Delivering business-to-business process collaboration with WebSphere Partner Agreement Manager.

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Overview

The changing makeup of today's global marketplace is influencing the collaborative nature of business relationships. Increasingly, you need to work closely with your suppliers and trading partners to deliver products and services to your customers. And to effectively do so, you're outsourcing services that you had previously handled for yourself — allowing you to focus attention on your core business and business processes.

However, this strategy also increases the number and variety of trading partners you work with. To maximize the effectiveness of collaborating across organizations, you need to concentrate on close association with strategic trading partners. For example, having a single-source vendor focus on your design and manufacturing needs helps the trading partner concentrate on core strengths, acting faster and more efficiently. The result? A new kind of industrial environment — where a number of specialized companies team together to deliver superior customer service and value.

But not having a single point of ownership and control of the collaborative processes required to provide these services raises important questions. How do you execute processes between companies when organizations are independent entities? When trading partners have a variety of systems, technologies and IT skill sets, speak different languages and reside in different time zones and geographies. How can you ensure that transactions are being handled in a secure environment? How do you manage business processes that extend beyond your organization to those of your trading partners and customers?

In this network of collaborating companies, teamwork coupled with a new kind of infrastructure needs to be put in place. Then, all participating companies can integrate and automate the overall business processes to deliver goods and services to the customer. IBM addresses this business-to-business (B2B) integration challenge. IBM WebSphere® Partner Agreement Manager helps you automate the whole range of interaction with suppliers, trading partners, customers, trading hubs and private exchanges to improve supply-chain efficiency and effectiveness. Without disrupting existing investments in your or your trading partners' information technology, you can quickly and easily integrate your systems with your key trading partners' systems and grow your B2B strategy.

Introduction

WebSphere Partner Agreement Manager enables you to manage the business process boundary between internal and external participants. Electronic messages can be received and processed at a systems-to-systems level to initiate the appropriate internal business processes that may include manual operations. Suppliers, trading partners and customers can then be updated electronically. And business analysts can monitor business process activity and update cooperating processes to enhance business flexibility. So you can react quickly to business changes — like new competitive offerings or changes in customer behavior.

Why B2B integration?

B2B integration involves synchronizing and automating key business activities among diverse companies, each with unique and changing business operations. IT infrastructures and applications are different, often spanning multiple geographies and languages. With B2B integration, companies can seamlessly manage multiple software programs, systems, databases and user activities, and improve the way companies come together to do business.

The changing nature of business relationships

Industry trends drive the need for B2B integration. To be successful in today's global marketplace, companies need to team, to optimize their relationships with their trading partners, to establish agreements with those trading partners and to work with the ever-increasing speed of information exchange. Companies have moved away from vertical integration to focus more on core competencies, outsourcing everything else. These companies look to outside vendors to handle functions, such as IT and infrastructure support, manufacturing and logistics and shipping, as well as sales and distribution. They must work closely with other companies like internal divisions of any large organization. Outsourcing means companies can develop tighter relationships with a few key suppliers and trading partners for a given product or service. This close collaboration means a supplier may be directly involved in your product design effort to shorten product development cycles. Combining subcontract manufacturers with internal manufacturing capacity can reduce cost and increase flexibility of global manufacturing. And allowing third parties to be entirely responsible for product distribution can increase sales.

Supply chains have moved from the build-to-stock model of a high-volume, low-product mix of products and services to a build-to-order model of low-volume, high-product mix, largely customized offerings of products and services. Your customers want personalized products and services. To meet the demand, you have to move from large production lots of few products to many small lots with a wide variety of customized products. To make this model work, you need to establish an agreement about how you work together. An agreement that maximizes the benefits of a tighter supplier-buyer relationship, and delivers superior service to the end customer.

By providing customers with a greater variety of customized offerings, you'll receive smaller, more frequent, diverse orders. Using technology and the global reach of the Internet to integrate typical business processes, you can provide your value chain with what it needs to make relationships mutually successful. By working together as one, you can increase the type, quantity and speed of information exchanged about the products and services you share.
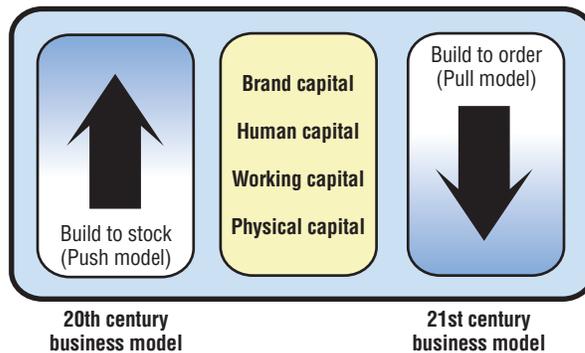
B2B supply chains have moved from a build-to-stock business model to a build-to-order model.

A strategic approach

The most successful companies are now strategic in their approach to what they produce and what they outsource to subcontractors. Even car manufacturers have moved toward outsourcing for some of their manufacturing tasks. Greater profits can be gained in after-sales service and financing. While car manufacturers continue to sell cars, the actual manufacturing process can be outsourced. To keep pace with this move toward more trading partner-centered business strategies, companies need solutions that effectively support the implementation and adoption of the new strategy.

Existing modes of communication and integration among companies can't adequately support new models. The slow motion of arms-length relationships can't sustain a build-to-order supply chain. In the past, IT solutions were built to meet the needs of static, make-and-sell supply-chain models and it was difficult for companies to implement new strategies. Largely manual methods of communication, such as fax, e-mail and phone calls, are inadequate for the lightning-fast pace of today's B2B transactions as well. You need realtime, tightly integrated, synchronized, collaborative tools to support successful business relationships. B2B integration delivers a competitive and strategic advantage. Adapting a B2B integration strategy lets you realize significant and immediate return on your investment (ROI). And achieving B2B integration results in greater satisfaction for your end customers.

Focus on visibility — collaborative business environment

Companies must implement solutions to support a near-realtime collaborative business environment where events move a lot faster. That means automating the detection of critical events to shrink response time. Taking a systems approach to B2B relationships — including the sharing of realtime information up and down the supply chain — to optimize and improve performance of the whole system. Recognizing that the information you communicate to a customer or trading partner is as valuable as the product or service delivered. Making information visible outside the four walls of an enterprise is a critical part of working in a global, multivendor, build-to-order business environment. B2B integration is about automating and integrating business processes and enhancing visibility across your supply chain to allocate resources that produce what your customer needs rather than narrowly focus on high-volume production.

B2B integration challenges

Cross-company collaboration is integrating and automating shared business processes. B2B integration solutions that support automation of shared business processes are the best fit for collaborative B2B relationships. Interactions with people, business processes and systems outside your company require capabilities unique to B2B integration. These concerns become more and more important as your trading community grows in number:

- *Communication security and reliability. Before any interaction across systems can occur, reliable, secure communication pathways must exist, especially when the pathway includes an open network, such as the Internet.*
- *Trading partner heterogeneity. Different businesses do things differently. Internal processes are unique to the organizations that deploy them, and these organizations have different skills and use their own mix of applications and technologies.*
- *System heterogeneity. The information systems used at different organizations in the extended enterprise include various applications, like enterprise resource planning (ERP) suites, a variety of middleware technologies. Legacy business applications, product data management, document management and Web-based intranet applications. B2B integration solutions must interoperate within a wide variety of systems.*

- *Data and information heterogeneity. Different applications and users represent information in different ways or use different kinds of information for the same task. Bridging the associated syntactic and semantic gaps in information can require a mixture of transformation capabilities and neutral information representations.*
- *Dynamic business and technology environment. Besides heterogeneity, B2B integration is characterized by frequent change. At any organization, business processes and the internal systems environment can change often. Interorganizational agreements are also subject to ongoing revision. Coordinating multiple changes across multiple organizations creates the need for comprehensive update and version management solutions.*
- *Robust scalability. B2B integration must be able to start small and show proof of concept and ROI with selected key trading partners. As B2B integration progresses, the solutions need to meet requirements of high-volume production environments where hundreds or thousands of trading partners may be integrated.*

B2B integration provides a more comprehensive and flexible solution than electronic data exchange (EDI) solutions of the past. Unlike enterprise application integration (EAI) or application-to-application integration solutions used primarily inside the enterprise, B2B integration solutions are much broader and require more than using Web browsers and Web applications to coordinate information.

B2B integration with shared processes
Most strategic, long-standing business relationships are conversational. When a company sends an order to a supplier, it wants to know that the order was received, when it will be filled, what its status is and if changes initiated by either party are understood. Shared process solutions are designed to integrate multistep, multicompany processes across the Internet. These solutions support process control and agreement as a task separate from the implementation of internal application integration. At the same time, the shared process architecture provides direct visibility of the B2B process interaction from trading partner integration through the public process to the underlying integration of internal core applications.

The shared-process approach leads to two kinds of processes or business tasks that B2B integration can address. The trading partner agreement itself, or the public process. And how the business process is implemented by each partner – the private process. In direct support of organizational autonomy, this concept allows trading partner organizations to model and change their internal processes independent of the shared public process. This approach offers maximum flexibility to multiple trading partners for interaction based on using common shared business processes and customization for competitive advantage.

Dynamic e-business is e-business with new flexibility, unparalleled connectivity and adaptability to changes in global marketplaces fast. All without a huge investment in time, money or resources. The flexibility of shared processes can even increase when using Web services to:

- *Advertise and sell a variety of services over the Internet to any other company for use in any kind of B2B integration scenario*
- *Encapsulate business tasks using the business systems you already have in place, offering these business tasks to any trading partners as a new service*

Web services – self-contained, modular business applications based on open Internet standards – can be mixed and matched to create innovative applications, business processes and value chains.

Why is process-based B2B a best fit?

Shared process solutions best meet the requirements of external integration. When you use predefined processes, business rules are highly visible and transparent. You understand what happens when and why. You can change business rules easily to adapt the execution of the process – a major concern in today's fast-changing business environment. Many process changes do not affect the underlying IT implementation, so line-of-business staff can implement these process adaptations. Process-based B2B solutions provide:

- *Flexible information representation capabilities, based on XML*
- *Business agility to easily and quickly change process execution*

- *Exception management for automating frequently executed processes, including the ability to manage exceptions manually*
- *Separation and synchronization of external and internal processes so that public processes define the external conversation model and integrate multiple trading partners within a single process, while private processes describe a trading partner's implementation of its business task*
- *Robust communication and security capabilities, suitable to independent global organizations and the use of open networks, such as the Internet*
- *Communication through multiple options, including XML, HTTP and EDI*
- *Externalization of shared processes with Web services, enabling other companies to reuse Web services in their B2B integration scenarios*

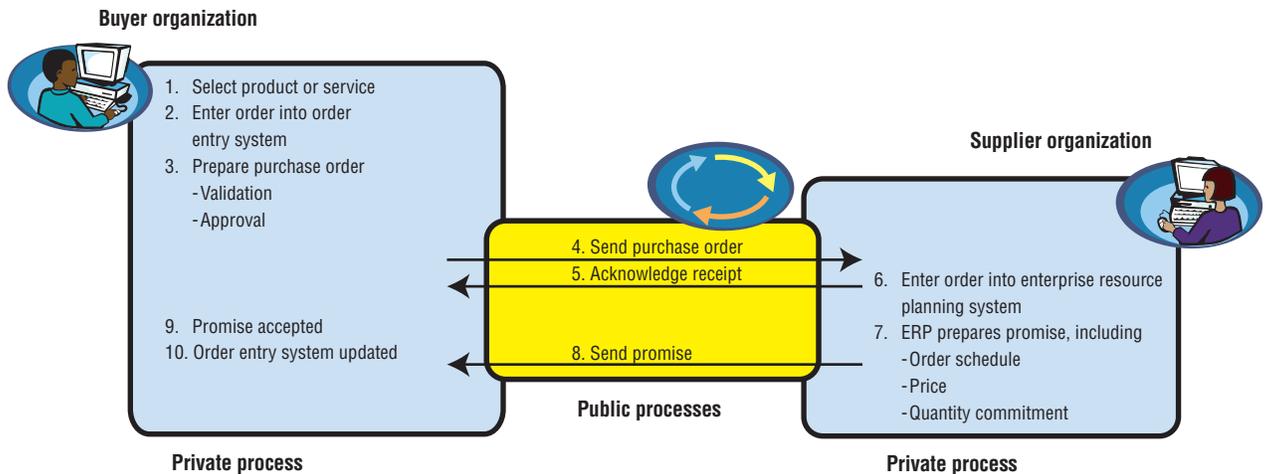**B2B integration with IBM WebSphere Partner Agreement Manager**

A process-based approach provides the best fit for today's B2B integration needs. WebSphere Partner Agreement Manager uses the concept of public and private processes for B2B integration. Two or more trading partners model their agreement about how to do business in a public process. This public process describes the responsibilities of each trading partner to fulfill the business task. All trading partners in this collaboration can see the public process definitions; however, how they implement their respective parts in private processes and by individual decision is not visible to others. Trading partner teamwork is defined in the public process, while private tasks are defined in private processes.
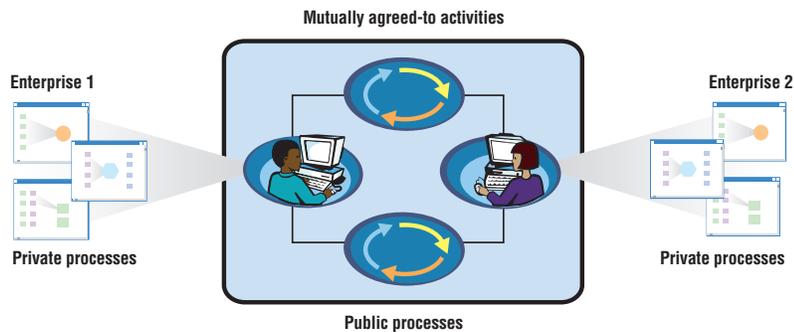
WebSphere Partner Agreement Manager addresses B2B integration needs by allowing trading partners to agree on how to do business in public processes.

The public process describes the agreement between trading partners about how a purchase order is processed. The supplying company sends an acknowledgment of the purchase order and when the order should be delivered. The private process then describes how the purchase order is processed within the supplying company. The buying organization doesn't need to know how it's processed by the supplier as long as the supplier delivers on time.

The private process screens suppliers' core business process knowledge from the buying company. It also enables connection of existing core business processes and reuse of existing investments in B2B scenarios. These private core business processes can be implemented directly as WebSphere Partner Agreement Manager private processes. Or implemented with other technology, such as IBM MQSeries® Workflow, and invoked by WebSphere Partner Agreement Manager.

Buyer organization

1. Select product or service
2. Enter order into order entry system
3. Prepare purchase order
   - Validation
   - Approval

9. Promise accepted
10. Order entry system updated

Supplier organization

4. Send purchase order
5. Acknowledge receipt

8. Send promise

6. Enter order into enterprise resource planning system
7. ERP prepares promise, including
   - Order schedule
   - Price
   - Quantity commitment

Public processes

Private process

Private process

Sample purchase order

Simplify control of information, system components and process behaviors
Managing several information components, including trading partner profile information, data and process definitions, communication and security settings and user information, is even more important than managing hardware and software components. Change management — specifically, the issues involved with distributed (multiorganizational) change management — is a primary issue for B2B integration because of the frequency of change.
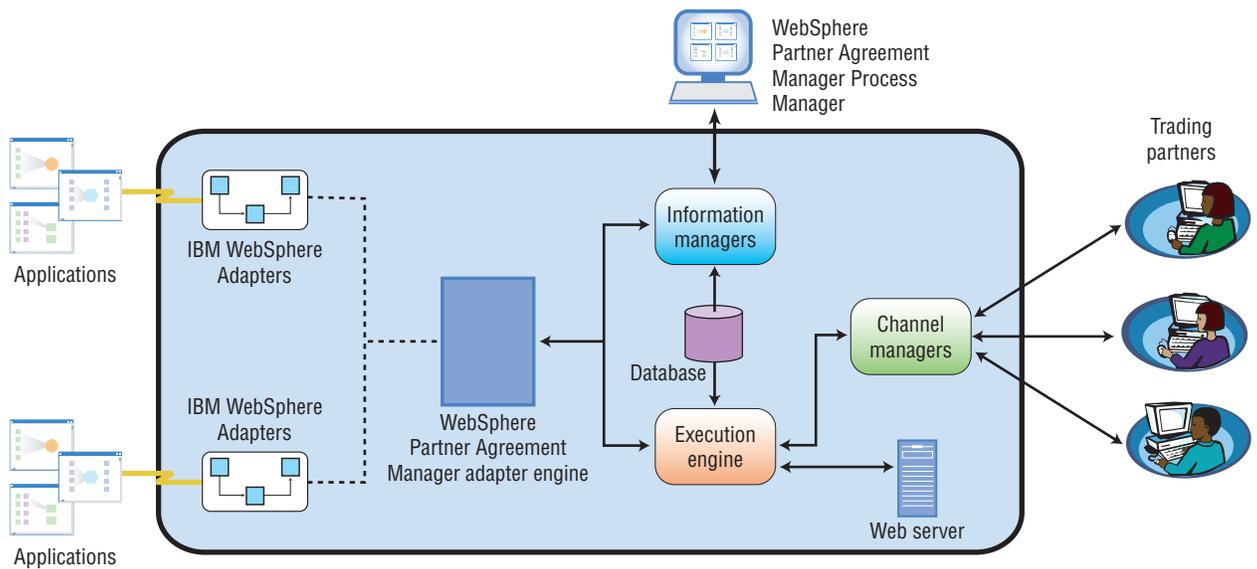
WebSphere Partner Agreement Manager common management framework

The WebSphere Partner Agreement Manager component is built on a common management framework that simplifies the control of information, system components and process behaviors. Access to management functionality is provided through the WebSphere Partner Agreement Manager client or through application program interfaces (APIs). Key functions supported by the framework include all components required for shared B2B processes.

Business process definition and business object definition managment
With business process definition and business object definition management, the process and information coordination provide the information-brokering and coordination function that is essential to B2B integration solutions. Communication with trading partners must be coordinated with internal information systems, including external processes, internal processes, data transformation and exception handling. WebSphere Partner Agreement Manager provides extensive data management facilities for process definitions (public and private) and business object definitions that include change or version management (distributed version management for public processes and associated business objects). Both business process and business object definitions are natively represented in XML. Also included are standard user management and access control functionality.

WebSphere Partner Agreement Manager framework
Through its trading partner management framework, WebSphere Partner Agreement Manager maintains a profile for every trading partner in a business process. Security information, such as certificates of authentication, needs to be exchanged with the other trading partners before a trading partner can join a business process. Communication information — host and port information and protocols — also needs to be configured.

Trading partner channel management for external communication

Trading partner channel management for external communication inside WebSphere Partner Agreement Manager maintains the multiplicity of external communication requirements and provides facilities for the installation, property and state management of channels. Individual channels can provide their own management functions for configuration and other purposes.

*Adapter management for internal communication*

Internal business applications, such as ERP, planning and order management, represent the primary sources and destinations for the information trading-partner exchange with trading-partner organizations.

WebSphere Partner Agreement Manager provides facilities for the installation and property and state management of adapters. Adapters expose application functionality in two ways, through:

- *Events that stream into the WebSphere Partner Agreement Manager process engine (and that can be used for process initiation)*
- *Operations that can be invoked by processes, individual adapters providing their management functions for configuration and other purposes*

WebSphere Partner Agreement Manager process engine

The WebSphere Partner Agreement Manager process engine is the heart of the WebSphere Partner Agreement Manager server, controlling the execution of processes running in that server. The process engine distinguishes two types of processes: external or public processes and internal or private processes.
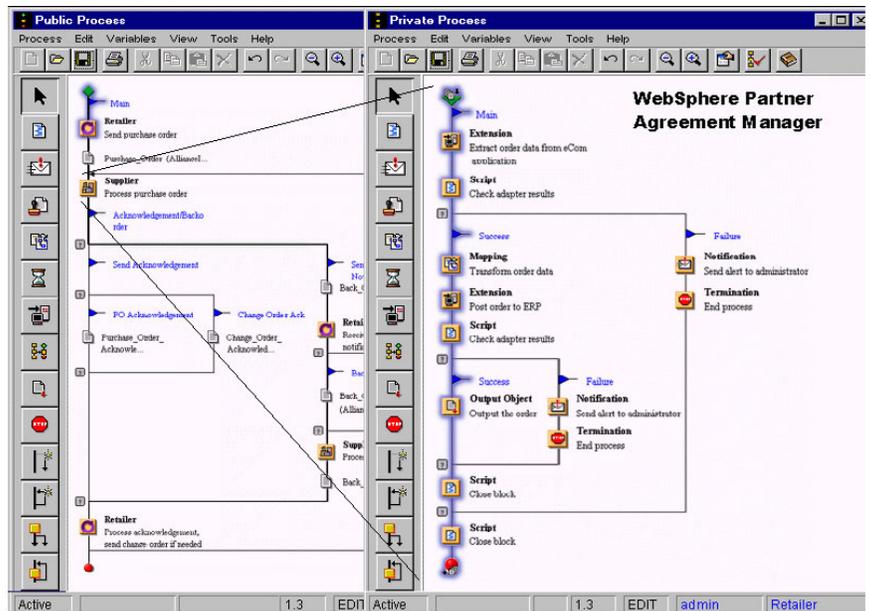
WebSphere Partner Agreement Manager public and private process maps

Public processes govern interactions that cross organizational boundaries, specifying a set of interdependent exchanges of messages. These public processes can involve arbitrary numbers of trading partners, and process logic can include simple sequencing of steps, multipath disjunctive or conjunctive branches and loops. The public processes can represent custom processes created by a WebSphere Partner Agreement Manager user or imported standards-based processes, such as RosettaNet PIP.
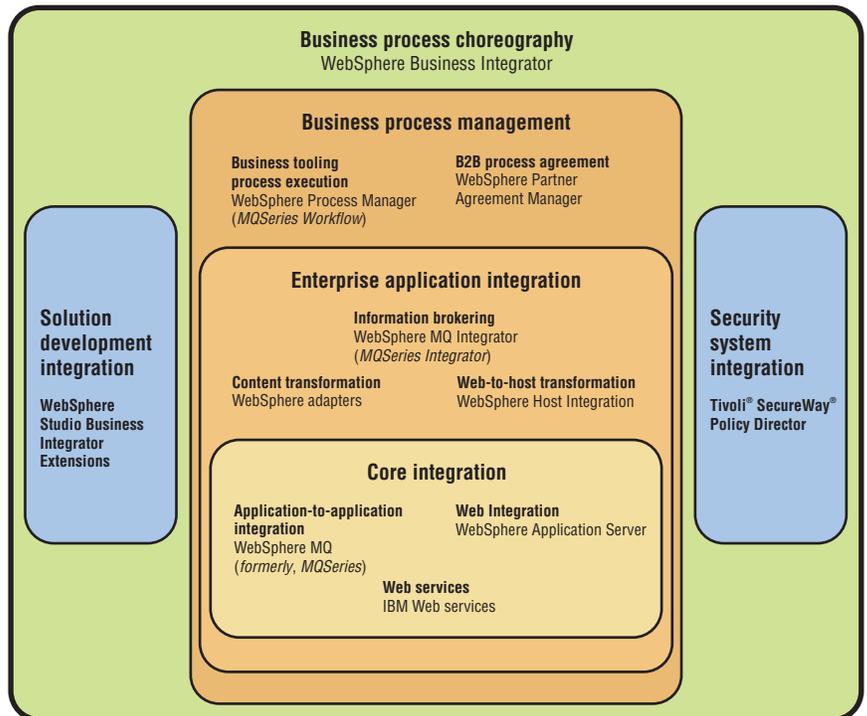
Private processes govern interactions that are local to an organization. Private processes specify a set of dependent actions of various types that include:

- *Calls to any application systems (through adapters, for example, to IBM MQSeries products in the WebSphere software family)*
- *Data transformation steps*
- *E-mail notifications*
- *Subprocess calls*
- *Script block executions*
- *User approval steps*

Private process logic can include branching (conjunctive and disjunctive) and loop structures. Private processes are the means by which a WebSphere Partner Agreement Manager implementation executes its associated steps in a public process. For a fully process-based integration of internal applications, WebSphere Partner Agreement Manager can invoke business processes implemented with IBM MQSeries Workflow. Likewise, MQSeries Workflow can invoke WebSphere Partner Agreement Manager processes. This approach allows you to implement a process-based solution in addition to EAI scenarios including trading partners.

Extend your business processes across enterprise boundaries

With WebSphere Partner Agreement Manager, you can collaborate easily with your trading partners and agree on public processes by concensus, extending the reach of your business processes across enterprise boundaries. Leveraging all the features of WebSphere Partner Agreement Manager and the MQSeries family of products, IBM WebSphere Business Integrator provides an end-to-end business integration environment. You can take advantage of common services, like installation, security, administration and patented technology, for distributed process control across business enterprises. With WebSphere Business Integrator, you can protect your investments in IBM technologies and skills. Build on what you have. Scale as needs dictate. And grow as your business objectives evolve.

Business process choreography
WebSphere Business Integrator

Business process management

Business tooling process execution
WebSphere Process Manager
(*MQSeries Workflow*)

B2B process agreement
WebSphere Partner Agreement Manager

Enterprise application integration

Information brokering
WebSphere MQ Integrator
(*MQSeries Integrator*)

Content transformation
WebSphere adapters

Web-to-host transformation
WebSphere Host Integration

Core integration

Application-to-application integration
WebSphere MQ
(*formerly, MQSeries*)

Web Integration
WebSphere Application Server

Web services
IBM Web services

Solution development integration

WebSphere Studio Business Integrator Extensions

Security system integration

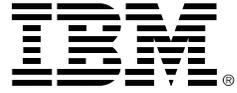**Tivoli® SecureWay® Policy Director**

BPM roadmap

Summary

The network of collaborating companies continues to grow. More and more companies are connecting and integrating with each other to do business. This new teamwork model helps improve overall business performance, but to get and stay out front, organizations today need to integrate their systems with those of their suppliers, trading partners, distributors and customers without disrupting existing investments in information technology. Organizations need to start quickly with selected trading partners to join the collaborative community. Then, they can grow their B2B strategy over time as new trading partners and processes become enabled for B2B integration.

IBM WebSphere Partner Agreement Manager is a comprehensive package designed for B2B integration. Unlike many products originally designed for EAI and then adapted for the B2B market, WebSphere Partner Agreement Manager is designed to enable rapid initial deployment with the flexibility to grow the trading partner community over time. And within the end-to-end business integration solution of IBM WebSphere Business Integrator, WebSphere Partner Agreement Manager offers the B2B gateway.

For more information

To learn more about how your business can use IBM WebSphere Partner Agreement Manager to help improve interactions with trading partners, suppliers and customers, contact your IBM marketing representative or IBM Business Partner or visit:

ibm.com/software/webservers/pam/

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