SAP NetWeaver: The NetWeaver Concept

Our topic coverage

The NetWeaver Concept
  What is it?

The NetWeaver Components
  How does it work?
What is NetWeaver?

Set of cooperative technologies that provide internal connectivity (integration) between SAP modules and external connectivity with other systems.

Why NetWeaver?

Diversity of systems, need for integration.

Need to expose SAP and other systems through various interfaces and applications (Web, mobile portal, etc.)

Need to manage and control master data across various applications.

NetWeaver allows a company to gain maximum benefit from their established infrastructure by leveraging existing content in a way that facilitates flexible deployment.
Data Exchange

Interfaces between systems often not reliable on output (data must be scrubbed, reformatted, etc.) or input (data integrity lost in "translation")

Although an ERP package "solves" the above, it does so only for the data it creates or manages itself. Interfaces with external systems still may have above problems.

Service Oriented Architecture

as its underlying framework.

![Diagram of Service Oriented Architecture](image-url)
Web Services

SAP initially coined term then later began using the term to refer to their take on

Enterprise SOA recognizes the need for implementing widely-varying and perhaps frequently changing business requirements.

Focus on exposing an application's data or functionality to other systems.

Service Oriented Architecture (SOA) Principles

Processes (program logic) can be broken down into small, manageable elements (enterprise services),

New processes can be composed without regard to the underlying processing or

Example services:
  Get Product Pricing
  Order Product
  Get Shipping Status Update
Service Oriented Architecture (SOA) Principles

Once services developed, they can be cataloged, shared, and used as needed in creation of Traditional applications being replaced with composed "services".

Development through composition.
Process of breaking applications into functional components and then later using them:

SOA Example
Permitting ease of integration

Early attempts at a SOA-like structure often failed due to problems such as run-time environment (components developed in different languages, etc.) not easing reuse. **Web Services** solve this problem by using Internet standards (developed with heterogeneity in mind) and protocols (HTTP for transport, XML for payload, etc.)

Once a service developed to address a needed functionality (check customer's account status) can be easily reused in various other business process compositions.

Use of SOA also facilitates inter-company integration (supply chain integration, etc.)

SOA with SAP

NetWeaver comes with a large collection of Enterprise Services, based on SAP functionality, that a company can begin using in their customized processes and deployment. (Pre-configured building blocks).

**Deployed content consistent with business rules.**

Customers can develop additional functionality or take advantage of shared elements from others.

Example...marketing executive wants a "dashboard" application that allows him to monitor in real-time various activities, and control/manage pricing changes on some products.
Benefits of Enterprise SOA

Reduced costs (through reuse)

Ease of developing differing deployment options (browser based, client application based, etc.)

Support for outsourcing (component development or solution development)

Compliance insurance

Cross-company collaboration

Uniform platform for application development

SOA vs. Enterprise SOA

Both are service oriented (i.e. request/response)

Both are Web oriented in deployment technology

While both work on the basis of shared services, Enterprise SOA also encompasses the idea of a shared business context.

SOA and ESOA provide request/response. ESOA ensures that both parties are "on the same page" and fully understand the communication.

ESOA ensures that business rules are not violated through exposed services.
Example

Delete Order

Delete Order
Check Manu Status
...
Cancel Order

ESOA and NetWeaver

NetWeaver encompasses tools for service development, service composition, and service deployment.

Implemented in:

Comprises functionality of
An integration broker

Enterprise Service Bus (ESB)

Integral part of SAP NetWeaver platform even if only used for SAP-to-SAP integration.
SAP NetWeaver Process Integration

- SAP ERP
- SAP SCM
- Enterprise Portal
- Other
- “Legacy” SAP R/3
- Web Services
- xApps
- SAP SRM
- SAP PI

“Legacy” SAP R/3

Other

Web Services

xApps

SAP SRM

SAP PI

SAP ERP

SAP SCM

Enterprise Portal