



Delivering trusted information services through SOA.



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Deliver information as a service to build value

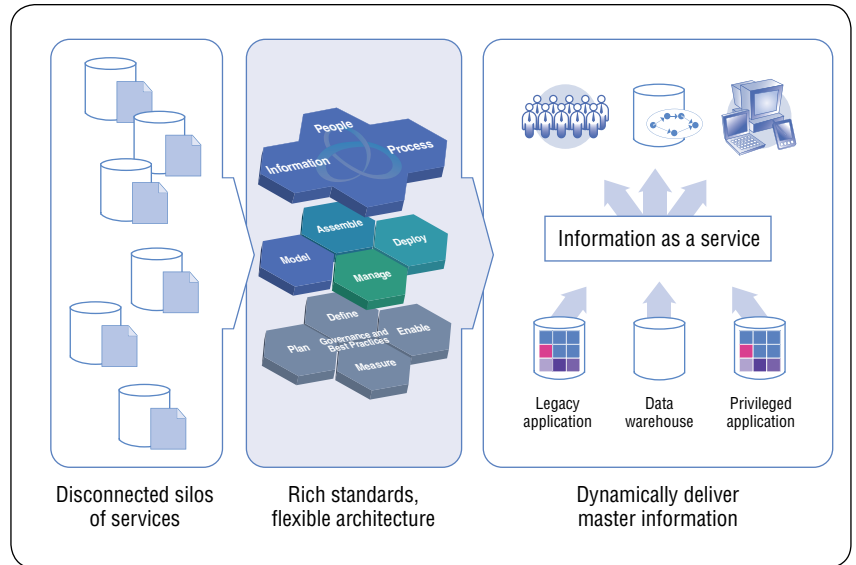
Buried deep in the existing technology assets of most businesses is a virtual treasure trove of information that can help you create value. Information that your company can use to improve processes, more easily collaborate with partners and customers, and reduce risk. Unfortunately, this data typically is spread across many systems that may be on different technology platforms. As a result, you're not able to access holistic and consolidated views of key information aspects. For example, your organization may not be able to explore important facets of a customer or supplier relationship. Moreover, you may not be able to trust the timeliness, quality or completeness of available information. Together, these issues can stifle business agility, limiting business competitiveness and growth. In addition, these issues can make it difficult to respond to statutory reporting requirements. The challenge is to find better ways to extract information from its source and to integrate it into your business processes in order to drive innovation.

This executive brief explores how a service-oriented architecture (SOA) approach can help you deliver the right information as a service in context to optimize business processes, applications and productivity. The approach is designed to overcome barriers presented by siloed applications and systems, so the enterprise can better respond to changing business needs and opportunities. After reading this brief, you should better understand how you can use an SOA approach to horizontally integrate information across your lines of business and take advantage of the associated benefits.

Innovation is all about the ability to change quickly, easily and economically. Innovation that matters is all about differentiating yourself in your marketplace. Recognizing marketplace 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? Service-oriented architecture helps you innovate by ensuring that your IT systems can adapt quickly, easily and economically to support your rapidly changing business needs.

Information as a service defined

When you use an SOA to provide information as a service across the enterprise, you can improve the access to and consistency of information. And you can use the data in more ways. Open industry standards, when employed with information integration technologies, enable you to decouple the information stored in silos from the technology of those silos and to publish reusable information services. These information services can then be leveraged by processes or people-centric solutions from across diverse operating systems, applications and legacy systems. With the right information services in place, decision makers at all levels in your organization can have timely, security-enriched access to authoritative, personalized and trusted information. By removing the traditional barriers to information sharing, you can drive innovation with deeper and more accurate insight into operational, transactional, analytical and unstructured information.



Information services simplify complex transaction processing.

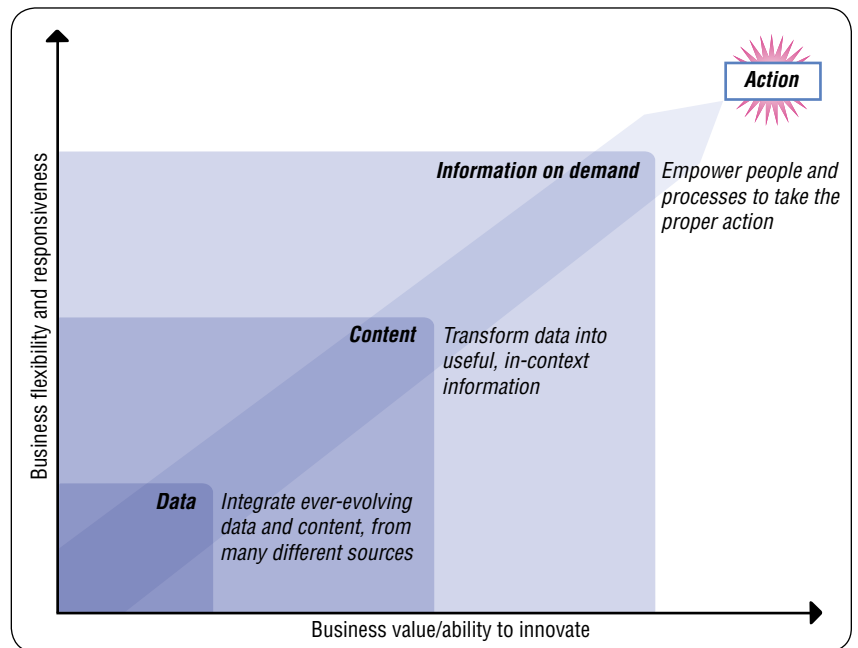
Behind the scenes, an information service may process complex transactions. For example, it could request data from multiple sources, match the data and publish it as a single record in the target application's standard format. Regardless of the transaction complexity, however, a developer will see only a set of simple services that make requests such as "get customer" or "update account." The benefit is that consumers of the service don't need to know anything about the data sources, the processing that occurs within the service or even the technology in which the services are deployed.

The adoption of an information-as-a-service approach in an SOA helps ensure consistent definitions, packaging and governance of key business data. The information services can be reused more easily across processes and can be maintained independently, helping to improve IT staff productivity and to support more flexible operations.

Unlock your information

Most organizations realize that they have vast amounts of useful information stored in systems. The problem is that the data can only be accessed through the business application software logic that provides the data with business context. As a result, the accessibility of the data for other uses is limited.

By building SOA information services, your portals, applications and processes can more easily access and use data from multiple platforms, including information from mainframe sources. Through the ability to leverage this information, you will potentially improve process efficiency and customer service, which can boost your competitiveness.



Expanding the business value of information

Case study: Harley-Davidson

Challenge

- *Improve flow of analytical information about inventory and local marketplaces between corporate headquarters and dealer systems*
- *Enable reconciliation of external marketplace and parts data with current dealer order forecasts and shipping data*

Solution

- *Provide services, based on information in data warehouses, directly to dealer systems*

Benefits

- *Up-to-the-minute information to dealers helps reduce unnecessary reorders*
- *Closed-loop operational decision making helps improve inventory management, in-store sales and customer satisfaction*

Create trusted information services

You can address issues of data complexity, inconsistency and accessibility by building consistent, reusable services for trusted information. A consistent, unified view of information assets helps you and your employees avoid costly mistakes and respond to marketplace opportunities ahead of the competition. Moreover, moving forward you can easily combine the information services in different ways to create entirely new processes without a lot of coding. Service reuse can help you save time and reduce the costs of new projects while improving the trustworthiness of the information delivered by the services.

With the proliferation of local data stores—created by combining data access and update logic inside applications—data governance has become a challenge. Who or what has access to your data, and how do you control access? Can you trust that unauthorized changes have not been made? It is difficult to track data access logic that is interwoven with application logic and dispersed across many applications. Use of information services for all data access provides an easily identifiable control point, a built-in capability for monitoring and fine-grained, customizable control of data access.

Information integration's goal is to provide accurate, consistent, timely and coherent business information to people and processes. Delivering information as a service in an SOA enables you to present data in a business-centric rather than application-centric context. You can provide real-time, integrated access to business information—regardless of where it resides or its format.

“The average Fortune 500 company has over 48 different financial systems and three enterprise resource planning systems. It also has a multiplicity of other solutions that range from human resources to business intelligence applications. If all of this software could exist in isolation, there would not be a problem. In practice these applications need to exchange information with one another and to intercommunicate.”

—Bloor Research 2006*

Case study: Wachovia

Challenge

- Provide consolidated view of customer information, which was stored in disparate environments, across multiple business units following a merger

Solution

- Integrate access to distributed heterogeneous content through an SOA and information services

Benefits

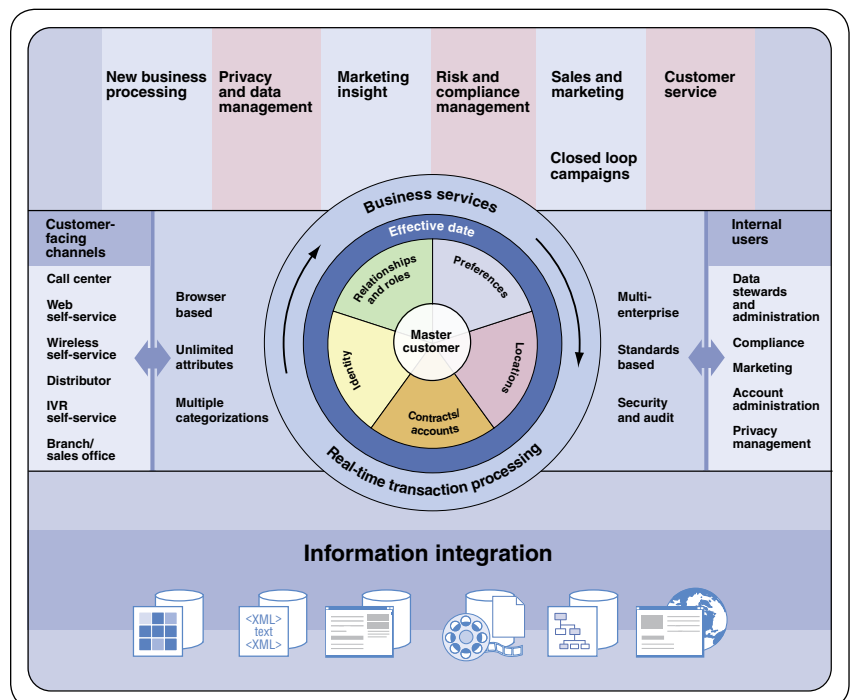
- US\$2.4 million savings in two years; 64 percent return on investment
- Increased content requests by 50 times, demonstrating that customers are making greater use of services
- US\$1 million in savings for each new business unit that needs a common view of the client

Develop a single version of the truth for critical information

Many knowledge workers receive information from their systems that reflects multiple versions of the truth. They can't go to one single place to access a complete and accurate view of important facts. What's more, information is often incomplete, inaccurate or out of date. And the context necessary to use the data may not even be available. The potential consequence is that the quality of knowledge employees' work may be compromised, and subsequently, employees' overall productivity and responsiveness may be reduced.

A master data management strategy must acknowledge that certain information domains—such as product, customer, employee and partner information—are relevant to most enterprise applications. And because each system potentially has its own database and varying levels of detail, queries to different systems may produce different results. This situation can cause costly data redundancies and misleading analytics.

Master data management is a set of disciplines, technologies and solutions that you can use to create and maintain consistent, complete, contextual and accurate master data for all stakeholders. Master data management uses the concept of master data objects, which represent the key business entities (for example, products, customers and accounts) that an organization interacts with to run its business.



SOA elements for master data services

A master data management platform enables you to implement a single version of the truth across all information sources—both inside and outside of your organization. It bundles core business data with the data management logic required to use that data. Together they form the master data services that are available to requesting users, applications and portals. The benefit is a common source of accurate and reconciled reference information organization wide.

Increase your organization's agility

Organizations constrained by siloed, heterogeneous business systems can implement information as a service to take advantage of innovation opportunities. Information services built for siloed systems unlock previously inaccessible data, making it available to new applications. In addition, as links into standard information services in an SOA are developed, you can better contain the ever-escalating costs of maintaining links to information in existing systems when business demands change.

With information as a service, you can consistently package data among business processes. This can mean you no longer need multiple maintenance points for the same business logic, so you can avoid complexity and save time and costs. Instead, you can focus your spending on business-critical initiatives. Overall, an SOA approach facilitates innovation by making it simpler and more cost effective to adapt information sharing to support rapidly changing business needs.

Optimize your data services infrastructure

While the concept of an SOA is not new, the concept of information as a service is more recent. It has evolved as companies and technology providers have come to better understand the impact that information architectures can have on the success of an SOA transformation project. By using standards to decouple information from the silo in which it is stored, you're not limited to the use of a single database, operating system or server platform. So regardless of the system or format in which the information is received, an SOA can help you ensure it is timely, accurate and trustworthy.

Many organizations are leveraging SOA technologies and open industry standards such as XML as they build their SOA implementations. Because XML is vendor and platform independent, it is rapidly becoming the de facto standard for data exchange and format integration. As a result, countless business documents, such as purchase orders, insurance applications and claims, financial trades and transaction records, now reside in XML.

In addition, because it's not tied to any specific platform, language or system—and due to its self-describing nature, flexibility, platform, language and operating system independence—XML is often used as the messaging format in an SOA.

The challenge is to store, manage and protect your XML data in a way that enables you to unlock its latent potential. At the same time, you don't want to sacrifice the high levels of availability, performance and accessibility long associated with traditional relational database management systems (RDBMSs). A hybrid data server, which supports seamless integration of XML with relational data, can become a key part of your information architecture.

Reap the benefits of a changed development culture

Once your developers start to develop and reuse information services and the approach is adopted across the organization, the benefits will spread rapidly. For example, application developers will not have to maintain deep database skills, and information service developers will no longer need to possess skills in programming languages as they use high-level tools to expose selected data as SOA services. And by using information services to access data stores, a greater level of integrity is introduced into the development environment, because governance policies can be more easily enforced.

Another significant benefit of an information-as-a-service approach is that developers can more easily make application changes based on evolving business needs. By decoupling application logic from the data model, you can localize the impact of any future changes in the data model to your information services implementations. Additionally, the approach reduces the number of programming and process logic maintenance points, helping to lower development costs.

Get started with an SOA approach that works for you

IBM can help you establish an information-as-a-service approach that's right for your organization. When you define your initial SOA projects, consider selecting one of the following entry points that makes most sense for your business needs: service enable your mainframe data to make it easier to access; implement a centralized data management solution to facilitate greater control over XML data; create content services to provide a unified view of content and make it easier to reuse; create master data services to provide unified management of master data across systems; or create information integration services to provide consistent, complete and accurate information across the organization.

Wherever you choose to start, we can use our best practices, business and technical expertise, and industry-leading software to help you achieve your business goals.

For more information

To learn more, 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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* Howard, Philip. "SOA and Information Services." Bloor Research. March 2006.