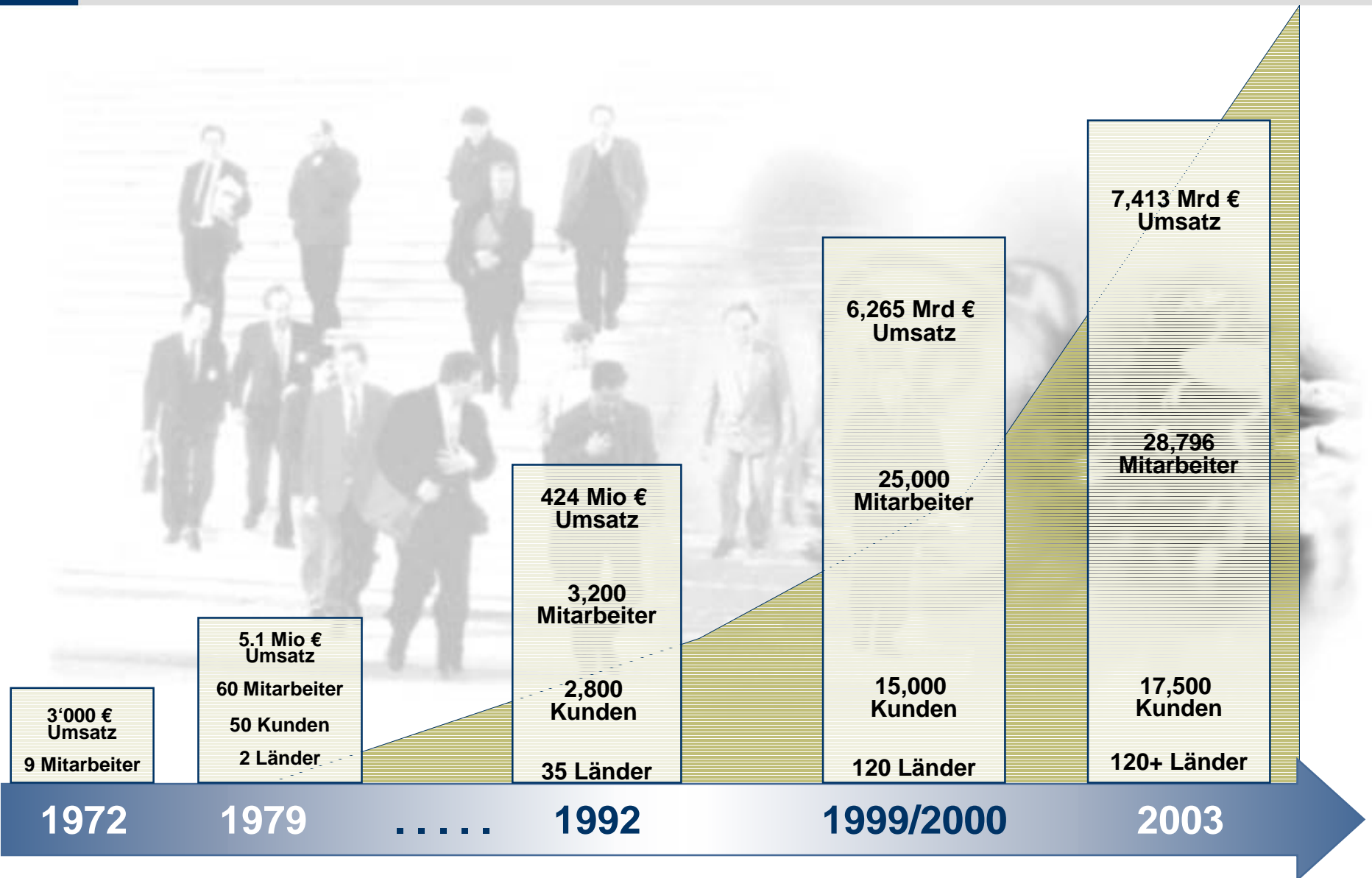




# **SAP** **Facts and Figures**



# SAP Meilensteine in über 30 Jahren





## Hasso Plattner

1972 gründete er zusammen mit vier Kollegen von IBM die SAP.  
Der Nachrichtentechniker wurde an der Generalversammlung vom 9. Mai 2003 zum Verwaltungsrats-Präsident gewählt.  
In dieser neuen Rolle fokussiert sich Hasso Plattner als Chief Software Advisor zusätzlich auf die mittel- und langfristigen technologischen Ausrichtungen der SAP.



## Henning Kagermann

Vorstandssprecher seit 1998 und Vorstandsmitglied seit 1991.  
Der Physiker und Mathematiker trat 1982 in die SAP ein.

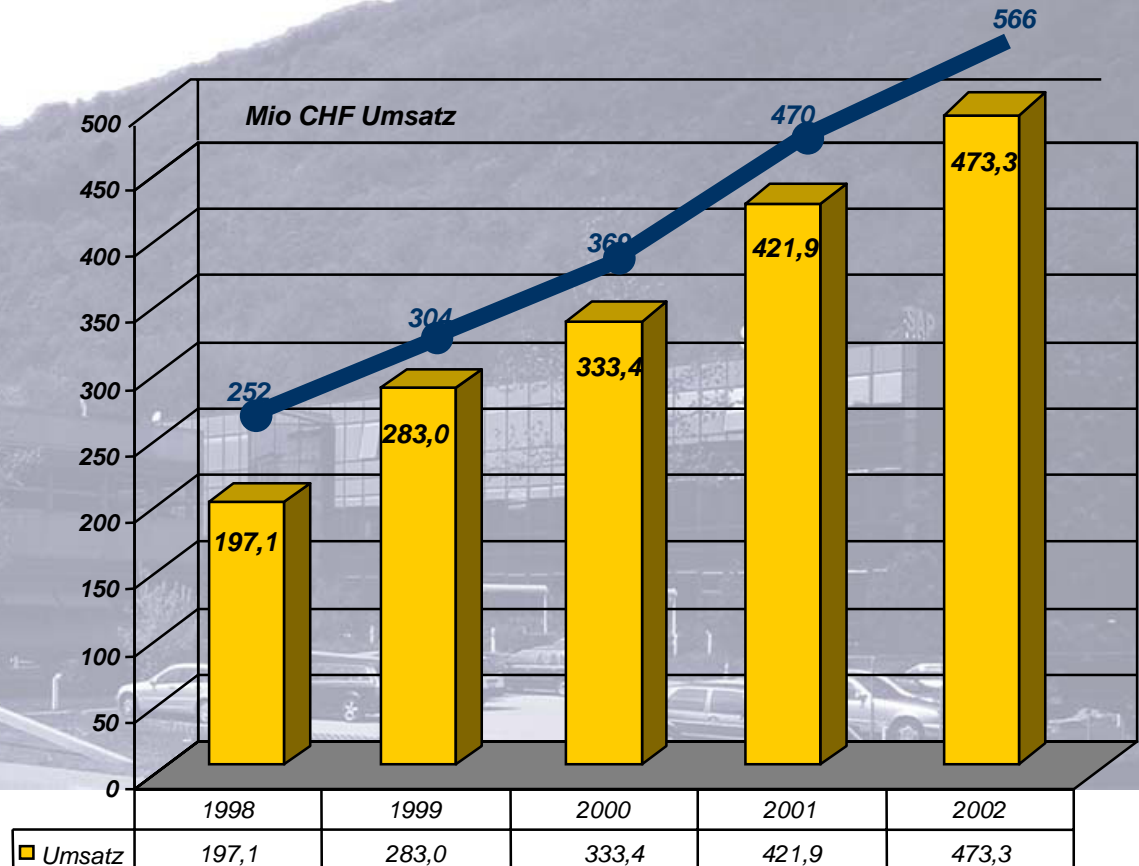
Seit 9. Mai 2003 ist er allein verantwortlicher CEO und Vorstandssprecher und steht in dieser Rolle auch dem Field Management Board vor.

# SAP (Schweiz) AG

**1972 SAP AG, Walldorf**

**1984 SAP International  
Biel / Schweiz**

**1992 SAP (Schweiz) AG**



**Biel  
Regensdorf  
Lausanne**

**Hauptsitz  
SAP Solution Center  
World Trade Center**

# Marktorganisation der SAP (Schweiz) AG



**Large Accounts**  
60 Unternehmen

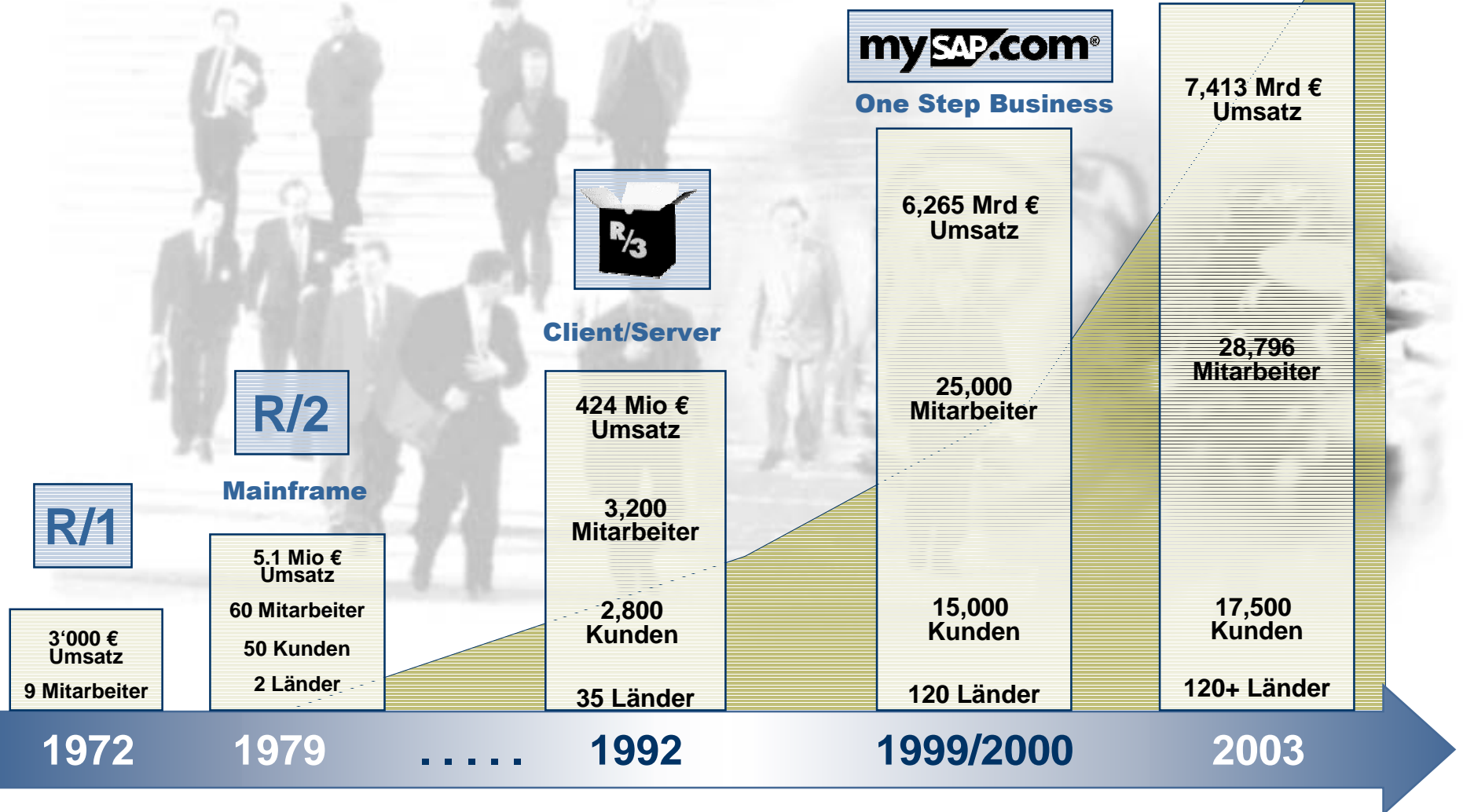
**National Accounts**  
> 200 Mio. CHF Umsatz

**KMU**  
< 200 Mio

Branchenorientierte Geschäftseinheiten Kundenberatung	Financial Services Banking	Financial Services Insurance	Discrete Industries	Process Industries	Public & Healthcare	Retail & Consumer Products	Services Industries	Suisse Romande	SMB / KMU Channel
SAP Consulting									
SAP Education									
Active Global Support									
Marketing & Alliance									
Corporate Services									

# SAP Meilensteine in über 30 Jahren

## mySAP Business Suite & SAP NetWeaver Enterprise Services Architecture

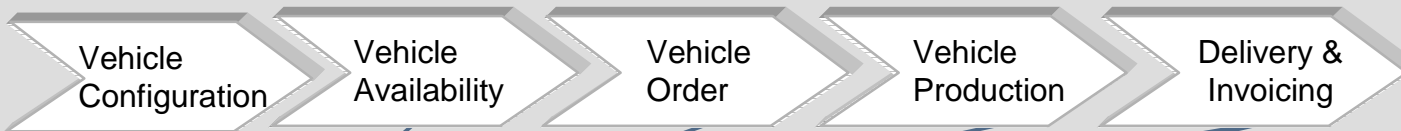


# ESA in Action

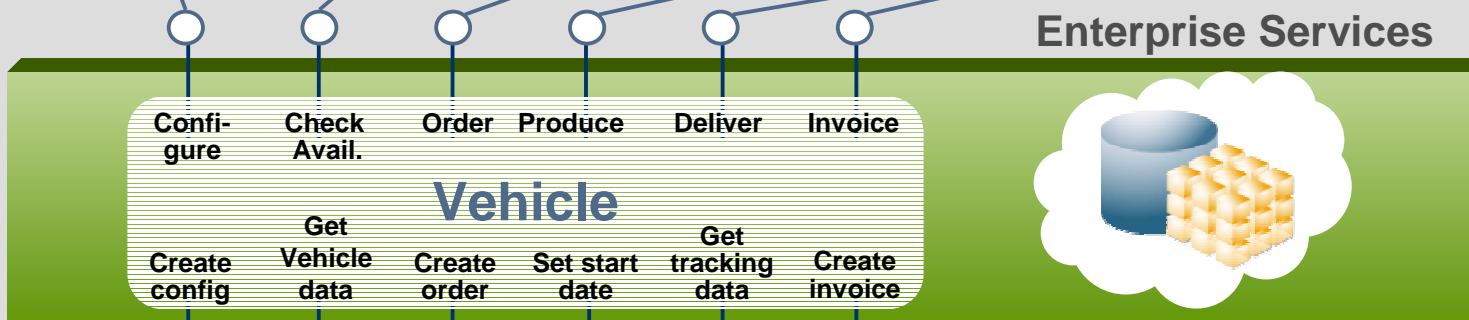
Example: Make-To-Order Process in the Automotive Industry



Internal and external Users



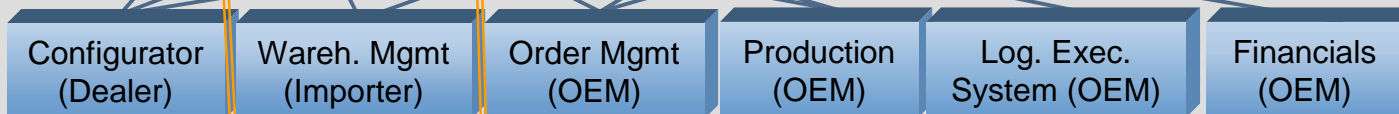
Composite Application



Enterprise Services

SAP NetWeaver™

Web Services Enablement

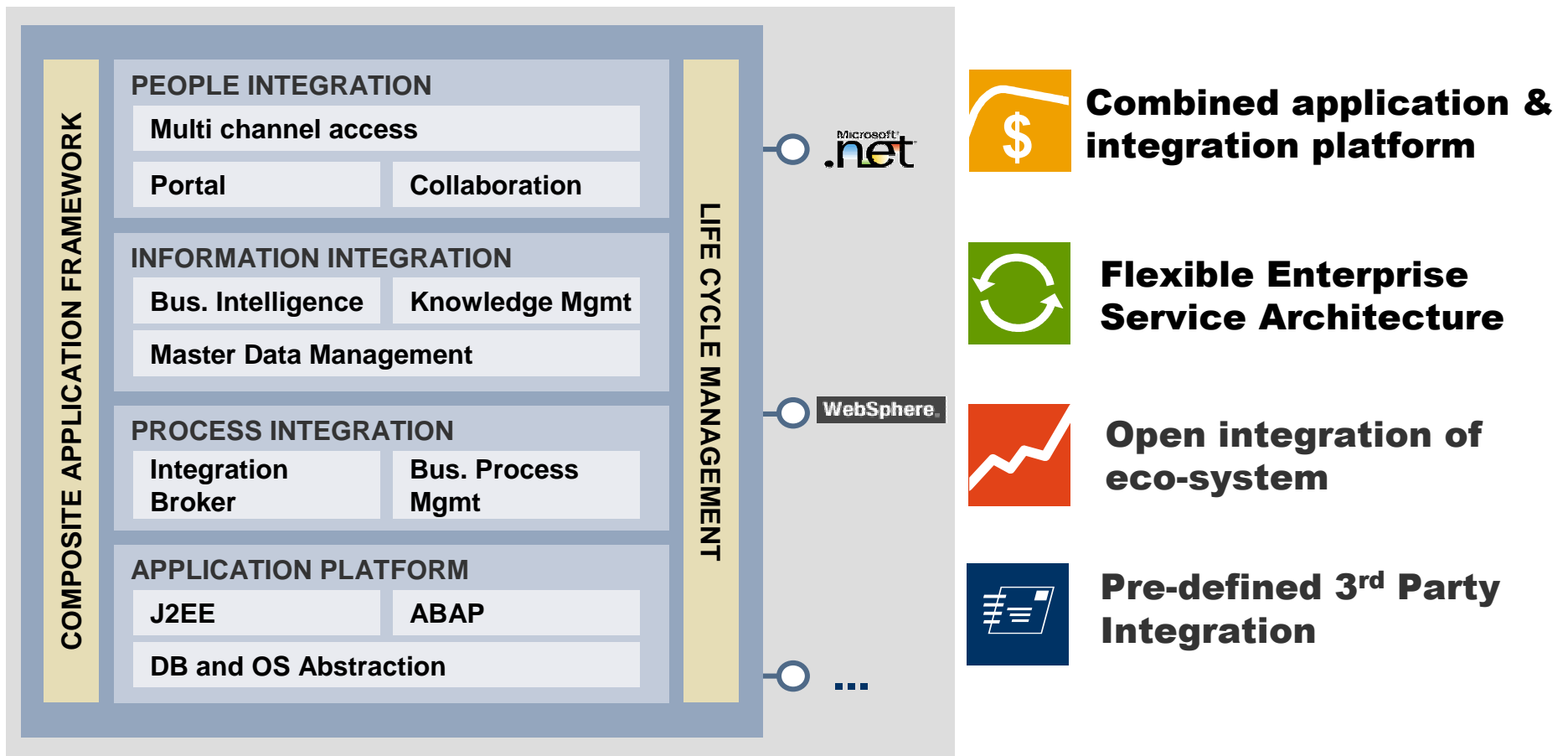


Enterprise Systems




# The Open Business Platform

## SAP NetWeaver







# **SAP Web AS 6.40**

**Gerald Eder**

**SAP Consulting**

# Agenda



**SAP NetWeaver**

**JAVA@SAP**

**SAP Web Application Server**

**Web Dynpro Technology**

**Web Service Infrastructure**

**Java Development Tools**

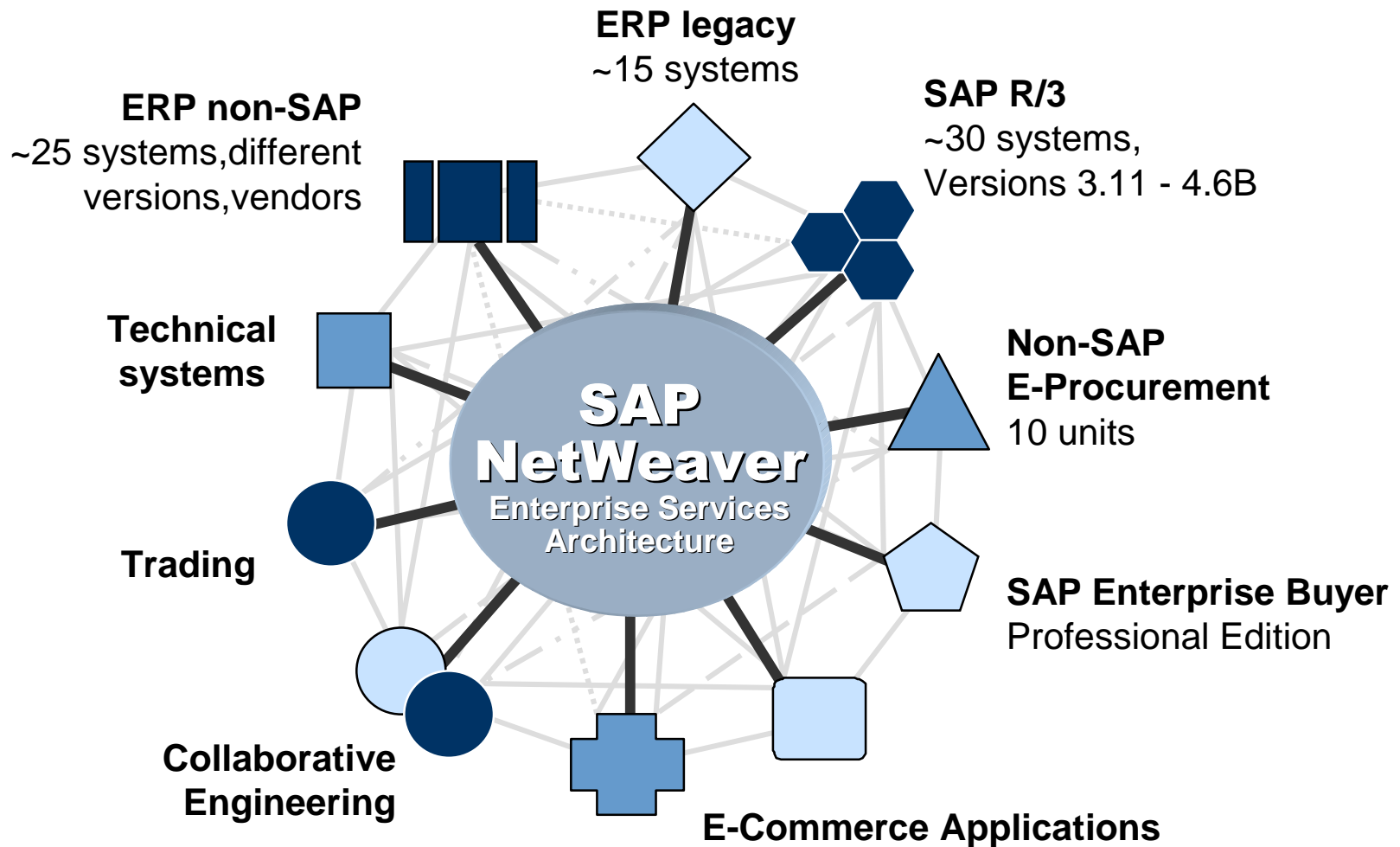
**Java Development Infrastructure**

**Summary**



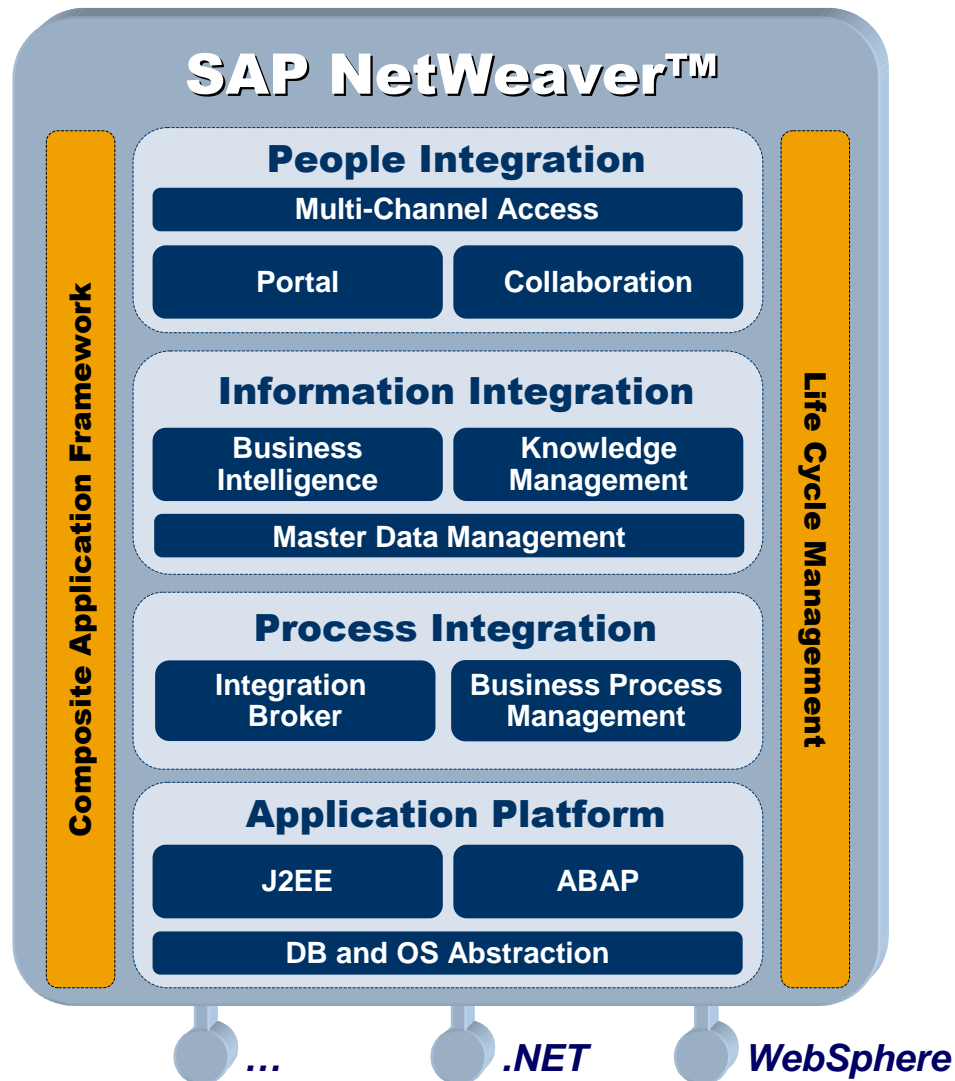
# **SAP NetWeaver**

# Creating One Application and Integration Platform



# SAP NetWeaver™

The total integration and application platform for lower TCO



Unifies and aligns people, information and business processes

- Integrates across technologies and organizational boundaries
- A safe choice with full .NET and J2EE interoperability

The business foundation for SAP and partners

- Powers business-ready solutions that reduce custom integration
- Its Enterprise Services Architecture increases business process flexibility



**JAVA@SAP**

# SAP in the Java Community Process

## SAP participates in JCP

- Participate in development of Java standards as #1 business solutions provider
- Member of the JCP Executive Committee
- Optimize Java standards for mission-critical business applications
- Leverage Java community standards and knowledge

## Example JSRs

- JSR-012 Java Data Objects (JDO)
- JSR-109 Implementing Enterprise Web Services
- JSR-112 J2EE Connector Architecture 1.5
- JSR-151 J2EE 1.4
- JSR-155 Web Services Security Assertions
- JSR-160 JMX Remoting 1.2
- JSR-168 Portlet Spec
- JSR-170 Content Repository API
- JSR-176 J2SE 1.5



# SAP Solutions Taking Advantage of Java/J2EE

## SAP Business Applications mySAP CRM, mySAP SRM, ...

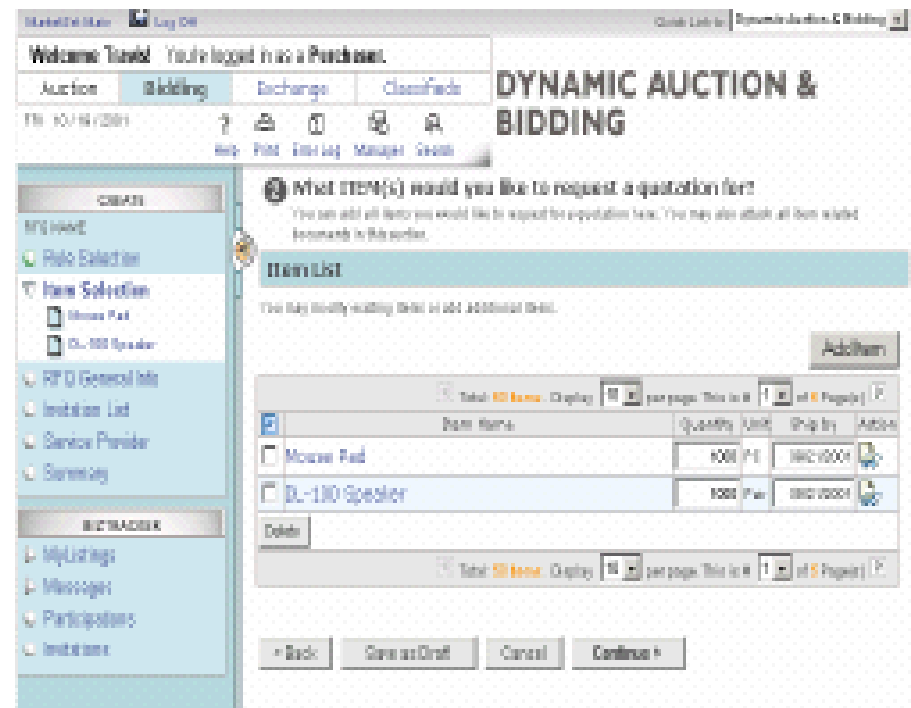
- Internet Sales
- Dynamic Pricing Engine
- Internet Customer Self Services
- Internet Pricing and Configurator
- Web Customer Support

## Enterprise Portal

- Core enterprise portal platform
- Java-based infrastructure for presentation components
- Content management repository manager

## Exchange Infrastructure

- Integration Repository
- Integration Directory
- Integration Builder



The screenshot shows the SAP Dynamic Auction & Bidding interface. The top navigation bar includes 'Auction', 'Bidding', 'Exchange', and 'Classified'. The main content area is titled 'DYNAMIC AUCTION & BIDDING' and contains a question: 'What item(s) would you like to request a quotation for?'. Below this is an 'Item List' table with columns for 'Item Name', 'Quantity', 'Unit', 'Ship by', and 'Action'. The table lists two items: 'Mouse Pad' and 'DL-100 Speaker'. The interface also includes a 'Back' button and a 'Continue' button.

Item Name	Quantity	Unit	Ship by	Action
<input type="checkbox"/> Mouse Pad	1000	Pcs	0001/0001	
<input type="checkbox"/> DL-100 Speaker	1000	Pcs	0001/0001	



# SAP Advantages

## Quality

- 3000 SAP developers use Java
- 500 SAP developers work on the Basis Java Platform



# Why SAP let the business logic in ABAP ?

## Large application means REALLY large

- Comes in a box with 20 CD's
- Installs in three days!
- Installs a database with over 16.000 tables
- A single action may touch up to 5.000 tables

## Facts to know

- EVERYTHING is in one large database (programs and data)
- Development always is on the server through remote Interface
- SAP Software is generally written in ABAP, an object and procedure oriented, interpreted language running on a virtual machine that has a 40 MB executable



# **SAP Web Application Server**

# SAP Web Application Server

## Open System Architecture

### Shared facilities

- Common connectivity
- Common persistence

### Shared benefits

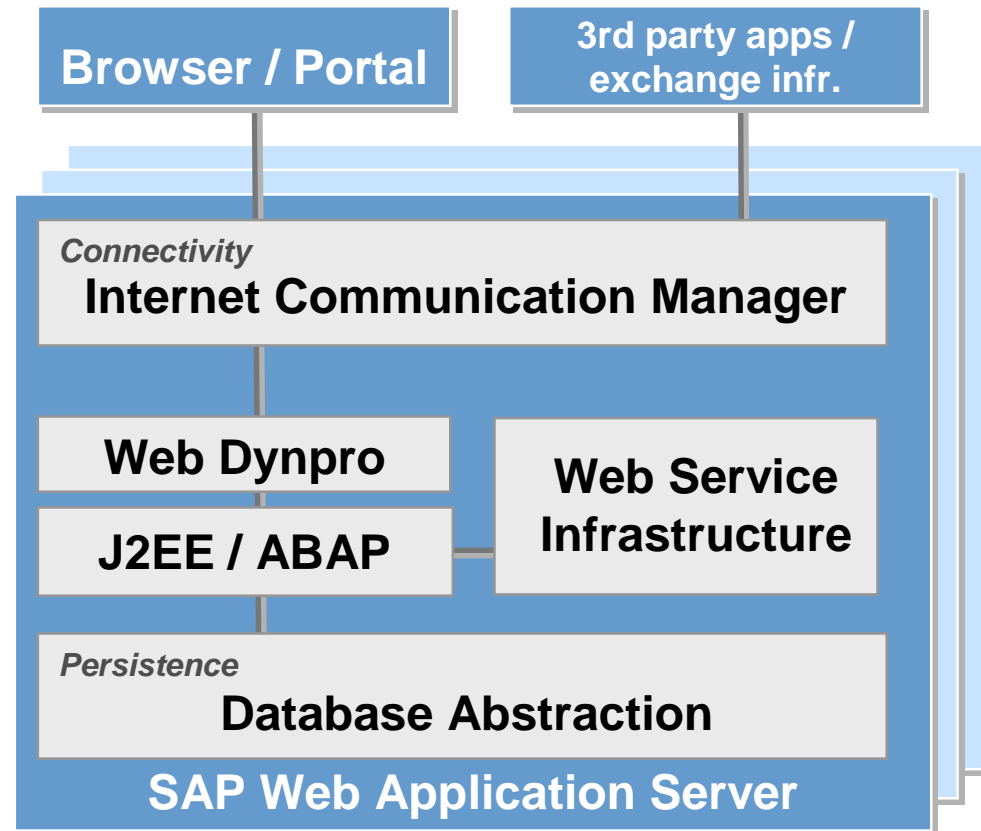
- Multi tier architecture
- Highly scalable and reliable
- Platform independence

### Common connectivity

- Different protocols (SOAP, HTTP, SMTP, RFC, FTP)
- Expandable
- Advanced caching

### Common persistence

- Database independence
- Scalable transaction handling
- Caching



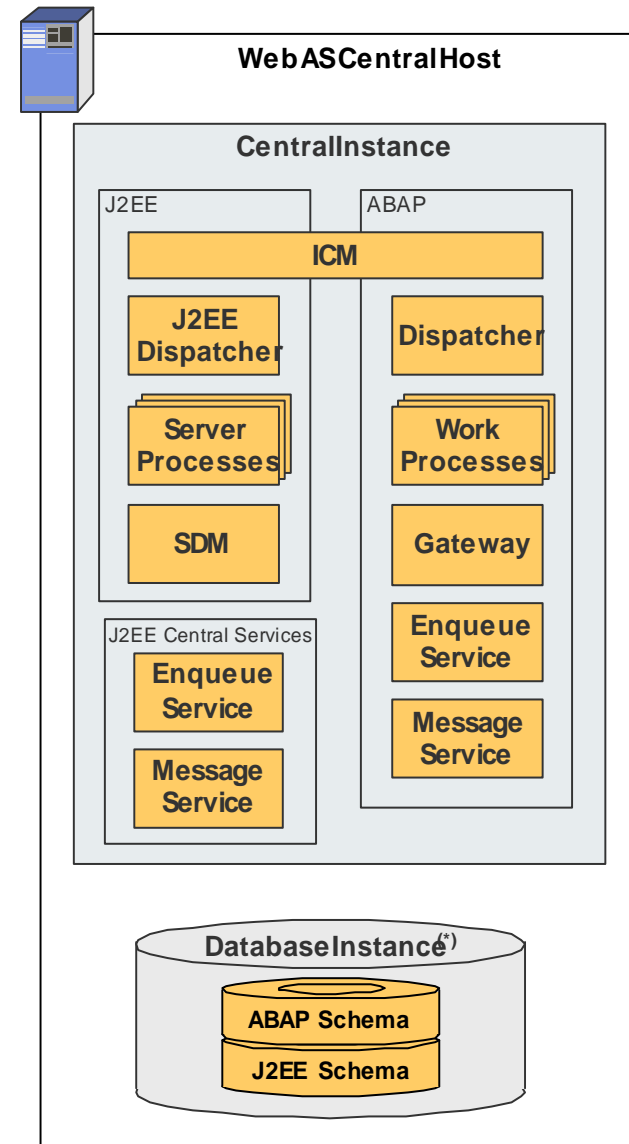
# Web AS 6.40: New J2EE Cluster Architecture

## Design goals for the new Architecture

- Better Scalability
- Better Performance
- Better Manageability
- Reuse of robust SAP base technology
- Better Integration into the SAP Web AS

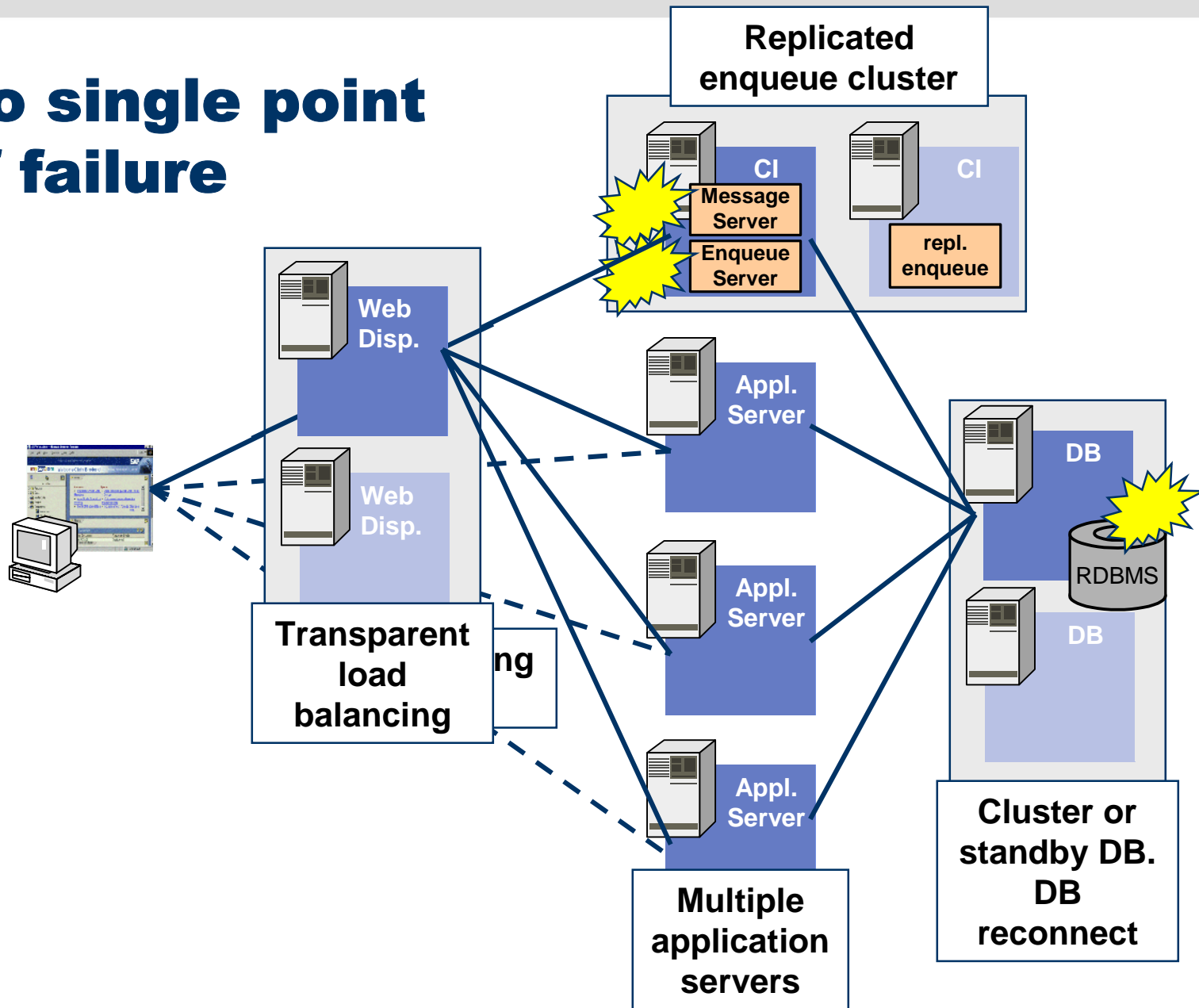
## Reuse know-how and coding from “Web AS classic”

- Use a central DB as configuration and application store
- Use the Enqueue as reliable lock handler
- Use the Message Server as message hub



# High Availability for SAP Web AS

**No single point of failure**



# Java Persistence: Goals

## Platform independence

- Support of multiple RDBMS
- RDBMS transparent for developer

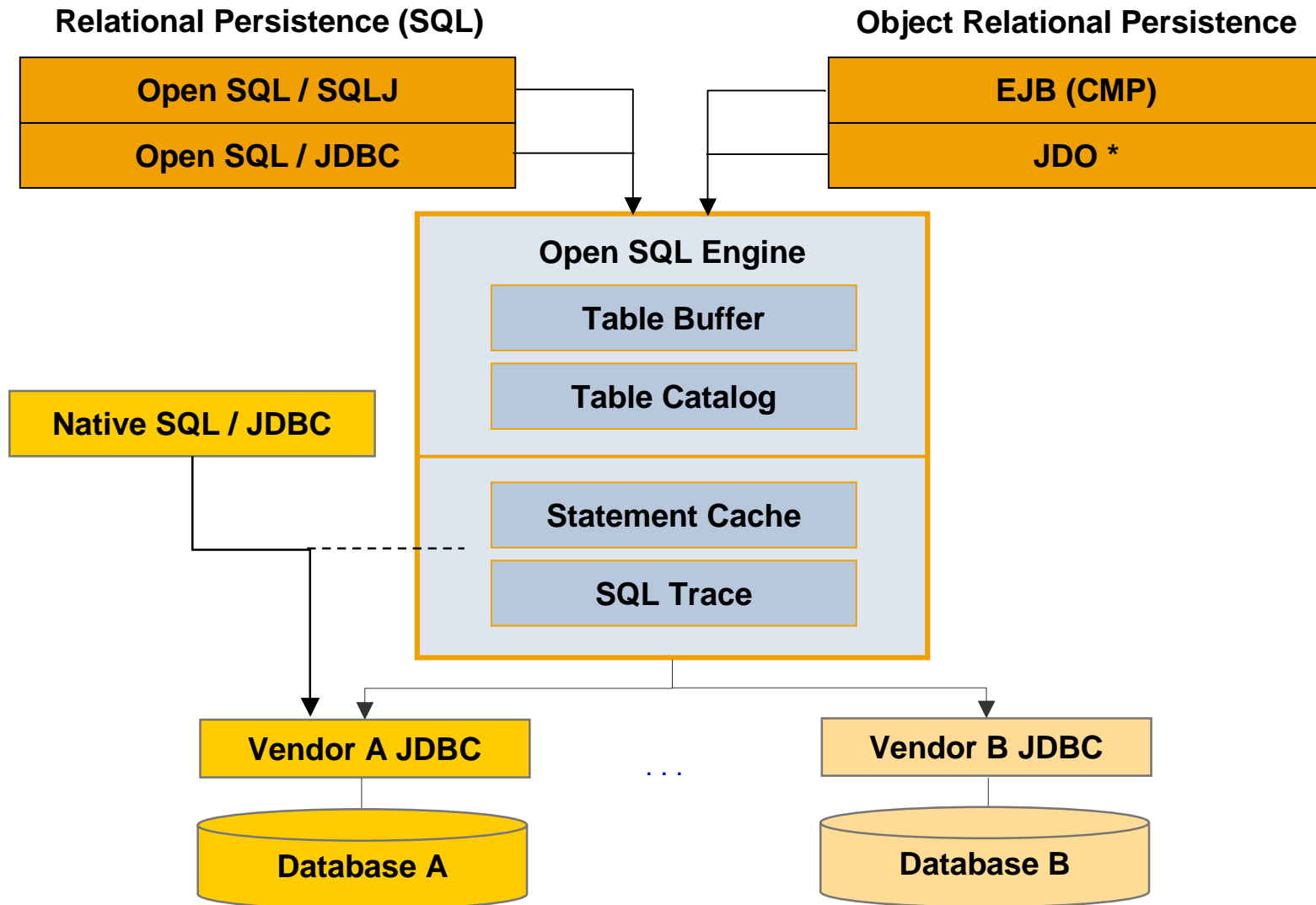
## Improved performance

- Table buffer
- Statement cache

## Monitoring

- SQL trace

# Open SQL for Java



\* Not supported in the SAP Web Application Server 6.40 Release





# Web Dynpro

# Web Dynpro: Goals

## Improve User Experience through a "High Fidelity Web UI"

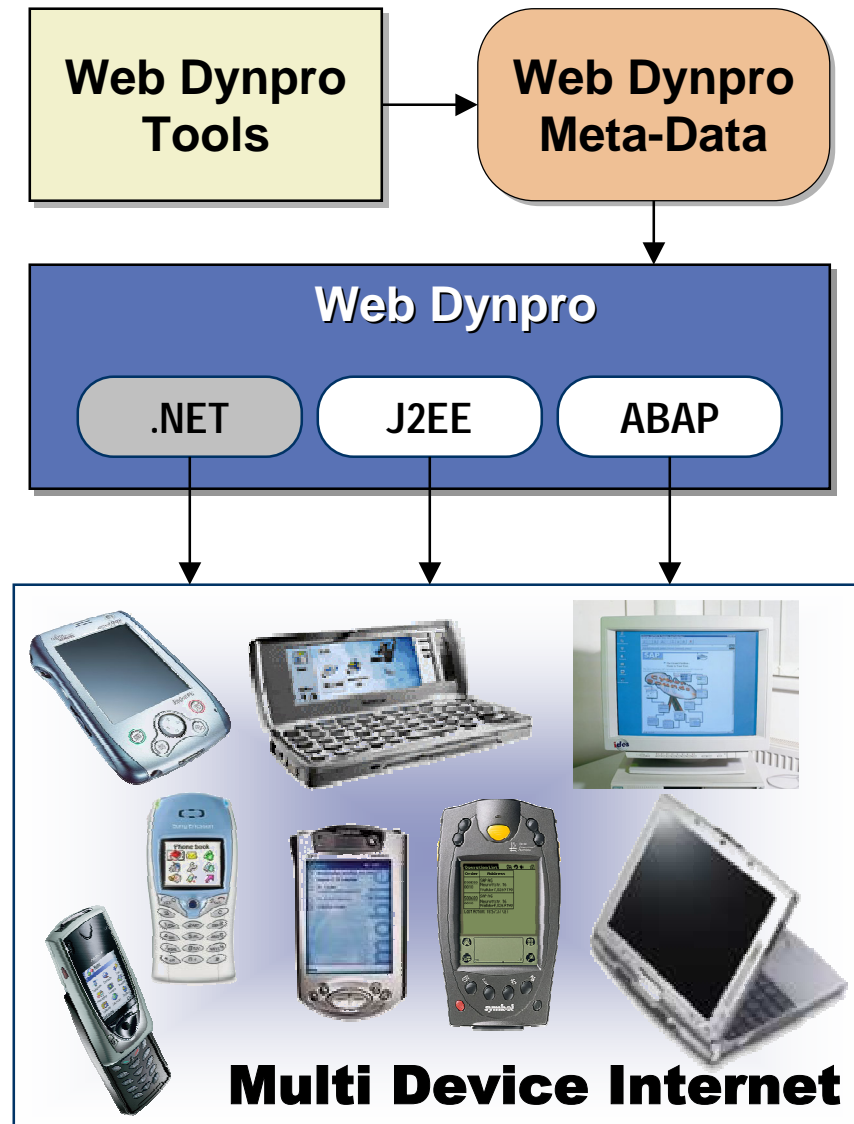
- browser based frontend, zero footprint
- flicker-free screen, minimal refreshes
- client-side dynamics
- minimal response times
- personalization of the user interface
- 508 accessibility compliance

## Deliver an Enterprise Quality Web Development Environment

- minimize coding, maximize design
- support reuse of components
- support web services and data-binding
- separate layout and programming logic

## Achieve Independence...

- from platform
- from UI technology



# Client-side Technology

## Performance

- Separation of data and layout
- Buffering and delta management to economize on network traffic
- Local dynamics to economize on roundtrips
  - ◆ Sorting, sizing, reordering

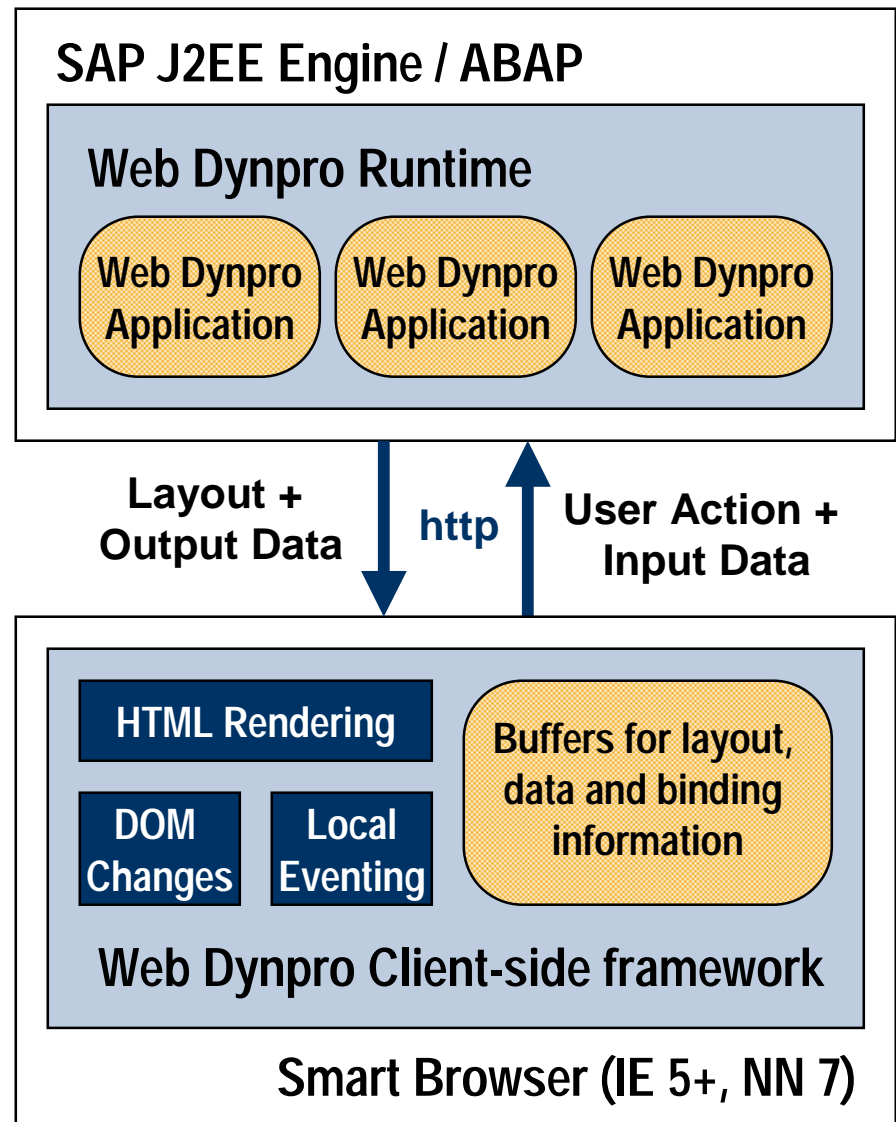
## Zero footprint on the client

- Generic framework in JavaScript

## On-Screen personalization

## Location-independent rendering

- Client-side for flicker-free screens
- Server-side for complex screens, older browsers, or mobile devices



# Web Dynpro Tools

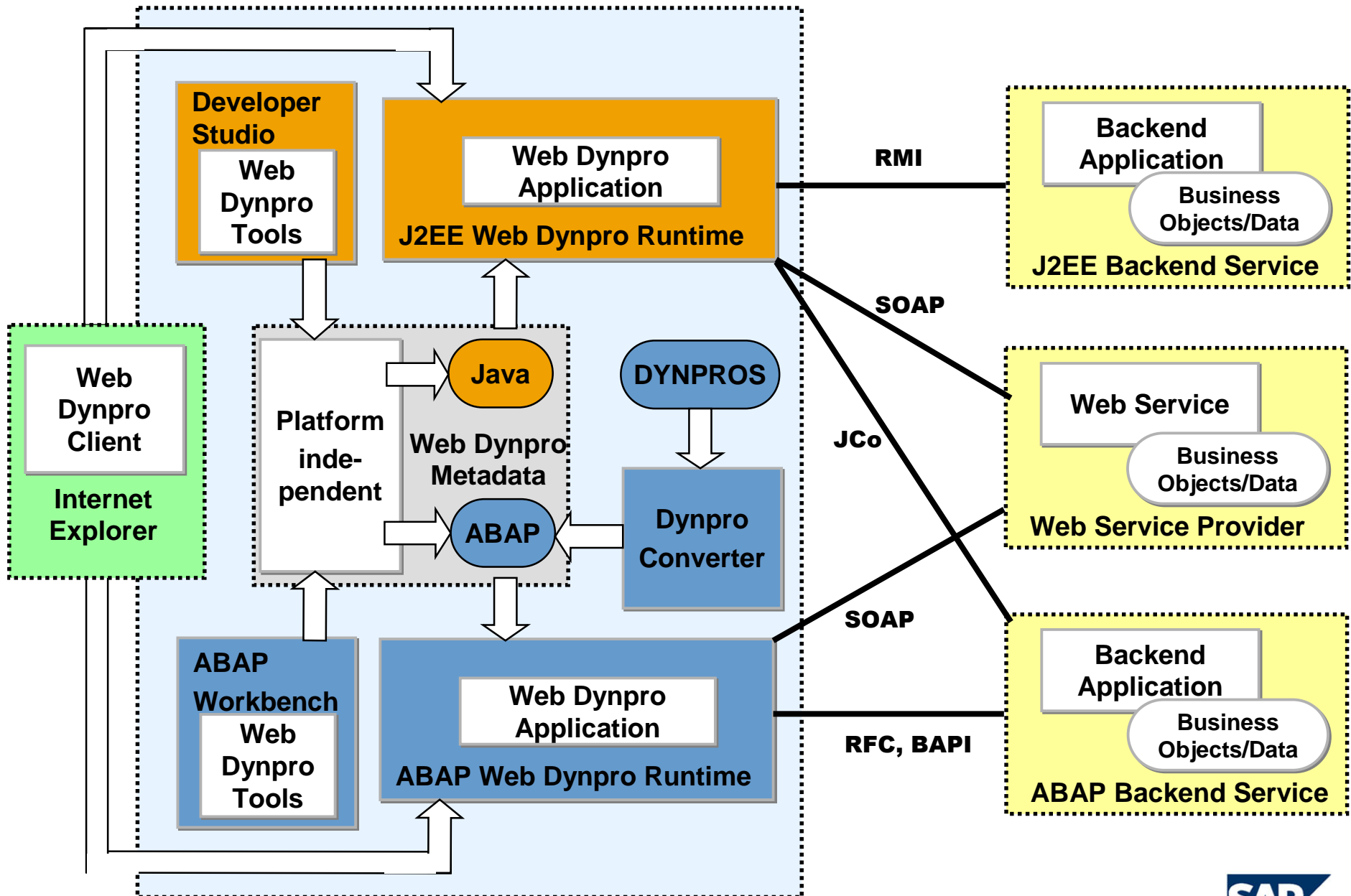
The screenshot displays the Web Dynpro Eclipse Platform interface. On the left, the **Web Dynpro Project Browser** shows a tree structure for the **Book2Fly** project, including components like **Book2Fly**, **Cars**, **Flights**, and **FlightsDetails**. Below the browser is the **Properties** window, which lists various properties for the selected element, such as **colSpan** (1), **hAlign** (left), and **width**.

The main workspace is divided into several views:
 

- Input Elements**: Shows a form with fields for **Customer Id.** and **Password**, a **Login** button, and a **Registration Statistics** section containing a line chart.
- new User**: A form with fields for **Title**, **Name**, **Street**, **ZIP**, **City**, **Country**, **Phone**, and **Email**, along with a **Register** button.
- Diagram View**: A UML-like diagram showing the structure of the **Book2Fly** viewset, including **TitleView**, **NavigationView**, and **FlightsInstance.FlightsInterfaceView**.

The **Registration Statistics** chart shows the **Kurs** (Y-axis, 50-198) over time (X-axis, Feb 2002 to Aug). The legend indicates **SAP - GD 20**. The text below the chart reads: "Letzter Kurs am 20.06.: 62,00".

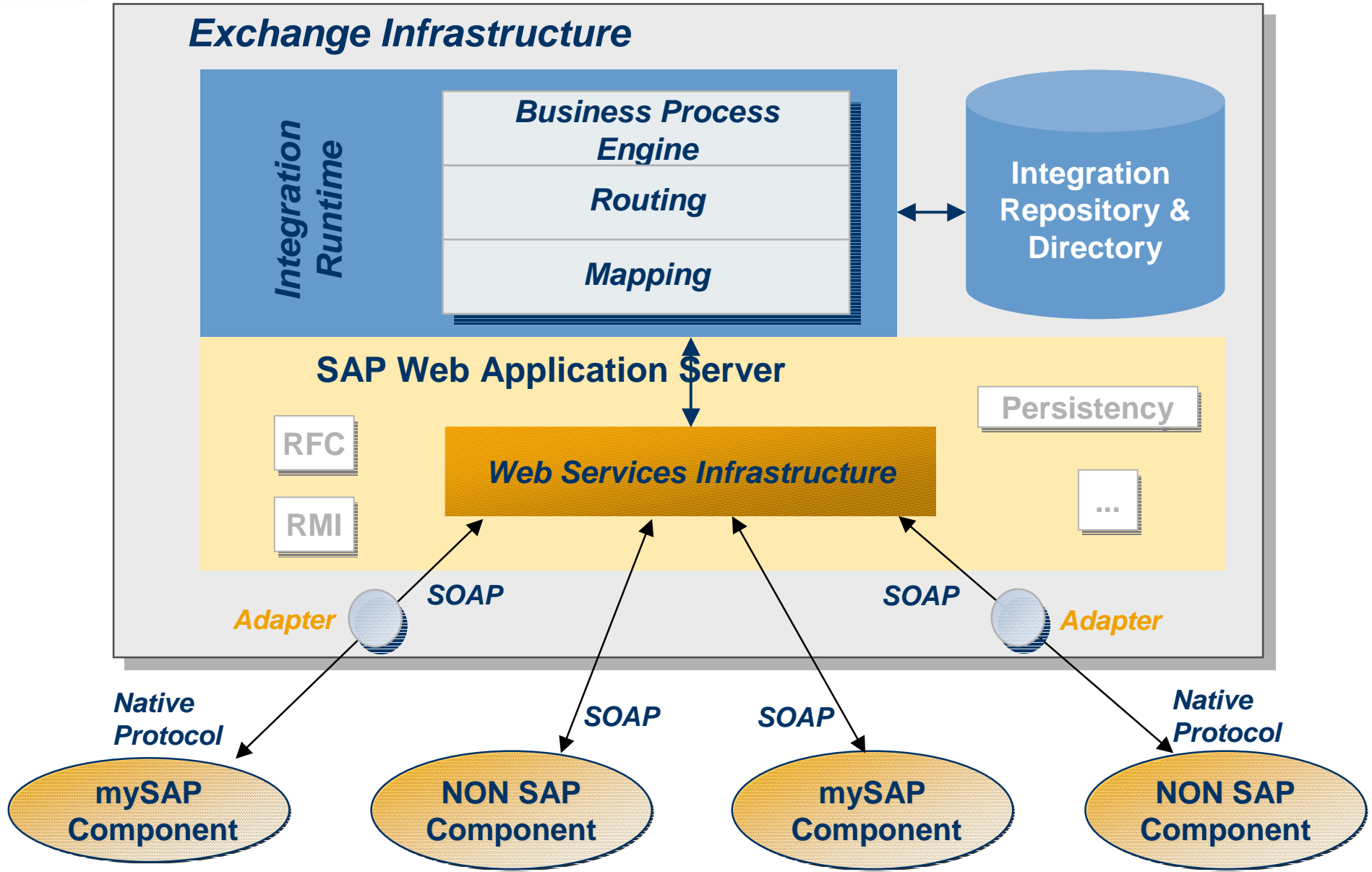
# Web Dynpro Across Multiple Platforms





# **Web Service Infrastructure**

# Exchange Infrastructure & Web Services





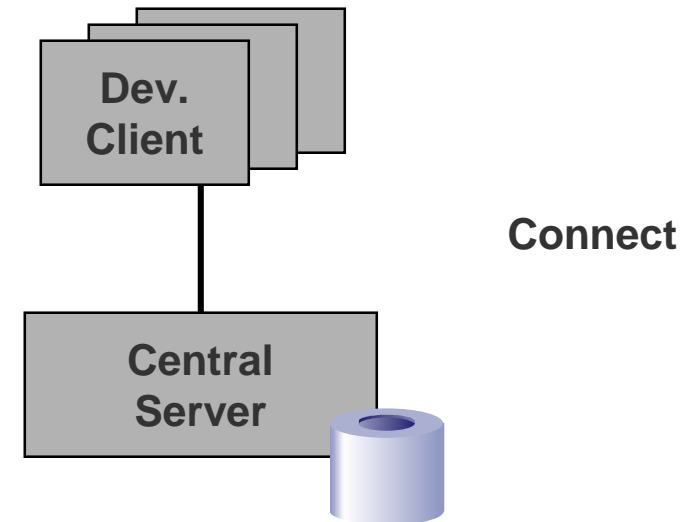
# **Java Development Tools**



# Development Environment ABAP/Java

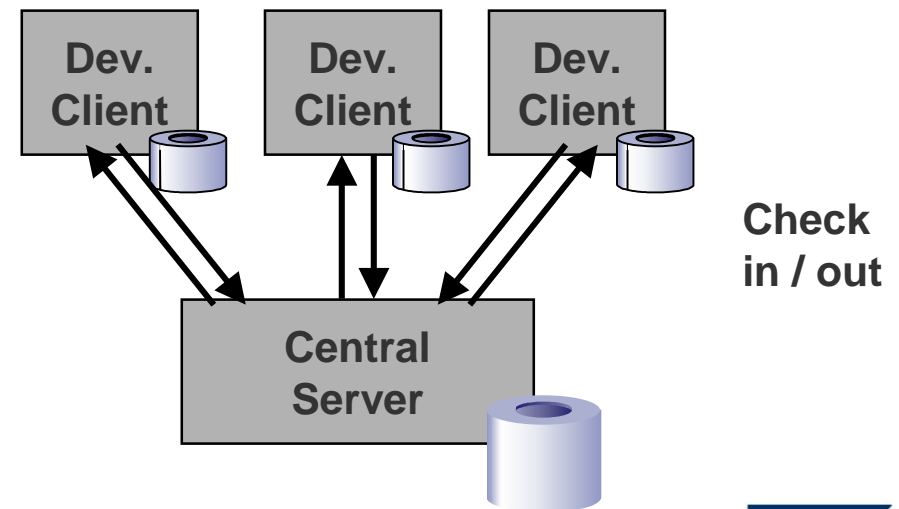
## ABAP

- Complete central environment for build and test
- Instant build
  - ◆ Minimal
  - ◆ Complete
- Continuous integration test



## Java

- Independent from central server
  - ◆ Availability
  - ◆ Performance
  - ◆ Offline usage
- Local files and folders
- Local test environment



# NetWeaver Developer Studio

Eclipse is an Open Source project

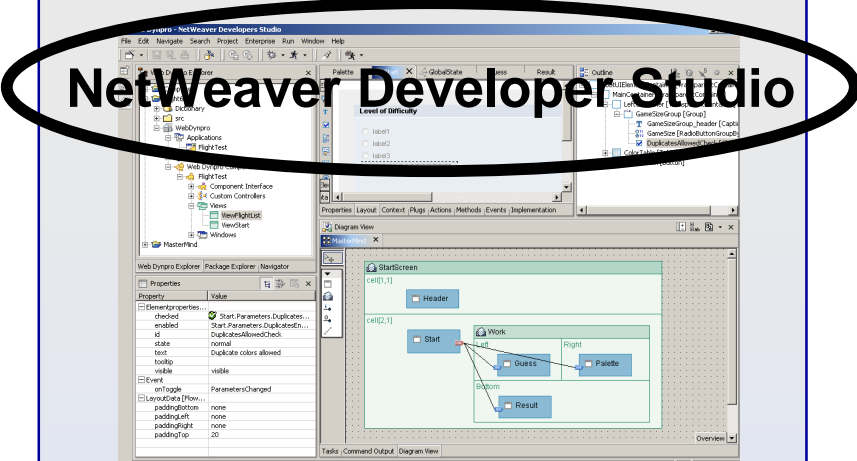
Eclipse consists of

- a complete Java (J2SE) IDE
- an open Tool Integration Framework

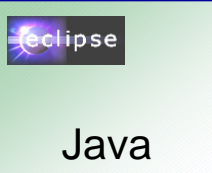






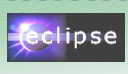
SAP provides various development tools (perspectives) integrated into Eclipse

Your NetWeaver Developer Studio can be extended by 3rd party Eclipse tools

- Already many tools available
- Strong industry drive



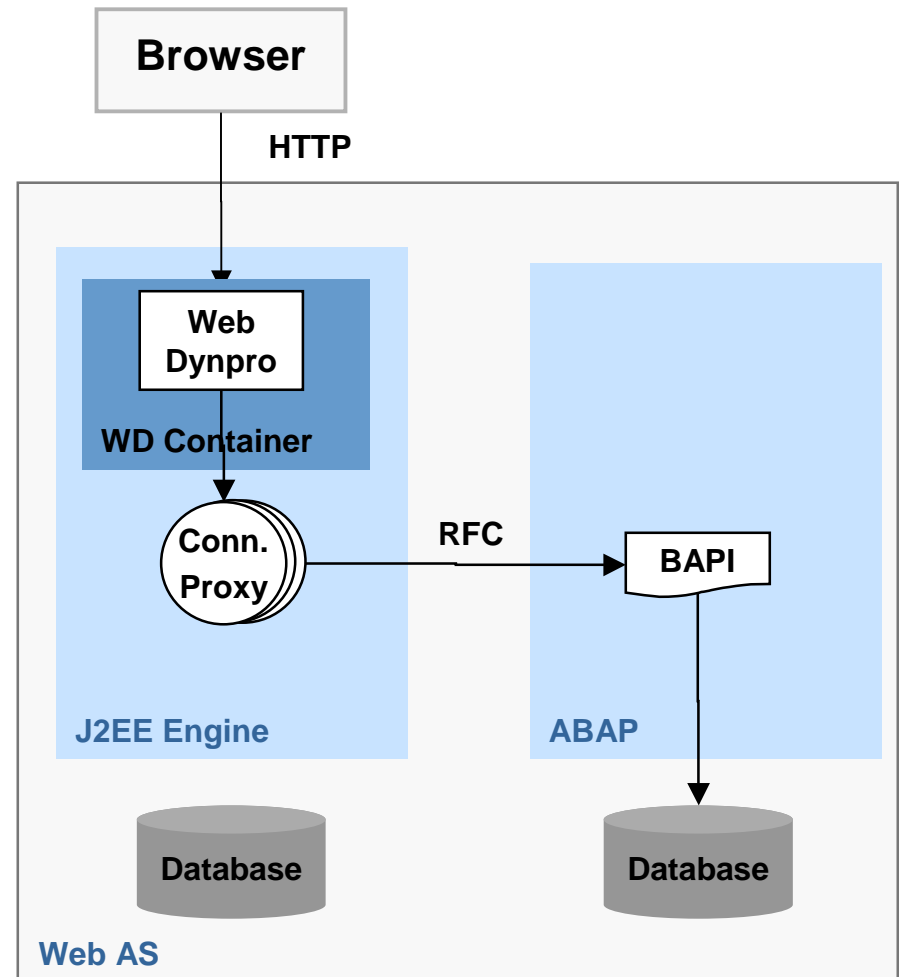
NetWeaver Developer Studio

 Java	 J2EE	 Web Services
 Java Dictionary	 Java Persistence	 Web Dynpro
 SAP Integration Framework		
 Eclipse Plugin Framework		

# Java Programming Model 1

## First step: Web Dynpro

- Proposed first use at SAP
  - ◆ Easy front end
  - ◆ Easy access to R/3 data
- Expected customer use



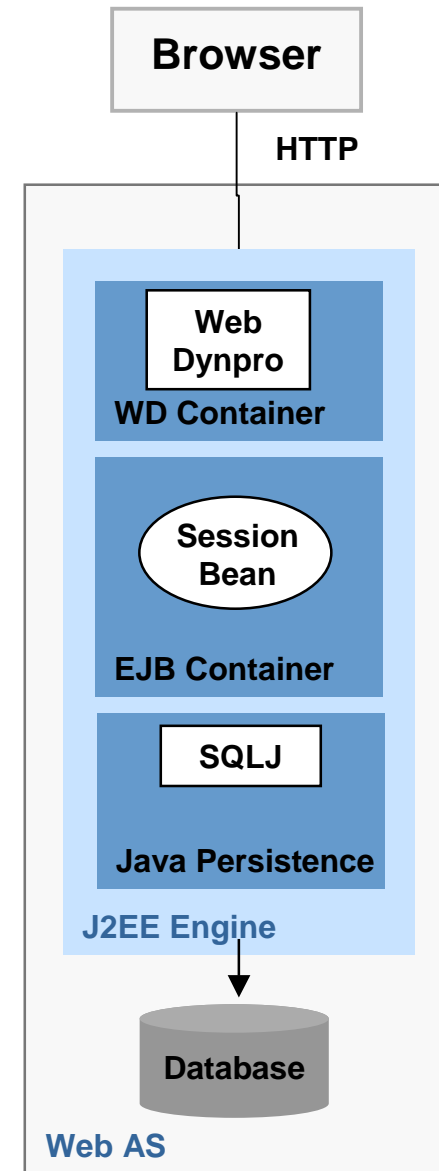
# Java Programming Model 2

## Web Dynpro & EJB

### Proposed next step

- Web Dynpro as front end
- Session EJB's
- SQLJ
  - ◆ Uses Open SQL as known from the ABAP world

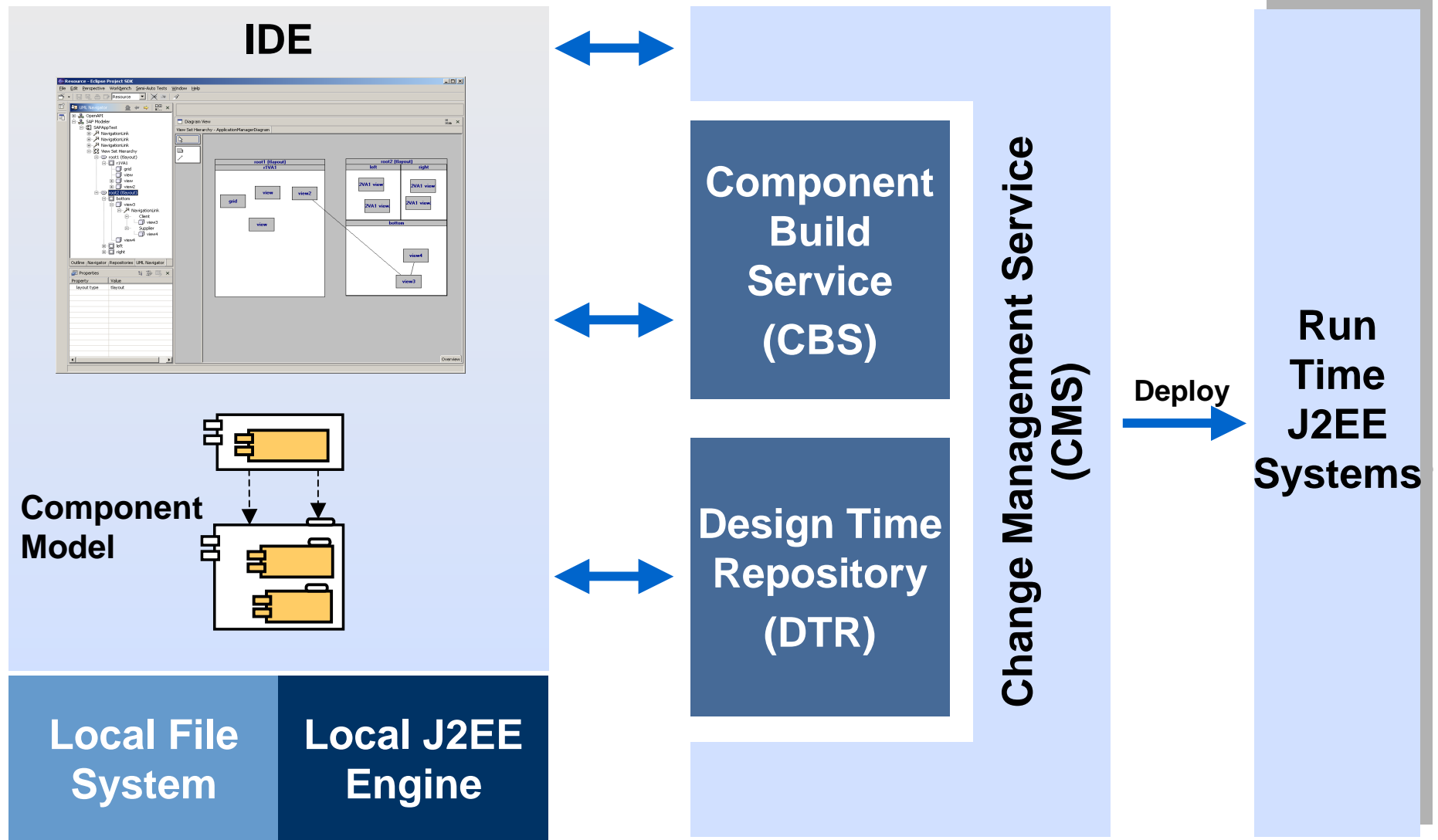
### First step into Java business logic





# **Java Development Infrastructure**

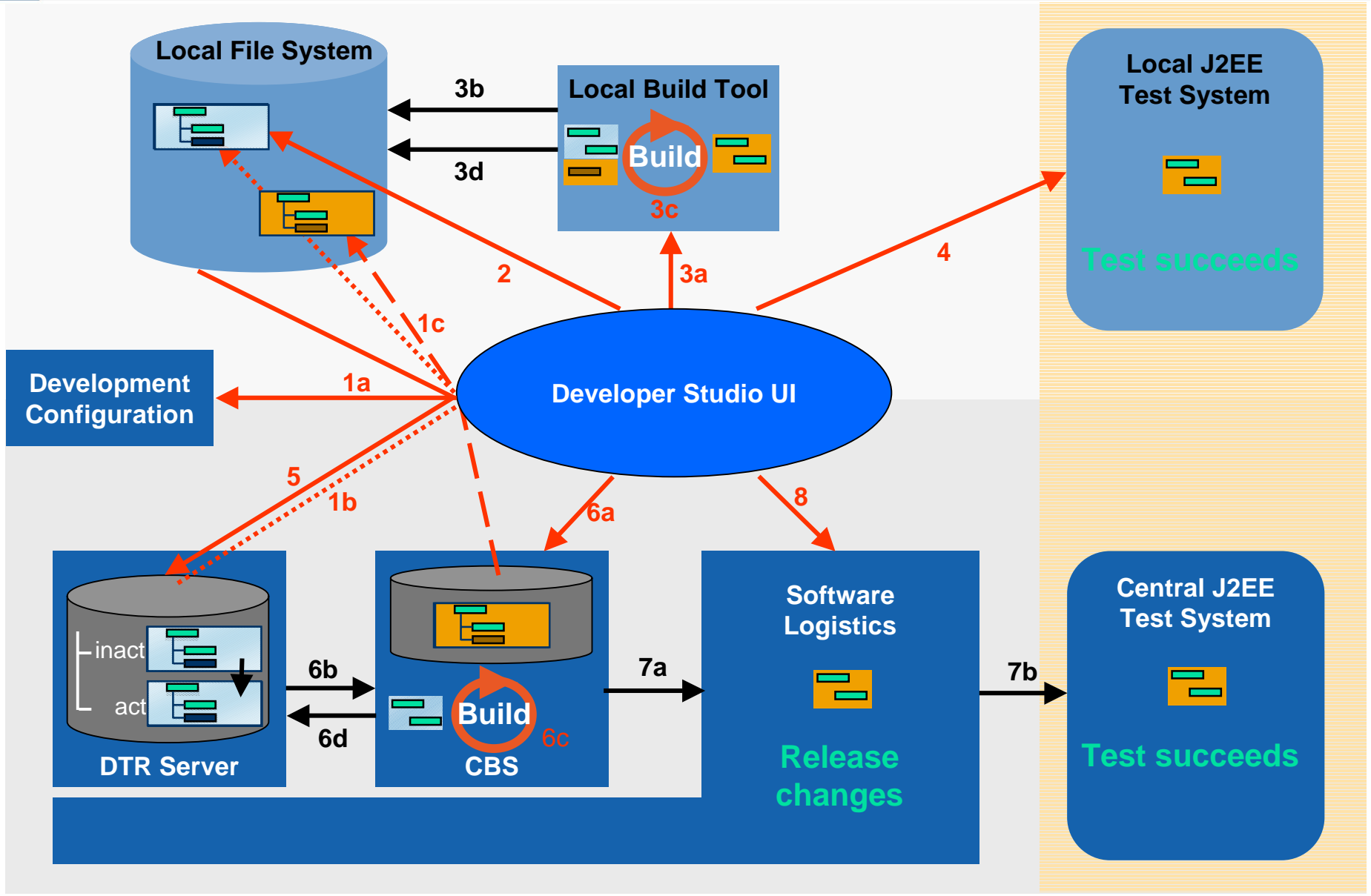
# Overview: Java Development Infrastructure



# A New Java Development Process

Local Dev. Environment

Central Dev. Environment



## **More Infos**

**SAP Developer Network :**

**<http://sdn.sap.com>**

**SAP's Documentation**

**<http://help.sap.com>**



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