

SOA OVERVIEW

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Agenda

- **Evolution**
- **SOA Introduction**
- **Key Components**
- **Architecture**
- **Business Benefits**

Evolution: Technology Perspective

**Early Days,
Needed a way to
re-use
Their code**

**concept
of
modular
design**

**Maintenance
problem**

**needed
a higher level
of abstraction**

**Object Oriented
Software**

**Again it was just a
reuse of code
not the functionality**

**Reuse and
maintain
functionality,
not just code**

**component-based
software**

**doesn't address all
of the complexities**

We face complex issues like distributed software, application integration, varying platforms, varying protocols, various devices, the Internet, etc.

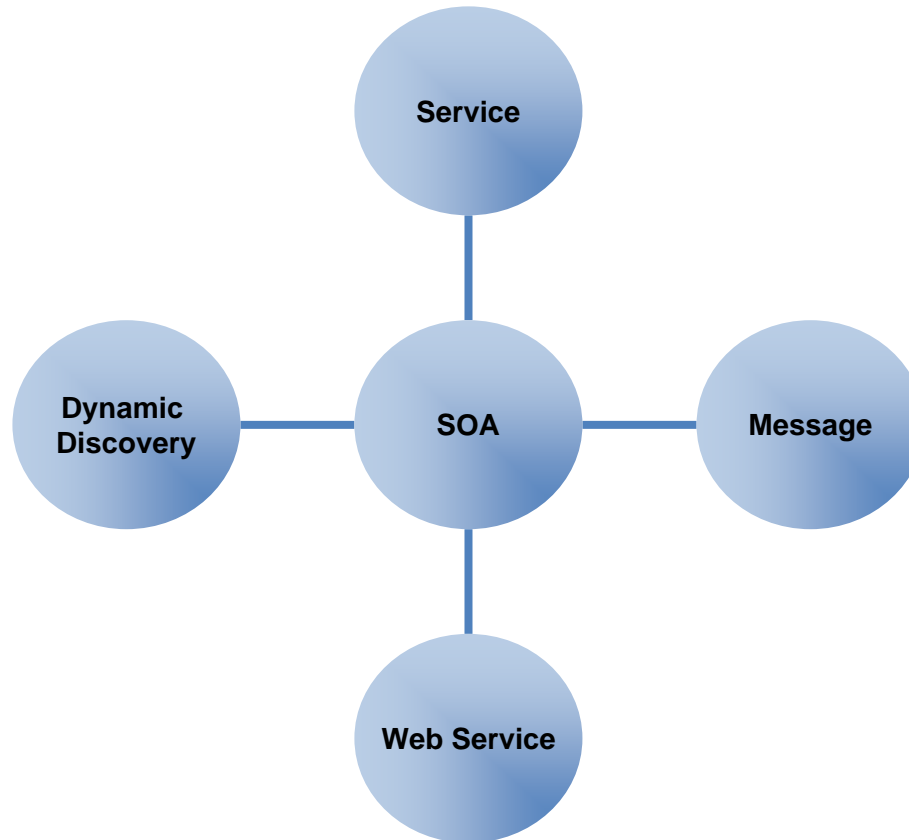
Is SOA a solution?

Yes, Let's take a step by step look

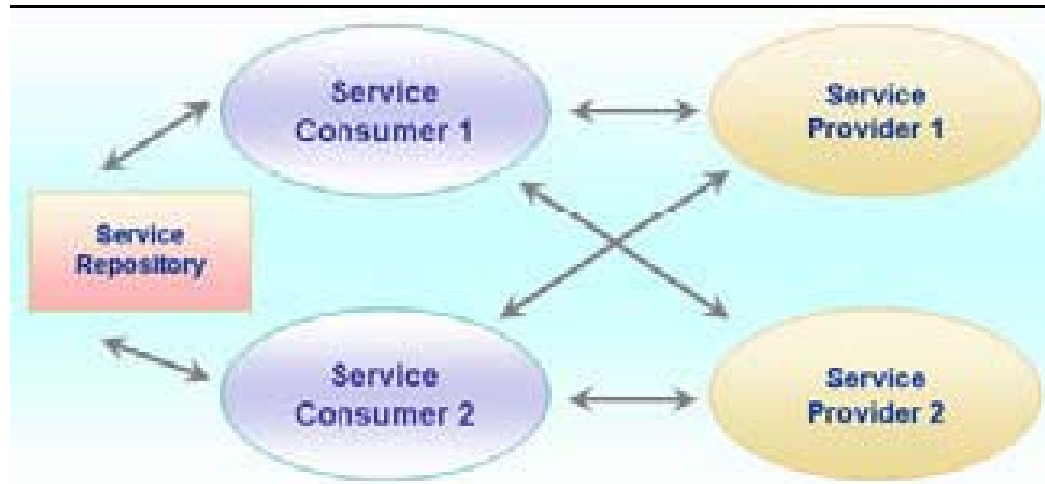
What is SOA?

- **Service oriented Architecture (SOA) is particularly applicable when multiple applications running on varied technologies and platforms have to communicate with each other.**
- **SOA is “an architectural style whose goal is to achieve loose coupling among interactive software agent/services.**
- **A new paradigm that supports modularized implementation of services.**

Key Components of SOA



Key Components of SOA: Service



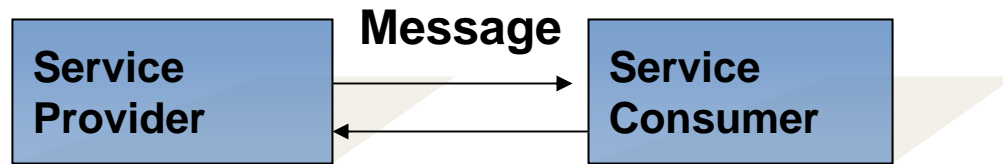
Service repository: A service repository

Service providers: A service provider is a component or set of components that execute a business function in a stateless fashion, accepting predefined inputs and outputs.

Service consumers: A service consumer is a set of components interested in using one or more of the services provided by service providers.

Key Components of SOA: Message

- Service providers and consumers communicate via messages. Services expose an interface contract. This contract defines the behavior of service and the message they accept and return.



- Because the interface contract is platform and language independent, so should be the message.
- Therefore, messages are typically constructed using XML.

Key Components of SOA: Dynamic Discovery

- In SOA, Dynamic discovery is done through directory service, which acts as an intermediary between providers and consumers.

- Providers register with the directory service and consumer query the directory service to find service provider.

- Embedding a directory service within SOA accomplishes the following:
 - Scalability of services.
 - Decouples consumers from providers.
 - Allows hot updates of services.

Key Components of SOA: Web Service

➤ **Web services play a major role in SOA. This is because web services are built on top of well-known and platform-independent protocols. These protocols include HTTP, XML, UDDI,, WSDL, and SOAP.**

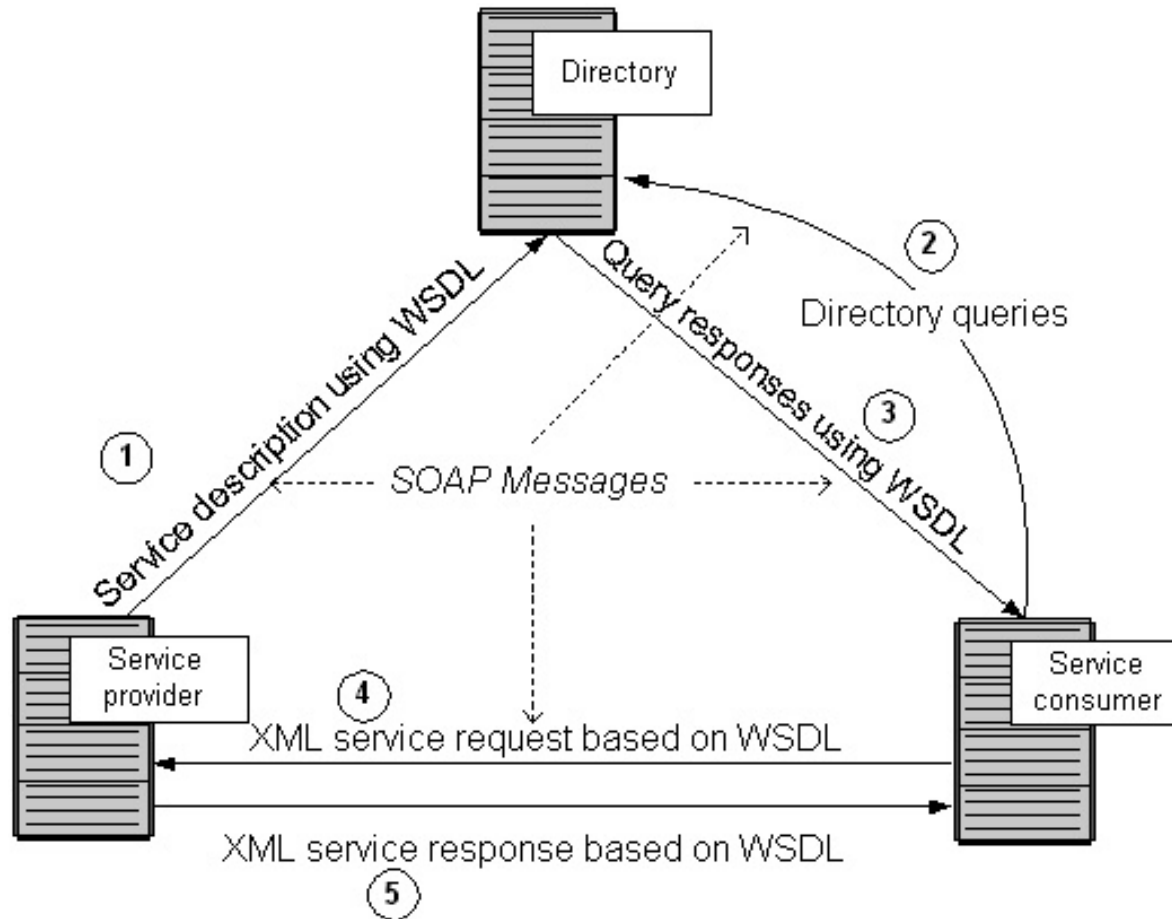
➤ **UDDI (Universal Description, Discovery, and Integration):**

- It's a directory service where businesses can register and search for Web services.
- UDDI stands for Universal Description, Discovery and Integration.
- UDDI is a directory for storing information about web services.
- UDDI is a directory of web service interfaces described by WSDL.
- UDDI communicates via SOAP.

➤ **WSDL forms the basis for Web Services. Using WSDL, a service provider describes its services and publishes it in the directory of services.**

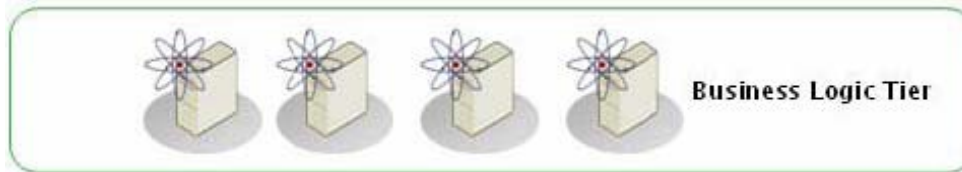
➤ **SOAP is a platform and language independent, simple XML based communication protocol to let applications exchange information over HTTP**

Key Components of SOA: Web Service

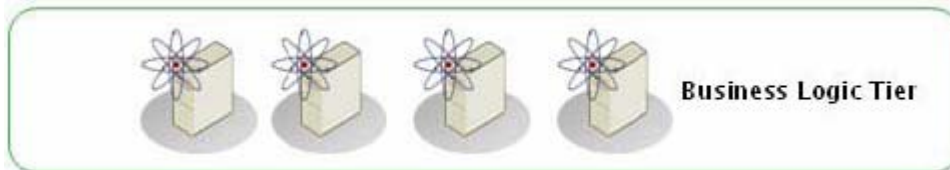
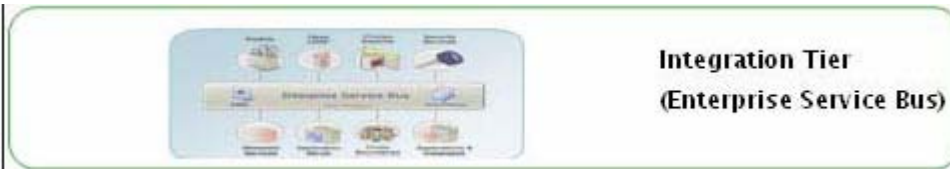


Traditional Applications

- Traditional application centric design focuses on user interface, Process logic and data.



SOA Application



Introduces a business process layer to manage the process steps

And integration layer to interoperate the applications providing these services.

Business benefits

➤ From the business point of view, SOA enables development of a new generation of dynamic applications that address a number of top-level business concerns that are central to grow and competitiveness.

SOA solutions promote:

- **Business Agility**
- **Technology Independence**
- **Stronger connections with customers and suppliers**
- **Collaboration.**

Thank You

