



**Increase agility and reduce risk by
governing services from identification
to consumption.**

Contents

2 Introduction

3 Customer challenges to managing the service lifecycle

5 Federated SOA repositories targeted to each lifecycle phase

7 The solution: IBM WebSphere Service Registry and Repository Advanced Lifecycle Edition software

15 Summary

Introduction

According to a seminal report from Forrester research, service lifecycle management is a major enabler of service-oriented architecture (SOA).^{*} In fact, recent surveys have indicated that well over 90 percent of respondents understand the importance of service lifecycle management, and the majority of them believe that SOA implementations will fail without it.

As shown in figure 1, the service lifecycle can be thought of as three interconnected phases—service development, service deployment and service management. Each phase is typically associated with different roles in the organization.

The key to a successful SOA implementation is managing and governing activities throughout the entire SOA lifecycle by ensuring that services conform to the needs of all the business's stakeholders. Ultimately, service lifecycle management allows the business to ensure that the process by which services are defined, created, tested, deployed, optimized and retired is manageable, repeatable and auditable. From development to operations, this process enables businesses to use collaboration and automation technologies to deliver benefits such as lower costs, greater business flexibility and improved IT productivity.

Highlights

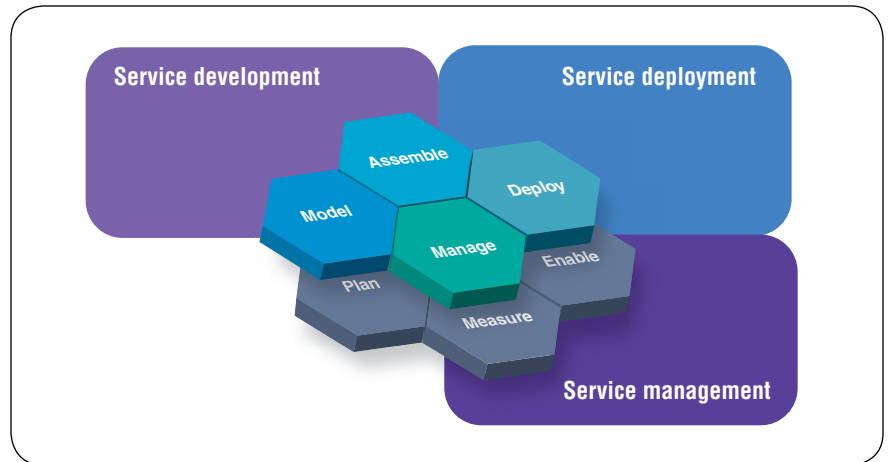


Figure 1: The SOA service lifecycle phases

Organizations can encourage faster and more trusted adoption of service orientation across the enterprise.

With an established service lifecycle management process, organizations are better able to encourage faster adoption of service orientation across the enterprise, and more quickly realize a return on investment (ROI).

Customer challenges to managing the service lifecycle

Let's explore some of the typical challenges customers face when adopting an SOA and see how service lifecycle management can help.

Too many redundant services and not enough reuse

An insurance company IT director worries about how to minimize the creation of multiple services that are just slightly different. His architect is worried about how she can encourage reuse of services across multiple teams. Ultimately, the quality of services is poor, the communication between teams isn't optimal, and users don't trust the services enough to reuse them. This is resulting in cost overruns, slow time to market of new or updated applications, and low staff productivity.

Highlights

When organizations try to adopt SOA, they often encounter overwhelming challenges, such as too many redundant services and not enough reuse; an inability to manage a growing number of services; a rigid architecture that makes it hard to respond to new business opportunities; high risk exposure from rogue services; and low customer satisfaction due to a lack of customization.

Unable to manage a growing number of services

To manage its growing number of services and notify users of changes, a large retailer uses spreadsheets, wikis and e-mail, but the system simply isn't working. The deployment manager wants to set up a scalable infrastructure to manage these services and ensure that automatic change notifications go out to all stakeholders. The retailer has to do something because the current situation isn't allowing the organization to realize ROI benefits from its SOA investment.

Inadequate agility to respond to new business opportunities

At a multinational financial institution, the IT director worries about hard-coded service endpoints making the company's IT systems rigid and susceptible to breakage with changes, requiring endless cycles of coding, testing and deployment. There isn't a common understanding of what's what, and it's difficult to find the right service quickly. As one would expect, service disruptions are frequent, causing customer dissatisfaction as well as costly and time-consuming maintenance.

High risk exposure from ungoverned services

The architect at a B2B wireless provider is concerned about eliminating exposure to violations of licensing requirements or intellectual property rights. She wants to make sure that services can be certified for originality.

Low customer satisfaction due to one-size-fits-all services

IT executives at the same wireless company want to provide customized services for their users' diverse needs. For this company, responding more rapidly can lead to increased business opportunities and improved customer loyalty.

Highlights

The registry and repository strategy from IBM focuses on establishing multiple federated SOA repositories that target specific user communities.

Federated SOA repositories targeted to each lifecycle phase

To address these needs and many others, IBM developed its registry and repository strategy. The approach focuses on establishing multiple federated SOA repositories, each targeting a specific user community, each supporting the tasks and processes that are important to that community, and each offering the content relevant to those tasks and communities. At the same time, these capabilities need to federate information about services across the lifecycle, making common content available in the appropriate form to an enterprise's different communities.

In addition to federating metadata between repositories, you must also provide governance. Governance is the establishment of:

- *Chains of responsibility to empower people.*
- *Measurement to gauge effectiveness.*
- *Policies to guide the organization to meet its goals.*
- *Control mechanisms to ensure compliance.*
- *Communication to keep all required parties informed.*

Basically, the governance needs are driven by the communities that each repository serves.

Highlights

To govern services from design to deployment, organizations should consider implementing a solution that provides a repository for services; automates management of the service lifecycle; captures relationships between services; and supports planning and assessment.

So, what is needed to govern the service lifecycle from design to deployment? As shown in figure 2, organizations should consider a highly scalable, reliable and enterprise-wide solution that:

- *Provides a repository to catalog and organize services.*
- *Automates the process of managing the service lifecycle.*
- *Captures relationships between services to support impact analysis.*
- *Supports planning and assessment with robust auditing and reporting capabilities.*

This solution should also integrate with existing SOA infrastructure components to federate service information.

Scalable, flexible, enterprise-level solution

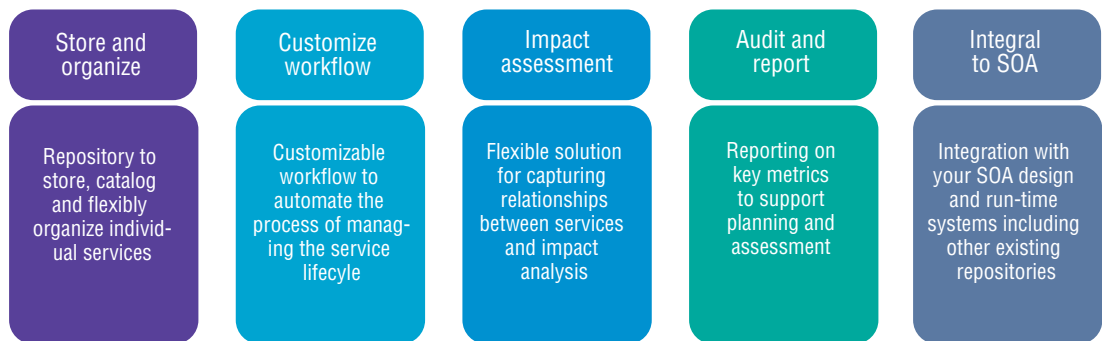


Figure 2: The solution to govern the service lifecycle from design to deployment

Highlights

IBM WebSphere Service Registry and Repository Advanced Lifecycle Edition software manages information useful for the run-time operation, management and development use of services.

The solution: IBM WebSphere Service Registry and Repository Advanced Lifecycle Edition software

To help customers effectively govern the lifecycle from service identification to service consumption, IBM offers a solution designed to cover the development and deployment phases of the service lifecycle.

A scalable, flexible, enterprise-level solution

IBM WebSphere® Service Registry and Repository Advanced Lifecycle Edition software is a comprehensive design and run-time SOA repository built on a highly reliable, scalable and robust platform that includes out-of-the-box templates and models for easy customer adoption. The solution is powered by IBM Rational® Asset Manager software, which manages information useful for developing, reusing and managing virtually all types of reusable assets, and by IBM WebSphere Service Registry and Repository software, which manages information useful for the run-time operation, management and development use of services.

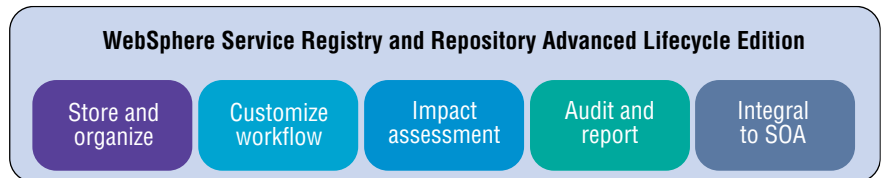


Figure 3: WebSphere Service Registry and Repository Advanced Lifecycle Edition software

Publish and synchronize scenario

The following example illustrates the federation of service metadata across the repositories that target the development and deployment phases of the service lifecycle.

Highlights

In this example, the IT staff creates a new service in the service registry. Once the service is approved, a version 1 is created. The service version is then automatically synchronized to the design-time repository, and development begins.

WebSphere Service Registry and Repository Advanced Lifecycle Edition

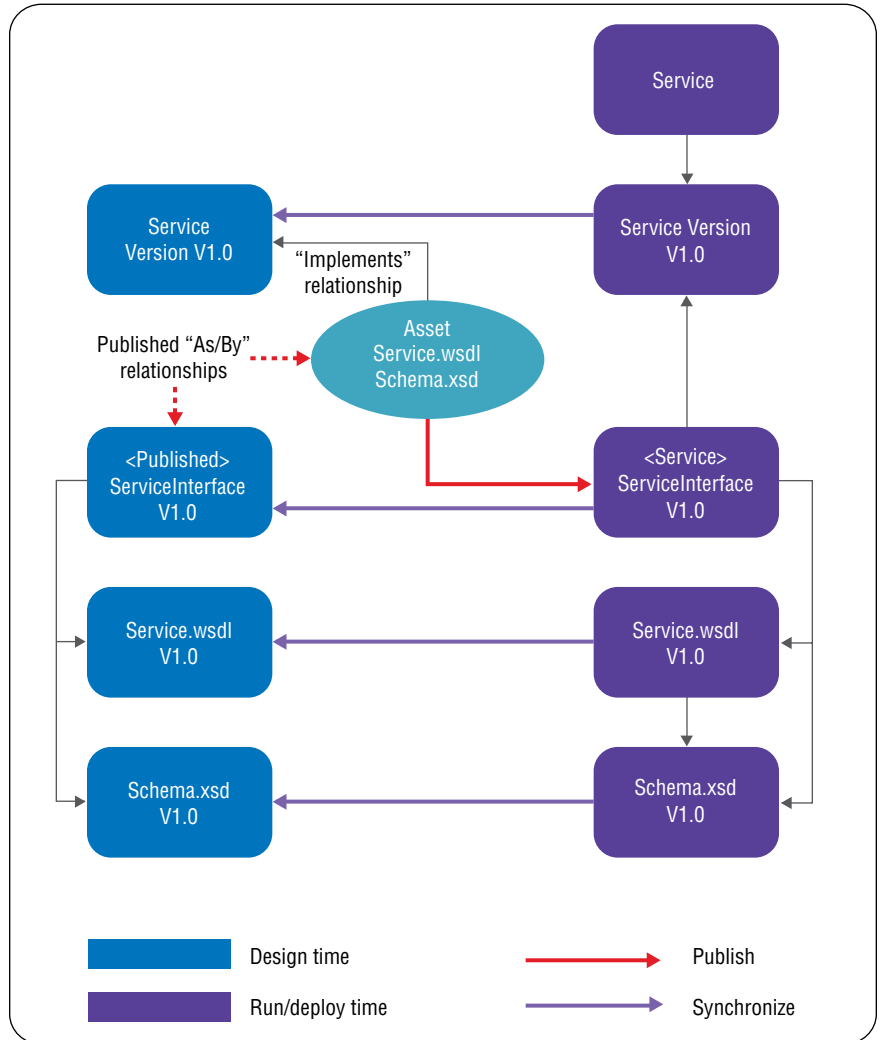


Figure 4: Federation of service metadata across the development and deployment phases of the service lifecycle

Highlights

Once the artifacts are imported into the asset, the asset has all the relevant details about the service. And a relationship is created between the asset and the service version that provides traceability between the run-time and design-time repositories.

The service lifecycle begins when a need is identified for either a brand-new service or a modified existing service. In this example, a new service is required, so the IT staff creates one in the service registry, thereby initiating the service lifecycle. Once the service is approved by the organization's SOA center of excellence, version 1.0 of the service is created. The service version is then automatically synchronized to the design-time repository, and development of the service begins.

An asset is created in the design time repository, and artifacts that implement the service version are imported into the asset. This asset has all the relevant details about the service including its design specification, associated models and interfaces. Between this asset and the service version, a relationship is created that provides traceability between the run-time and design-time repositories. Once the asset is approved, the service artifacts (Web Services Description Language [WSDL] and Schema documents) are published by the user to the run-time repository. Again, this information is automatically synchronized with the design-time repository, and relationships are created to the original asset. These relationships provide views of a developed versus a deployed service. In the run-time repository, the service version lifecycle continues to be governed through test, production, deprecation and eventual retirement. In addition, another version of the service can begin its lifecycle, and the whole process repeats. When changes are made to the service, they are kept in sync across these repositories.

Highlights

Using WebSphere Service Registry and Repository Advanced Lifecycle Edition, you can create assets, organ-ize them the way you want, and quickly find them during design time.

Because WebSphere Service Registry and Repository Advanced Lifecycle Edition helps IT managers create high-quality services, users will feel more confident about reusing them.

Increase service visibility and promote reuse

WebSphere Service Registry and Repository Advanced Lifecycle Edition addresses many of the challenges discussed earlier that relate to service visibility and service reuse. During design time, you can easily create assets, organize them the way you want, and quickly find them. During run/deploy time, you can automatically discover services in your environment, classify them and find the right service at the right time.

By flexibly organizing assets and services during design and run time, architects and IT managers can increase service visibility to reduce redundancies and duplication, dramatically curtailing costs, accelerating time to market and improving staff productivity.

Create a trusted source of high-quality services

WebSphere Service Registry and Repository Advanced Lifecycle Edition helps IT managers create a trusted source of high-quality services.

During design time, you can define roles and workflow to create, review and approve assets. During run/deploy time, you can set up role-based access to introduce, promote and retire services. WebSphere Service Registry and Repository Advanced Lifecycle Edition is designed to help you follow best practices by applying governance policies consistently. By associating policies with services, and making them available to service consumers, the software allows IT managers to increase flexibility in providing customized services to satisfy customers' diverse needs. Responding more rapidly to customer requests leads to increased business opportunities and improved customer loyalty.

Highlights

WebSphere Service Registry and Repository Advanced Lifecycle Edition improves team communication by allowing consumers to provide feedback and be automatically notified when service changes are made.

The audit and report capabilities in the WebSphere software help IT executives fine-tune services in flexible response to consumers' needs.

Manage changes and improve communication

WebSphere Service Registry and Repository Advanced Lifecycle Edition helps manage changes to your services and improve team communication.

During design time, consumers can use the software to rate assets, provide feedback and be notified when assets change. During run/deploy time, users can manage multiple versions of the service, and as services change all subscribers are notified.

These capabilities can greatly enhance team communication, allowing managers to effectively deal with their growing number of services and realize a substantial ROI on their SOA investment.

Plan and assess your service portfolio

WebSphere Service Registry and Repository Advanced Lifecycle Edition allows you to generate a variety of metrics for your service portfolio. During design time, you can audit and report metrics based on asset activities; during run/deploy time, you can audit updates to services and policies.

By using the audit and report capabilities in WebSphere Service Registry and Repository Advanced Lifecycle Edition, IT executives can continually improve their services to the business, increasing customer satisfaction and minimizing unplanned service disruption and maintenance.

Highlights

Through its integration with existing SOA infrastructure components, WebSphere Service Registry and Repository Advanced Lifecycle Edition facilitates rapid SOA adoption and a quick ROI.

Leverage existing SOA infrastructure components
 WebSphere Service Registry and Repository Advanced Lifecycle Edition is designed to seamlessly integrate with existing SOA infrastructure components to facilitate collaboration, governance and rapid SOA adoption throughout the enterprise.

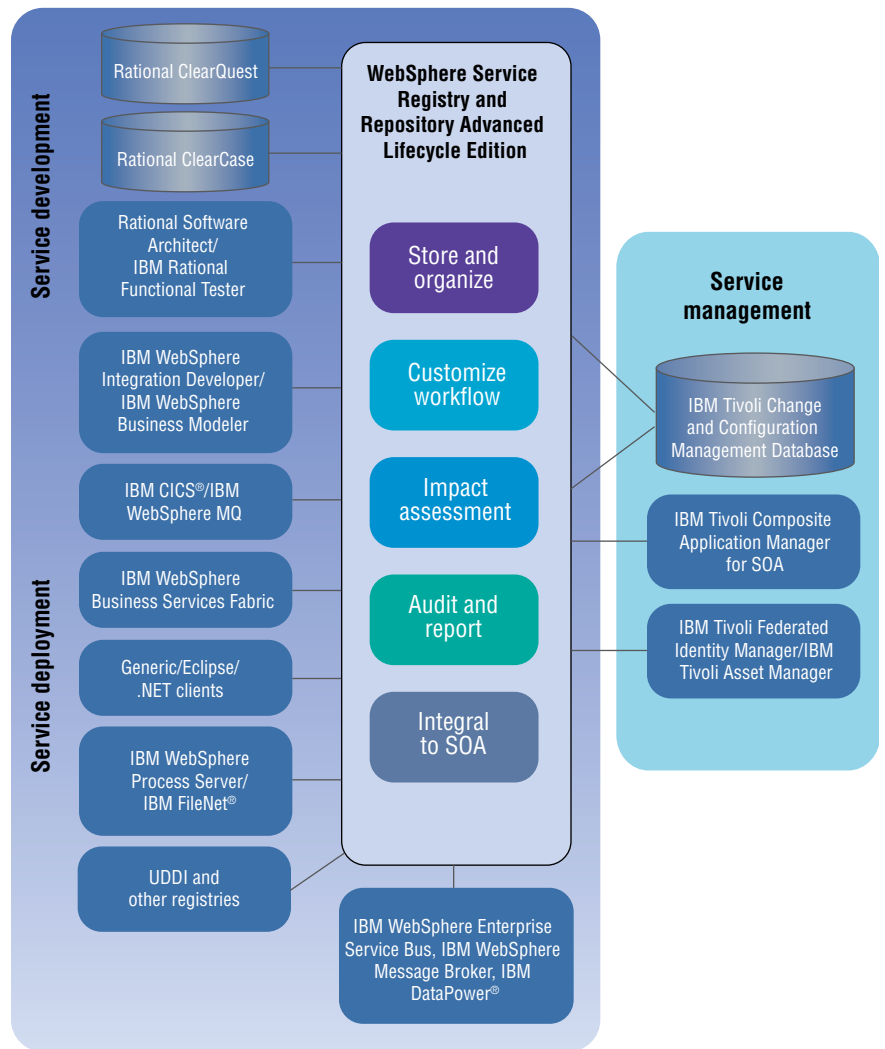


Figure 5: Seamless integration with SOA infrastructure components

Highlights

WebSphere Service Registry and Repository Advanced Lifecycle Edition integrates with Rational ClearCase, Rational ClearQuest, Rational Application Developer and WebSphere Integration Developer to help you build higher-quality services.

By federating information with service management tools, WebSphere Service Registry and Repository Advanced Lifecycle Edition can help bridge the gap between development, deployment and operations.

Design services better and increase their quality

WebSphere Service Registry and Repository Advanced Lifecycle Edition integrates with configuration management systems such as IBM Rational ClearCase[®] software, allowing users to understand and leverage the artifacts used to develop and build assets, and to identify an asset's versioned artifacts quickly.

With change request management software such as IBM Rational ClearQuest[®], WebSphere Service Registry and Repository Advanced Lifecycle Edition enables users to submit change requests for an asset and track and fix problems quickly.

And WebSphere Service Registry and Repository Advanced Lifecycle Edition integrates with development environments such as IBM Rational Application Developer or IBM WebSphere Integration Developer software. By enabling developers to build code in a team environment that supports the creation, reuse and communication of assets to the wider team, WebSphere Service Registry and Repository Advanced Lifecycle Edition can also help increase productivity.

Improve service management and monitoring

Across the various phases of the service lifecycle, WebSphere Service Registry and Repository Advanced Lifecycle Edition can integrate seamlessly with existing SOA infrastructure components, helping to federate service information with development and testing tools, configuration management systems, business process management solutions and Universal Description, Discovery and Integration (UDDI) registries.

In particular, WebSphere Service Registry and Repository Advanced Lifecycle Edition is designed to bridge the gap between development, deployment and operations by federating information with service management tools such as IBM Tivoli[®] Change and Configuration Management Database and IBM Tivoli Composite Application Manager for SOA software. For example, WebSphere Service Registry and Repository Advanced Lifecycle Edition can subscribe to performance and health alerts that Tivoli Composite Application Manager

Highlights

for SOA publishes based on service-level agreements (SLAs), and then record that information as service metadata. This metadata then can be used by the enterprise service bus (ESB) infrastructure to make intelligent service selection decisions.

Operations managers can use the software to better understand the impact of operational environment changes on development, and also to effectively reconcile deployed services with registered services.

A European insurance conglomerate

To build a reputation of great customer service and achieve its revenue growth objectives, a European insurance company was looking to implement an integrated view of customers across its various businesses. For enterprise architects, that meant automating several manual processes in order to integrate information and data from various sources. It also meant increasing the efficiency of development and maintenance processes through reuse.

A European insurance conglomerate accelerated its speed to market and addressed new business needs using WebSphere Service Registry and Repository Advanced Lifecycle Edition.

The company deployed WebSphere Service Registry and Repository Advanced Lifecycle Edition to manage its development assets, services and associated metadata. It then seamlessly integrated the software with the IBM WebSphere Process Server platform to assemble and modify business processes.

As a result, the company achieved accelerated speed of deployment to support new business needs and significantly improved staff productivity while containing and reducing IT expenses.

Highlights

IBM itself uses WebSphere Service Registry and Repository Advanced Lifecycle Edition to provide comprehensive governance of its multitudes of services.

WebSphere Service Registry and Repository Advanced Lifecycle Edition supports an agile and low-risk registry and repository strategy by addressing the needs of specific communities.

IBM Business Transformation and CIO group

As the organization that manages IBM's worldwide IT infrastructure, the IBM Business Transformation and CIO group seeks to deploy the most effective, cost-efficient technologies within IBM. As part of this effort, the organization has embraced SOA.

The IBM Business Transformation and CIO group recognized early on that the benefits made possible by SOA are not automatically achieved by every organization that implements the solution. To coordinate the integration of SOA across the enterprise and ensure that the framework reaches its full potential, effective SOA governance is essential.

Therefore, the organization leverages WebSphere Service Registry and Repository Advanced Lifecycle Edition to provide end-to-end governance of IBM services. Governed in development and then tested and finalized, the services are assured to meet the requirements for deployment into the production environment, and the service endpoints are available for run-time discovery by the ESB infrastructure.

Summary

IBM offers a number of metadata repositories, each of which targets a specific user community. Each repository supports the tasks and processes that are important to a particular community and provides the content that is relevant to those tasks and to that community.

IBM WebSphere Service Registry and Repository Advanced Lifecycle Edition offers a solution that allows users to focus on the visibility and control of all their assets and services, helping to increase agility and reduce risk.



For more information

To learn more about IBM WebSphere Service Registry and Repository Advanced Lifecycle Edition software, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/integration/wsrr/ale

To learn more about IBM's strategy for SOA governance and service lifecycle management, visit:

ibm.com/software/solutions/soa/gov

© Copyright IBM Corporation 2008

IBM Corporation
Software Group
Route 100
Somers, NY 10589
U.S.A.

Produced in the United States of America
October 2008
All Rights Reserved

IBM, the IBM logo, ibm.com, Rational, and WebSphere are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at ibm.com/legal/copytrade.shtml

Other company, product, or service names may be trademarks or service marks of others.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

The information contained in this documentation is provided for informational purposes only. While efforts were made to verify the completeness and accuracy of the information contained in this documentation, it is provided "as is" without warranty of any kind, express or implied. In addition, this information is based on IBM's current product plans and strategy, which are subject to change by IBM without notice. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this documentation or any other documentation. Nothing contained in this documentation is intended to, nor shall have the effect of, creating any warranties or representations from IBM (or its suppliers or licensors), or altering the terms and conditions of the applicable license agreement governing the use of IBM software.

* "The Forrester Wave: SOA Life-Cycle Management, Q1 2008," Forrester Research, January 2008.