business Space is harmonizing the business user experience across diverse tools and process content in the BPM Suite.


Better Enterprises
Welcome Michael | Help | Logout
Green Initiatives
Manage Business Spaces
Green KPIs
Green Policies
My Tasks
View and manage your own task list
View KPI's alongside human workflow info
Human workflow diagram
Fill out form to execute Change Request

My Tasks

Show: All Sort By: Start date

☑ Approve Energy Recovery Plan — High
Start date: 9/16/08 1:51 PM

☐ Communications Sent Out
Start date: 9/16/08 2:00 PM

☐ Notify PR Firm
Start date: 9/16/08 2:00 PM

☐ Initiate HR Actions
Start date: 9/16/08 2:00 PM

Select: all | none — Select action...

KPIs

1st Shift Workload 0% 20% 40% 60% 80% 100...

2nd Shift Workload 0% 20% 40% 60% 80% 100...

3rd Shift Workload 0% 20% 40% 60% 80% 100...

Average Shift Workload 0% 20% 40%

Human Workflow Diagram

Task Information

Approve Energy Recovery Plan

Details

Task

Energy Plan Change Request Approval

A request has been made to shift manufacturing production to a different location. Please verify this information is correct and indicate your approval.

Request Originator

First Name: Michael — Last Name: Smith

Department: California Manufacturing — Origination Time: 10:30 a.m.

Manufacturing Change Details

Manufacturing will be redistributed from California to facilities in the following locations:

☐ California	☑ British Columbia	☐ Nevada	☑ Wyoming
☑ Massachussetts	☐ Alberta	☐ Colorado	☐ Nebraska
☐ North Carolina	☐ Utah	☐ Oklahoma	☐ Kansas
☐ Arizona	☐ Texas	☐ New Mexico	☐ Missouri

Effective Date

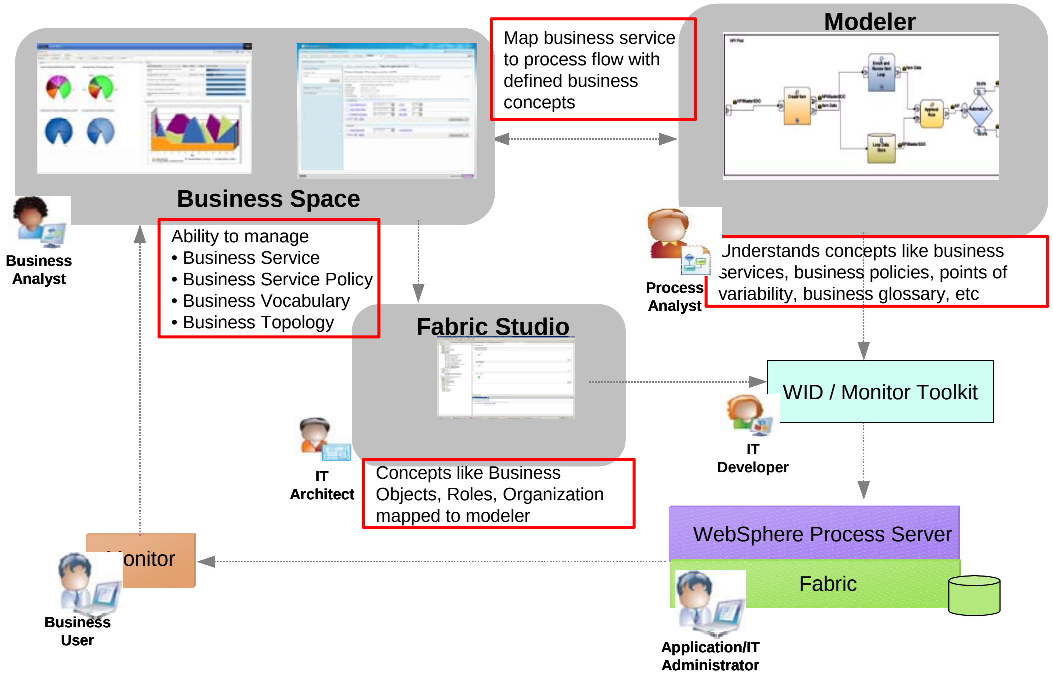
Indicate Approval

I approve this change ☐

Return | Save | Submit

Figure 11. Business Space provides cross-component templates that aid in modeling, monitoring, and participating in business processes. Source: IBM

Figure 12 illustrates how Business Space links the various roles and tools employed in a business-driven BPM methodology with WebSphere Dynamic Process Edition. The capabilities listed in the red boxes are based on new Business Space widgets planned for version 6.2, to be released in December 2008, and beyond.



Map business service to process flow with defined business concepts

Ability to manage
- Business Service
- Business Service Policy
- Business Vocabulary
- Business Topology

Understands concepts like business services, business policies, points of variability, business glossary, etc

Concepts like Business Objects, Roles, Organization mapped to modeler

Figure 12. Roles and tools in modeling dynamic business processes. Source: IBM

Modeling Dynamic Processes

Modeling a dynamic process begins with business analysts using Business Space to define business vocabularies, business services, and business service policies. In parallel, a process analyst models the process model in WebSphere Business Modeler Advanced. These new Business Space capabilities allow mapping between business service metadata and the process flow in the modeling tool with defined business concepts. Other widgets will allow mapping of concepts like business objects, roles, and organizations to be mapped from Fabric Studio to Modeler.

Identifying Points of Variability

The key difference between modeling for dynamic processes and traditional process modeling is the need to identify "points of variability" in the process, so that the process model can be expressed as a linear flow of generalized business services, what IBM calls an *abstract business process*, which are configured dynamically at runtime to implement the "variable" details. For example, in a loan origination process, points of variability might include the loan amount, customer type, bank identifier, regular vs non-business hours, customer rating, and service provider cost. WebSphere Business Modeler Advanced uses the traditional flowcharting paradigm in which such variability is expressed by branches in the flow diagram (Figure 13, left). The business analyst and process analyst must work together to map these conventional process diagrams into abstract process and business service models (Figure 13, right).

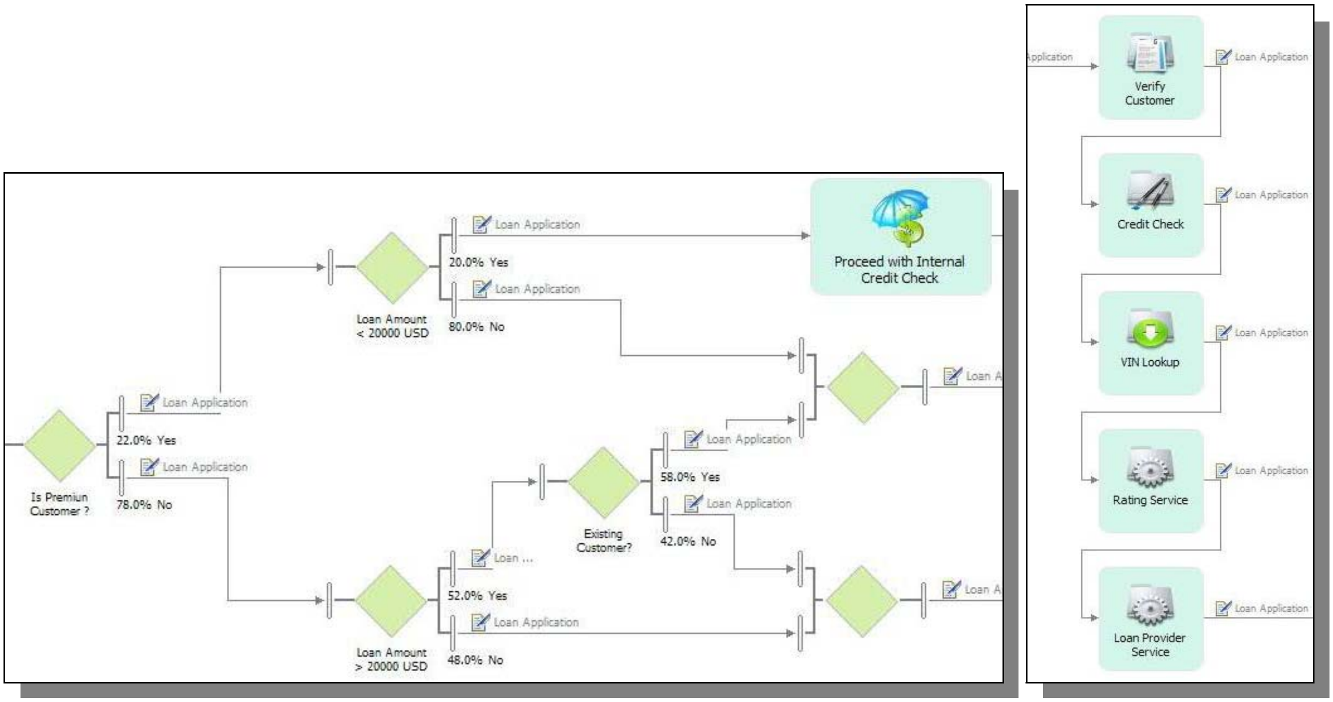
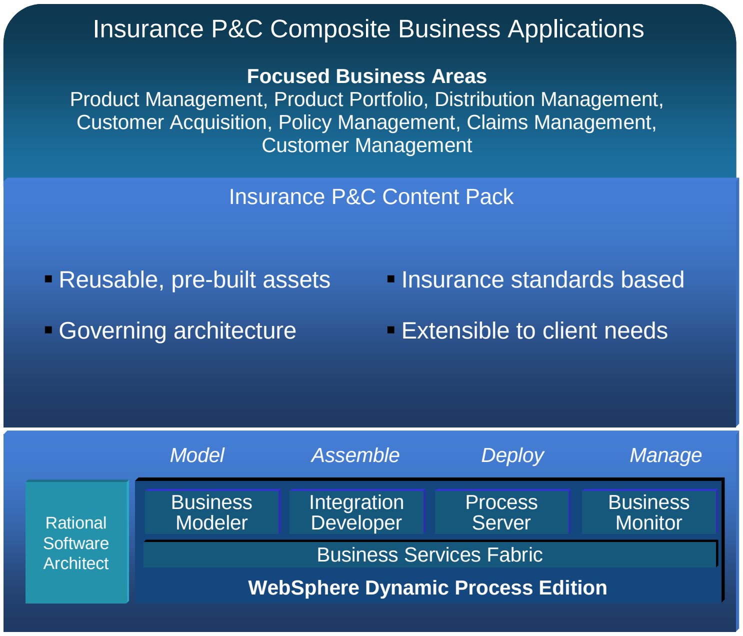


Figure 13. Process logic in WebSphere Business Modeler with the conventional approach (left) vs the CBA approach (right). Source: IBM

Industry Content Packs

Often, the starting point for all this is importing industry-standard processes, services, transaction functions, business objects, and other building blocks from IBM's Industry Content Packs for WebSphere Business Services Fabric. These content packs, currently available for Property and Casualty Insurance (Figure 14), Healthcare Payor, Banking Payments, and Telecom Operations, provide prebuilt SOA assets that accelerate BPM solution development consistent with vertical industry standards and best practices.


Insurance P&C Composite Business Applications
Focused Business Areas
Product Management, Product Portfolio, Distribution Management, Customer Acquisition, Policy Management, Claims Management, Customer Management
Insurance P&C Content Pack
Reusable, pre-built assets
Insurance standards based
Governing architecture
Extensible to client needs
Model
Assemble
Deploy
Manage
Rational Software Architect
Business Modeler
Integration Developer
Process Server
Business Monitor
Business Services Fabric
WebSphere Dynamic Process Edition

Available through IBM GBS and SI/ISV business partners

Applicable across insurance P&C processes

Content pack assets are pre-certified on IBM SOA platforms and methodology

Telecom Operations ◆ Banking Payments ◆ Healthcare Payor ◆ Insurance Property & Casualty

Figure 14. Industry content packs and CBAs accelerate BPM solution development. Source: IBM

Content pack components are interoperable and share a common reference architecture, important to credible governance of SOA assets. Also, these assets are not just on the IT side but focus on business-IT alignment. At the highest level, *Capability and Process Maps* decompose the business into industry-standard capabilities and processes. These are mapped to services based on industry best practices, and can be extended for each customer. The advantage of the maps is that business can see how SOA solutions enable reuse and consistency across the business.

Once the business has been decomposed into capabilities and processes, the next step is to define the business functions, called *Business Service Templates*, that leverage existing IT assets to create new business processes. The definition and granularity of the Business Service Templates is based on the Capability and Process Maps, common industry applications, and SOA principles. Next is defining the *Service Interfaces* that interoperate with existing IT systems. For example, the Insurance P&C Service Interfaces are based on IBM's IAA Interface Design Model and best practices in the insurance industry. Also provided are common transaction functions like bulking, de-bulking, validation, error identification, and transformation that can be reused across multiple solutions. Insurance P&C *Common Services* are based on ACORD Messaging Model, HR-XML, and industry best practices.

In addition to functionality leveraged from existing IT assets, there may be a need to create new operational data stores or physical data models. For this, the content packs provide a conceptual domain model called a *Business Object Model*. In Insurance P&C this is derived using ACORD. SOA solutions also require business metadata defining roles, channels, conditions, policies, rules, events, etc. The *Business Glossary* ensures reuse and consistency of insurance business terms using a common vocabulary that is extensible by customers. The Insurance P&C business glossary is derived using ACORD Messaging Model, eEG7 Data Model and IAA Business Model.

Finally, content packs provide various documents that aid consumption and extension of the content pack assets. These include a Reference Architecture guide, a How-To guide, a Developer's guide and an Insurance Reference Implementation.

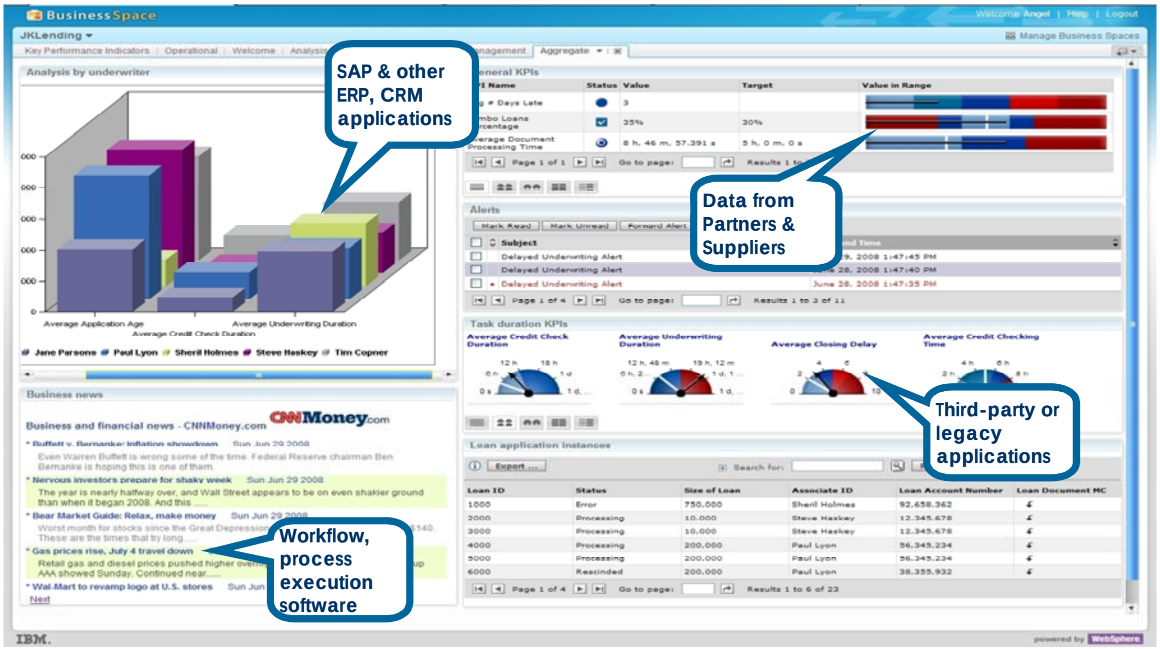
Content pack assets are pre-certified on IBM SOA platforms and extensible to customer needs. In addition, industry Composite Business Services, a collection of prebuilt business applications, services, and processes that can quickly integrate business both internally and with trading partners, are available through IBM Global Business Services and various channel partners.

Modeling in Fabric Studio

Business services and business service policies are modeled by IT architects using Fabric Studio. A *business service policy* is a set of assertions representing requirements, constraints, or capabilities for a business service given a particular combination of context and content. *Roles* are typed associations between a user and an organization, typically selected from an extensible taxonomy of role types. A *channel* is the mechanism through which messages are sent to business services. A business service can be provisioned to one or more channels. *Assertions* are characteristics that describe the capabilities of an endpoint in five dimensions: Performance, Reliability, Interoperability, Security, and Manageability. For example, if a service implementation has a maximum transaction time of 500 ms, a maximum transaction time assertion can be added to the endpoint to declare this performance capability. The business service policy says if a business service is executed in a particular context and with particular content (e.g. combination of role and channel), then require an endpoint with the specified assertion. The policy is enforced at runtime by dynamic assembly in WebSphere Process Server. Also, through Business Space, authorized business users can modify business service policies at runtime.

Monitoring Dynamic Processes

The ability to model and change dynamic processes easily is only one advantage of WebSphere Dynamic Process Edition. Another is the ability to monitor business performance in user-configurable mashups using the included WebSphere Business Monitor.



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1000	Error	750,000	Sheril Holmes	92,658,362	✓
2000	Processing	10,000	Steve Haskey	12,345,678	✓
3000	Processing	10,000	Steve Haskey	12,345,678	✓
4000	Processing	200,000	Paul Lyon	56,345,234	✓
5000	Processing	200,000	Paul Lyon	56,345,234	✓
6000	Rescinded	200,000	Paul Lyon	38,355,932	✓

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Figure 15. WebSphere Business Monitor correlates and aggregates events from both the process engine and external systems. Source: IBM

WebSphere Business Monitor provides real-time visibility into business performance, monitoring active and completed processes, detecting problems in their execution and diagnosing their root cause, and reporting on business operations to enable iterative improvement. Monitor collects, correlates, and aggregates *business events*, not only snapshots of process instance data generated by WebSphere Process Server, the BPM process engine, but also events generated by Fabric, the FileNet BPM process engine, WebSphere Message Broker, WebSphere Business Events – IBM's new complex event processing engine, and external business systems as well.

To simplify KPI modeling, IBM provides predefined business measure templates in WebSphere Business Modeler to specify instance metrics, and base aggregate metrics and key performance indicators on those predefined business measures. Monitoring information can be directly executed on a WebSphere Business Monitor server without needing to implement the low-level technical details in the Monitor development toolkit. It is simply exported to WID along with the process model. The business measures are then directly tied to the BPEL process implementation, and the events and other monitoring elements are created automatically.

The Monitor infrastructure captures events from a wide variety of sources, and computes aggregated measures such as counts, totals, and averages in real time, which can be displayed on the dashboard. Measures can be sliced and diced for analytical reporting to provide business intelligence and insight. And for KPIs with a defined target range, it can trigger user-defined actions, such as alerts, notifications, or launching a new business process.

Users can access their monitoring dashboards through a variety of interfaces, including Business Space, WebSphere Portal, mobile devices, within Excel and directly from the desktop. In v6.2, customers will be able to access BAM information in other collaboration environments like Lotus Sametime and Lotus Notes. Monitor also provides access to the data via REST APIs enabling customers to embed information in other applications and locations as well.

WebSphere Business Monitor provides the following dashboard widgets:

- KPIs: Displays details of key performance indicators (KPIs), such as a KPI value relative to the defined ranges and the target, if applicable, and the status.
- Alerts: Displays alerts that notify users of defined situations occurring at runtime.
- Diagrams: Displays KPIs and relevant information on diagrams including process diagrams/maps and so on.
- Human Tasks: Displays all available human tasks and can be used to perform actions on them.
- Instances: Displays the available the active process instances including additional information for context.

The optional Alphablox add-on provides a multidimensional view of performance data based on OLAP cubes, along with reporting along a time axis for trend analysis.

In v6.2, WB Monitor will provide predictive monitoring to predict the value of KPIs in future time periods. Thus customers will be able to anticipate any business situations to manage their businesses proactively. This will also be augmented by WebSphere Business Events, which will be able to capture a sequence of alerts from WB Monitor and detect patterns in the alerts which normally might have gone undetected. Also in v6.2, Fabric will be able to access the Monitor KPIs to obtain a real-time view of the business performance and modify processes and thus be more responsive.

Monitor dashboard charts, tables, and alerts can be mashed up with process worklists, process diagrams, and third party widgets in Business Space (Figure 16), and users can configure their own Business Spaces by dragging from the widget palette. The flexibility of viewing performance data in a variety of user-defined contexts is a strength of the IBM BPM Suite.

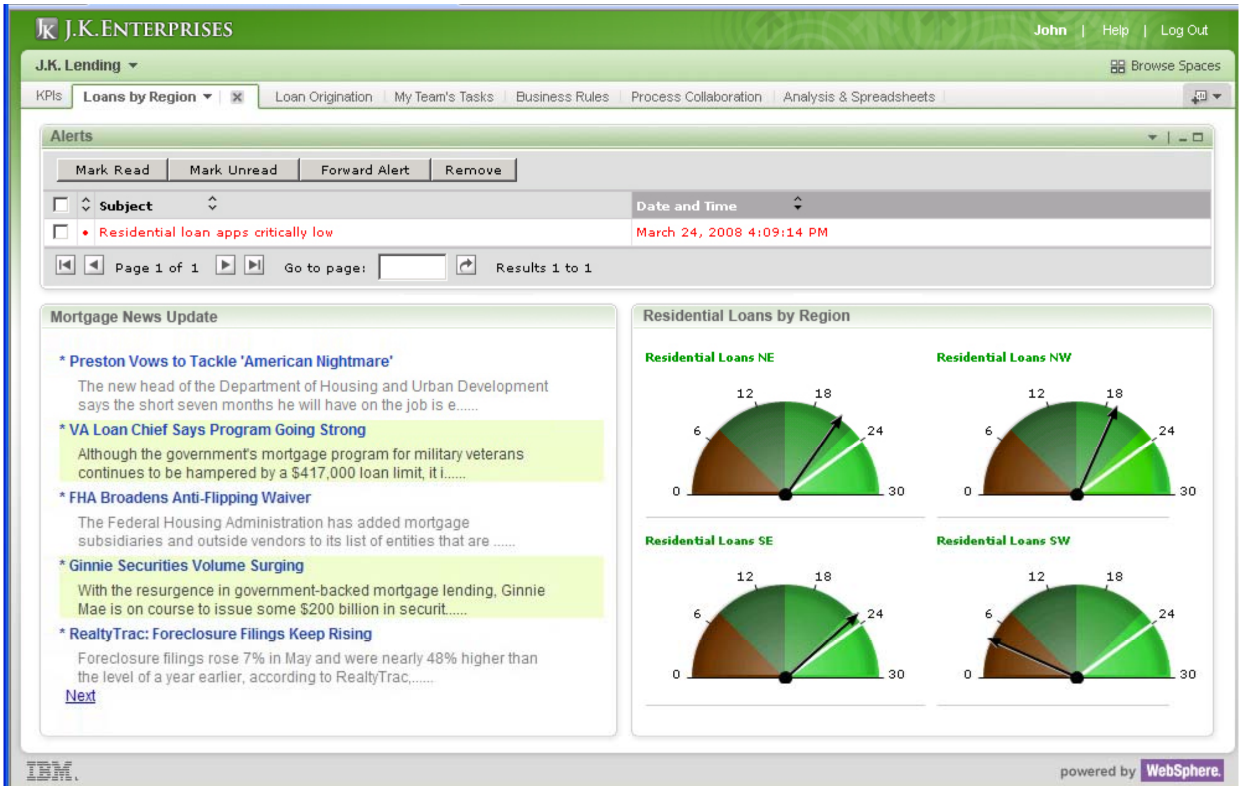

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Figure 16. End users can configure their own monitoring Business Spaces by mashing up dashboard widgets. Source: IBM

The Bottom Line

In WebSphere Dynamic Process Edition, IBM is looking past one-off BPM projects and rethinking what a BPM Suite looks like in a large-scale SOA environment. The suite can still be used in the conventional BPM lifecycle, where process models created by business in WebSphere Business Modeler Advanced describe activity flow logic that can be imported directly into the BPEL implementation environment, and the tooling continues to advance there, giving business analysts and architects more capability in Modeler, requiring less development in WID.

Where WebSphere Dynamic Process Edition stands out, however, is extending BPM to large-scale implementations. In these process solutions, the mind-numbing combinations of customer types, communications channels, geographic dependencies, calendar dependencies – not to mention details in the process request content itself – begin to impose a level of variability that defeats the agility of conventional activity flow modeling. To handle that level of complexity, IBM is enabling customers to rethink process modeling and re-conceptualize flow as a simple sequence of very coarse-grained – often industry-standard – business services, each configurable based on policies and rules that express multiple dimensions of variability. At the heart of WebSphere Dynamic Process Edition, the Business Services Fabric provides both the modeling framework for expressing that variability as business service metadata and the runtime infrastructure for configuring and executing each business service on the fly.

Going from traditional process modeling to the new style demanded by WebSphere Business Services Fabric is not a simple mechanical exercise. The methodologies and tooling for this are still evolving, and we should expect it to get easier with each new release of the BPM Suite. Business Space will play an important role, by providing business analysts a consistent browser-based modeling environment that blurs distinctions between WebSphere Business Modeler Advanced and WebSphere Business Services

Fabric Studio, along with a user-configurable dashboard environment for managing process solutions in operation.

But in the new paradigm, process models become much simpler. In fact, they strongly resemble the high-level models described by vertical industry frameworks adopted by P&C insurance, healthcare, telecom, and banking. This allows Dynamic Process Edition customers to *buy* industry-standard process content rather than build it all from scratch, saving time and money. These standard flows just describe generic processes. The company-specific details are captured not in a web of activity flow logic but in metadata and business policies that are more easy to reuse across applications, centrally govern and maintain, and extend when requirements change. The new architecture enhances also business-IT alignment and collaboration, since the dimensions of variability and the business service policies governing them are defined by business yet directly control executable implementation.

In a market landscape where most BPMS vendors have optimized their tools for relatively simple business processes, IBM has gone in a new direction. WebSphere Dynamic Process Edition is optimized for BPM in a mature SOA environment, where the complexity of the business logic – and the sheer number of service implementations required – creates barriers to governance, reuse, and agility. As you begin to move BPM into areas that affect the company’s bottom line, you need to ask yourself if these are “dynamic” as IBM has defined the term. If they are, WebSphere Dynamic Process Edition may be just what you need.

Bruce Silver