

Solutions for the adaptive enterprise.



## Service-Oriented Architecture (SOA)

Increasing IT agility for competitive  
advantage

change + hp





Market conditions can change quickly and often unpredictably—challenging your business strategy. The ability to adapt to these changes quickly and decisively can be the difference between success and failure. Your business needs a flexible IT infrastructure that supports change in such dynamic areas as customer preferences, regulatory requirements, technology innovations, and the competitive landscape. Your infrastructure also must align with your business requirements. Hardware and software alone—no matter how advanced—won't get you there.

To gain business agility, many companies are moving to a Service-Oriented Architecture (SOA), which represents key business processes as services that are reusable, sharable, and readily available. SOA helps businesses gain additional value from existing IT investments by shifting redevelopment costs and efforts into innovation. In addition, SOA speeds development time and eliminates the expense of business process re-engineering.

## How does HP define SOA?

SOA is an architectural approach—built upon the concept of software services—for designing, building, and managing the distributed computing infrastructure that an enterprise requires to execute and achieve business strategy and goals. This approach promotes the use of loosely coupled, reusable, standards-based, and well-defined services in a way that enables them to be discovered on the network and used by other applications or end users.

HP believes that deploying an SOA is a journey that gradually transforms the enterprise's IT architecture, placing at its center software services that can be used for designing, building, and managing components of the distributed computing infrastructure. To help you, we offer critical elements for the successful planning, integration, and management of your SOA implementation, including end-to-end SOA services, a broad choice of middleware vendors, HP OpenView SOA Manager, and world-class server and storage products. HP's proven expertise in multiple-platform and heterogeneous operating environments and emphasis on business results differentiates HP from other vendors. HP can provide you with an SOA tailored specifically for your environment, with practical and sustainable value for your business.

## SOA benefits

<b>Maximize return</b>	<ul style="list-style-type: none"><li>• Lower costs of maintaining heterogeneous environment</li><li>• Reduce complexity</li><li>• Reduce cost of change</li></ul>
<b>Mitigate risk</b>	<ul style="list-style-type: none"><li>• Promote security, continuity of business operations</li><li>• Reduce impact of technology implementation on people and process</li><li>• Enable regulatory compliance</li></ul>
<b>Improve performance</b>	<ul style="list-style-type: none"><li>• Improve IT's ability to respond to changing business needs</li><li>• Improve customer satisfaction</li><li>• Link and extend value chain</li></ul>
<b>Increase agility</b>	<ul style="list-style-type: none"><li>• Drive higher level of reuse</li><li>• Improve response to business demands</li><li>• Enable business to respond to changing markets and competitive pressures</li></ul>

## A Service-Oriented Architecture strategy

Businesses achieve their goals by defining and implementing business requirements, policies, and procedures to support them. From a business's perspective, a "business process" is the basic unit of work, which controls and implements business transactions. So, how can SOA enable a business to become more agile?

In an SOA, a service is the fundamental building block for a business process. SOA services have the following attributes:

- Independent
- Reusable
- Shared
- Provides a standards-based access interface
- Discoverable

An SOA establishes the alignment between SOA services and business processes. In an SOA, it's the business processes that drive the definition and creation of SOA services, orchestrate service execution, and invoke the appropriate services, as required. In response, the underlying attributes of an SOA service make it easier and faster to change business processes through the reuse and sharing of services. The ability to adapt and create business processes rapidly produces business agility, allowing businesses to utilize services whose functionality and interface are defined to enable the business process.

## Limitations of a traditional IT approach

Traditional architectures have evolved a great deal—from mainframe timesharing, desktop client/server, and the Internet, to the SOA model of today. SOA shifts the way we think about traditional architecture, bringing an end to monolithic application architectures and the associated maintenance costs.

Today's more flexible SOA services help synchronize legacy business systems and heterogeneous platforms with your current business goals to provide increased agility in a secure, managed, well-governed, and flexible environment.

## HP can work with you to conquer some of the most common challenges of traditional IT.

### **Challenge: reducing costs while maximizing return**

*HP solution: shift IT budget from maintenance to innovation*—Transform business processes from siloed, replicated processes into highly leveraged, shared services that cost less to maintain.

Traditional applications	Service-Oriented Architecture
• Designed to last	• Designed to change
• Tightly coupled	• Loosely coupled, agile, and adaptive
• Integrate silos	• Compose services
• Code-oriented	• Process-oriented
• Long development cycle	• Interactive and iterative development
• Cost-centered	• Business-centered
• Middleware makes it work	• Architecture makes it work
• Favors homogeneous technology	• Favors heterogeneous technology

**Challenge: business inflexibility**

*HP solution: agility*—More effectively roll out changes throughout the business with less complexity and effort, saving time and money. Develop IT systems that do not require re-architecting when faced with business change. Shift business logic from the code to meta data, and put decisions in the hands of IT business users so contact with IT is not required. Create business applications that are service driven, management driven, and meta-data driven.

**Challenge: risk reduction and standards compliance**

*HP solution: governance*—SOA is a framework for enabling risk reduction and compliance without having to implement security everywhere. Using SOA helps restrict the number of access points to help enforce control over applications.

**Challenge: performance and customer satisfaction**

*HP solution: efficiency*—Increase reuse of existing assets. Gain more efficient application/project development and delivery through the reuse of shared services that have been previously developed and deployed.

**It takes more than just technology.**

SOA is not about hardware, software, and protocols—it's about improving business results. It's not an off-the-shelf technology; rather it is an approach to architecting and organizing IT and business functionality that enable you to achieve your business goals while managing change.

A truly successful SOA supports multi-platform, heterogeneous environments and accommodates new as well as legacy systems and processes to help you leverage your existing IT assets and provide new functionality as needed, increasing business and IT alignment.

SOA provides governance, the formal process of defining the strategy of the IT organization and overseeing its execution to achieve the goals of the enterprise. Similar to enterprise-class architecture, SOA governance is concerned with overseeing the people, processes, applications, and services that establish the framework for the SOA.

HP offers SOA solutions that work in customers' actual environments. We take a lifecycle approach to meeting your business needs with systems, software, services, and partnerships. Rather than lead with a proprietary approach, we work to clearly understand your needs and then find the best possible solution for your existing heterogeneous environment. This ability to take an independent perspective allows us to propose a solution that best meets your business needs, and it differentiates our approach from that of other vendors. Whatever platform you are working with, HP can increase your SOA success factors to design a well-architected, secure, managed, and pragmatic solution.



## SOA and Web services

An SOA is not the same as Web services, and it does not rely on Web services. Having said that, Web services are a commonly used component of SOA implementations because they provide a standardized way of integrating Web-based applications, providing a more platform-neutral approach for better interoperability. An SOA extends the value of Web services in the enterprise by providing an architectural blueprint, setting the standards and governance models for all business processes, applications, and IT infrastructure.

### **If you're already using Web services, why do you need SOA?**

Without an SOA framework, the growing implementation of Web services can create complex business system management problems. Our customers throughout the world say pretty much the same thing when asked about their Web services implementations: "Web services are out of control," "it takes too long and costs too much to make changes," and "we can't easily get accurate and trustworthy data." The introduction of an SOA approach in the enterprise removes the traditional barriers to business and IT agility by establishing standards, asset reuse, consistency, architecture, governance, security, and manageability.

## Building business agility: HP Services for SOA

HP takes an end-to-end "lifecycle" approach to defining and implementing SOA solutions that meet your precise needs—and evolve as those needs change. Regardless of where you are in the SOA adoption process and the challenges you are facing—whether you are just beginning to use Web services or are evaluating enterprise SOA and business services—we've been there before. We've helped organizations of all types and sizes create a more adaptive enterprise. And we rely on that experience for your benefit by offering the following SOA services:

- **HP SOA Envisioning** helps large enterprises develop an understanding of SOA concepts and identify the benefits and potential effects of SOA on the enterprise.
- **HP SOA Assessment** utilizes the HP SOA Agility Assessment to help you develop a comprehensive roadmap to guide the adoption of SOA across your enterprise.



- **HP SOA Governance and Architecture** establishes an SOA Architecture Program Office to oversee enterprise architecture and the SOA governance model as your enterprise is transformed.
- **HP SOA Enablement** leverages the results of the Governance and Architecture service to prepare your infrastructure for SOA implementation.
- **HP SOA Service Development** helps you define, develop, and deploy SOA business and IT services across your enterprise, line of business, or department, as well as at the project level.
- **HP SOA Software Development** provides volume and scale in the development and delivery of business and IT services to improve productivity from your deployment teams through the use of our global software development capability.
- **HP SOA Management** helps enterprises gain control of SOA adoption with management support that includes lifecycle management, services management, monitoring, auditing, analysis, service-level agreements, and policies.

#### **HP OpenView SOA Manager**

HP OpenView SOA Manager is part of the HP OpenView suite of management products. HP OpenView SOA Manager provides you with a single, synchronized view of all business and IT services and their inter-relationships.

This view allows you to automate tasks, allocate and monitor resources, and analyze response capabilities for better performance. When shared by business and IT users, this graphical look at the overall enterprise can significantly enhance communication and decision-making.

HP OpenView SOA Manager works by relying on models to describe and control relationships between loosely coupled services. Users can see, through a graphical model, the interdependencies between virtualized business and IT services. This model is stored and can be called upon when various business and IT changes occur (for example, a change in quality of service [QoS] metrics or a revision to load-balancing or capacity objectives).

#### **HP SOA Competency Centers**

To better respond to customer needs throughout the world, HP has developed four SOA Competency Centers, staffed with SOA experts (from both HP and our certified partners) who have extensive skill in architecture design, consulting, software design, and hardware deployment. Located in France, the U.S., India, and Japan, these centers include demonstration environments, where businesses can see first-hand how SOA solutions can enhance an enterprise. The centers perform SOA proof-of-concept tests, benchmark demonstrations, presale support, and custom software and hardware demonstrations.

With HP, you get the immediate advantage of our proven success in combining people, process, technology, and partners to achieve the greatest value from your business and IT environment.

## The HP advantage: choice, SOA management, and multi-platform expertise

SOA is first and foremost about architecture. For that reason, HP's SOA approach is solution-led, focusing on a service-based architecture that offers enterprise customers unique value through a choice of leading middleware providers and ESB vendors. HP has unmatched expertise in heterogeneous environments. We can help a customer by developing an SOA solution that combines the right investment strategy and the right agility benefits to transform your enterprise. HP provides all the elements needed for a successful SOA implementation: end-to-end SOA services, a choice of middleware, HP OpenView SOA Manager, strategic partnerships, and talented architects with exceptional skills in multi-platform environments and business systems.

### A collaborative approach

Collaboration differentiates HP solutions. With HP, you get the immediate advantage of our proven success in combining people, process, technology, and partners to achieve the greatest value from your business and IT environment. This is particularly true in our SOA solutions,

where we can offer you access to thousands of HP professionals worldwide, HP OpenView SOA standards, HP industry-standard servers, best practices based on HP Global Methods and industry certifications, and strategic partnerships with other major players in SOA and Web services (Microsoft, BEA, and SAP, among others). Collaboration also means we partner closely with you—helping you design, build, integrate, manage, and evolve your SOA solution for increased agility.

### Leadership in innovation

Each year, HP technological innovation delivers approximately \$75 billion in new products and services and secures thousands of patents. HP is at heart a technology company, fed and fueled by progress and innovation.

Key components of the HP innovative advantage include:

- A wealth of technology, tools, and best practices poised for global delivery
- A position among the top three consulting and system-integration providers worldwide (according to IDC)
- 65,000 service professionals with unmatched technical expertise in 170 countries, including:
  - 5000+ consultants for Java™ Platform, Enterprise Edition and Microsoft® .NET
  - 6,500 Linux® specialists
  - 1,200 solution architects
  - 23,000 Microsoft trained specialists
  - 5,000 Microsoft certified engineers
  - 7,500 Internet/network consultants
  - 18,000 UNIX®-experienced engineers
  - 6,000 experienced Cisco engineers
  - 5,300 OpenVMS engineers
  - 2,100 project-management professionals
  - 10,000+ software professionals

## For more information

To learn more about how HP solutions for SOA can help your enterprise, contact your local HP representative or visit: [www.hp.com/hps/](http://www.hp.com/hps/)

To learn more, visit [www.hp.com](http://www.hp.com)

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