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Service creation.

Scenarios supporting the reuse SOA entry point

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Services—the building blocks of service-oriented architecture (SOA)—are self-contained, reusable business tasks. Reusing these services to extend, enhance or create new processes enables you to substantially increase business flexibility and responsiveness through reduced development time and elimination of duplicate processes. By service-enabling your core IT assets, you expand access to proven systems and achieve greater value from your existing technology investments. In fact, a study by Software Productivity Research found that it can be up to five times less expensive to reuse existing services and applications than to rewrite them.* Services can also be created by accessing third-party service providers or by creating new ones. However your services are developed, they must be stored and managed for easy access and controlled use.

This executive brief explains in more detail the three key sources of services for SOA, the benefits of reuse and a proven methodology for service-enabling existing IT assets and creating value through new services. The objective is to help you map out a successful strategy for building an easy-to-define and easy-to-manage SOA.
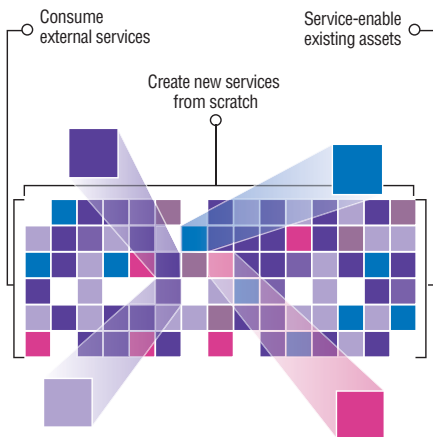
Start by comparing what you need to what you already have

You've finished modeling and simulating your business processes, and you know how you want your business to run. But how will the individual tasks that make up the business process be accomplished? Each task needs to be supported by a service, and an SOA makes it possible to string these

Innovation is all about the ability to change quickly, easily and economically. Innovation that matters is all about differentiating yourself in your market. Recognizing market needs and responding more quickly than your competitors with innovative business models, products and services are what make your business grow. But how can you achieve innovation that matters when your business is only as flexible as the IT environment that supports it? An SOA helps you innovate by enabling your IT systems to adapt quickly, easily and economically to your changing business needs.
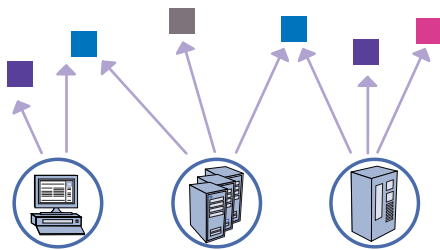
Service-enable existing IT assets

services together into flexible, modular systems that enable you to respond quickly to opportunities and competitive threats. Deciding where these services will come from is the first step in implementing your vision for an optimized business process.

There are three main sources for services. You can create them from scratch, purchase them or service-enable existing packaged or custom software. The recommended approach is to leverage all three sources by:

- *Service-enabling tasks that are supported by in-place, high-value software applications and systems.*
- *Using externally provided services to support commodity tasks.*
- *Creating new services only to fill in the remaining gaps.*

Reuse proven, high-value assets
Reusing applications and systems you already have is a sound business decision—not only because you reduce investment in new technologies. Existing business logic is one of the most valuable assets any company owns. It is proven and time tested. As a result, service-enabling current applications can significantly accelerate and lower the risks of SOA projects. In addition, maintenance overhead shrinks, because tested code for common functions has already survived the rigors of production use.

Sophisticated IBM analysis tools can help automate the process of locating and selecting existing assets for service enablement. Such tools scan source code where it resides to provide a comprehensive view of your mainframe-based and distributed application assets and their relationships and dependencies. You can quickly identify components that could be reused to support your new flexible business processes.

An individual service can draw upon one packaged or custom application or multiple systems to deliver its intended function. For example, an address record in an SAP customer relationship management system can be combined with functionality from a legacy mainframe-based accounting system to create a service to support the opening of a new customer account. The combined service might be invoked as part of a sales order entry business process that involves delivery and billing. By combining functionality that originates in separate systems and exposing this combined functionality as a single service, you reduce system complexity and eliminate redundancy. The resulting composite applications enable greater flexibility to adapt as markets and business strategies change.

Consume externally provided, commodity services
During the process of breaking business processes into tasks for service-enablement, you will find functions that can be more efficiently delivered by partners and third-party vendors. For example, consider a company that enables customers to place orders and select a shipping method online. The system can utilize the shipper's remote services to calculate the shipping cost. This is a commodity-level task that doesn't make sense for the online retailer to develop on its own.

By accessing such an external service, users can reallocate resources toward higher value undertakings that help them grow their business and stay ahead of their competition. IBM makes it easy to locate available external services and incorporate them into broader business processes just as easily as if these services originated from within the company.
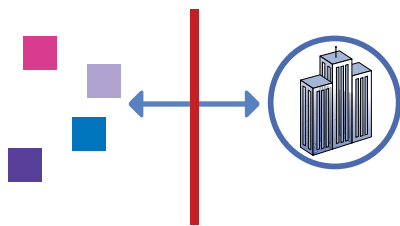
Consume externally delivered services
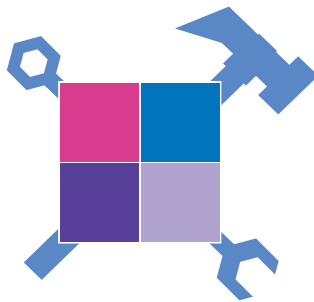
Create a new service from scratch

Create new services to fill portfolio gaps

There are times when SOA projects require the creation of net-new services to support tasks. For example, it may not be possible to support a highly specialized task using existing IT assets or externally available services. It is also possible that some aspects of an existing application have become obsolete and don't make sense to service-enable, because you simply cannot extract any reusable components. In these cases you will need to decide whether and how to rewrite these functions as new services.

Using IBM service development tools, you're able to leverage the knowledge of your legacy-systems developers. These tools allow business-oriented and procedural developers who may not have in-depth Java™ skills to develop, test and debug new services using intuitive, visual design methods. That way they can focus on designing and creating business logic and services while relying on the IBM service development tools to automate everything from the Web services description language file and code generation to test-client generation and conformance verification.

Minimize SOA project risk

Whatever your approach to creating services—service-enabling existing assets, consuming externally available services or creating net-new services—SOA projects are best pursued by following the SOA life cycle. You can think of this life cycle comprehensively and approach it tactically by focusing on the phases that provide the most value for you. Underpinning all phases is a governance framework that provides guidance and oversight.
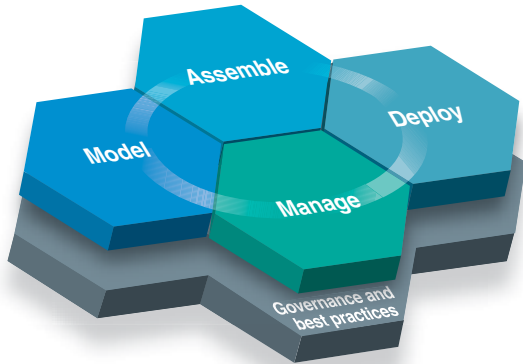
An SOA life-cycle approach is the best way to undertake any SOA project.

The SOA life cycle

The SOA life cycle offers a holistic view of services development projects in the context of an integrated business and information systems strategy. It spans the four phases depicted at left: model, assemble, deploy and manage. Feedback is cycled iteratively among the phases for ongoing process improvement. All of these phases are underscored by SOA governance to provide the necessary oversight and control to make the project a success at every life-cycle stage.

The model phase of the SOA life cycle establishes a common understanding of the business processes, objectives and performance metrics. You begin by gathering business requirements and then simulating what-if scenarios to determine the optimum process for achieving desired business outcomes. These optimized processes provide a baseline from which to measure results. Modeling enables businesses to visualize entire systems, evaluate different options and communicate designs more clearly before committing business and IT resources.

Once the business processes have been optimized, you're ready to implement them by assembling newly created and existing services to form composite applications. The assets are then deployed into a secure and integrated environment, taking advantage of specialized services that provide support for integrating people, processes and information. After deployment, you monitor key performance metrics and performance and use the results to identify ways to refine the business and information design.

SOA governance enables organizations to maximize the business benefits of SOA, which include increased process flexibility, improved responsiveness and reduced IT maintenance costs. It also helps ensure a successful SOA project by establishing decision rights, guiding the definition of appropriate services, managing assets and measuring performance.

Define an SOA approach that works for you
IBM can help you lay out an approach to services-creation and reuse projects that's right for you. Initially you might want to understand your business better and identify which assets you want to use more effectively. You might want to gain better insight into applications that enable key business processes across functional areas. Perhaps you want to perform more in-depth analysis of your business rules in preparation for possible componentization. We have the experience, understanding and analysis to help you:

- *Identify assets for continued investment and reuse.*
- *Service-enable programs and create services and composite applications.*
- *Deploy reused, purchased and new services into robust, flexible and scalable multiplatform run-time environments.*

For more information, talk to your IBM representative about your business goals or contact IBM directly at soa@us.ibm.com. Let's get started today!

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* "The ROI on COTS: Industry's Study Reveals
Scale of Savings." *Grid Computing.* September 2,
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