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5. Summary
SAP NetWeaver - A Strategic Platform for eSOA

SAP NetWeaver Composition Environment 7.1 (SP3 in Nov 2007)
- Java standards based Integration Platform (JEE App Server and Eclipse)
- Model-driven development
- Lean consumption
- Loose coupling

Business Suite is SAP’s major Product
- Business Process Platform: Business Functionality via Enterprise SOA Provisioning
- Stable, scalable core
- Service-enabled
- Reuse of SOA assets (more than 20 millions line of ABAP code)
SAP NetWeaver Composition Environment 7.1

- Robust, enterprise-class Java EE 5 application server
- Web Dynpro UI
- SAP Interactive Forms by Adobe
- Federated Portal Network
- SAP Composite Application Framework (CAF) business object modeling and service composition
- Web Services / Enterprise Services Connectivity

- SAP NetWeaver Developer Studio: Eclipse based development and modeling environment
- Composite Business Processing for collaborative processes
- Enterprise Services Repository and Registry (ESR)
- Software lifecycle management and logistics (NWDI)
Eclipse is Foundation

- SAP NW CE 7.1 SP3 (available in Nov 2007) is based on
  - Eclipse 3.3
  - WTP 2.0
- Best Class Java Development Tools (JDT)
- Plug-in concept
  - Open
  - Extensible
  - Enhancement possibility by 3rd party
  - Best Class Tool Platform
- Industry-Standard
- Excellent User Experience using the Workbench (Perspectives)
- Excellent UI Strategy (SWT, Jface)
Productive Development and Modeling

- Support for both
  - standard Java - J2EE 1.4 and Java EE 5 –
  - SAP-specific programming models (e.g. Web Dynpro Java)
- Full benefits of WTP tool set, e.g. O/R mapping from EJB to database
- Modeling and Metadata is key (integrated code-oriented and graphical editors)

Software Lifecycle Management

- Eclipse integrates with NetWeaver development infrastructure (NWDI) and 3rd party tools
- Possibility to package content from various meta data sources into one shippable application
Welcome to the SAP NetWeaver Developer Studio, SAP's Eclipse-based environment for developing Java Enterprise applications and for composing services with SAP Composite Application Framework (CAF). Use this homepage as a starting point for your development activities and utilize the complete Developer's Guide, including guidance into development and modeling capabilities of SAP NW Composition Environment (CE).

Model-driven Development

Modeling Composite Views with Visual Composer
Visual Composer (VC) provides a Web-based environment for modeling user interfaces without coding. Get familiar with the modeling workflow and how to use VC tool functions.

Composing Services with CAF
CAF is a service-oriented architecture with an environment for building and running composite applications. Find out more how the CAF Application perspective supports the model-driven development of composites that integrate existing services and add new business logic with minimal programming effort.

Designing Process Logic with Guided Procedures
Guided Procedures (GP) enables you to model applications just by assembling enterprise services and business objects with the support of workflow patterns and role-based collaborative processes. Learn in detail how you integrate existing applications and services into the GP framework, and how you implement your own functions to use in GP-modeled processes.

Developing User Interfaces with Web Dynpro
Access content providing the information about programming with Web Dynpro for Java. Learn in detail how to use Web Dynpro user interface (UI) technology for developing model-driven web applications using the SAP NetWeaver Developer Studio tools.

Java EE 5 Development

Developing Applications with Java EE 5
Get familiar with the whole development process for all application layers in the context of Java EE 5. Learn in detail how to develop persistent entities, define database connections, implement BPEL 3.0 and Web components.

Developing Web Services
Learn in detail how the Developer Studio enables you to create and consume Java EE 5 Web services.

Services Registry

Consuming Enterprise Services Available in the Services Registry
When developing cross-system processes, it is essential that a description of the services is available centrally. Learn more how the Services Registry does you support to discover and reuse services in a standard-based way.
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5. Summary
2000 – 2003

2000

SAP decides to support Java
SAP’s choice: Borland’s JBuilder 4
Best Java / JEE IDE with minimal SAP extensions via Borland’s Open Tools API
JBuilder Licenses (1000) for SAP internal usage

2001

Borland negotiations OEM not an option for SAP
Open Tools API not sufficient, Source access needed
More SAP specific Tools push Tool Platform
First evaluations of Eclipse and NetBeans

2002

Decision to go for Eclipse
IBM negotiations J2EE Feature
Shipment SAP Web AS 6.20
Modeling Infrastr. needed
Cooperation with Togethersoft (TS)

2003

SAP NetWeaver Developer Studio with SAP Web AS 6.30
Based on
- J2EE 1.3
- Eclipse 2.1
SAP Features: WebDynpro and J2EE with NWDI
Borland takes over TogetherSoft
Studio Architecture 2003

- UML Modeler
- SAP Dev Infrastr.
- Web Dynpro UI and DDIC
- J2EE Tools

Model Abstraction Layer

Eclipse Platform

J2SE Tools
2004 – 2007

2004
- SAP joins the new Eclipse Foundation as Strategic Consumer Gold Sponsor at the first EclipseCon

2005
- Additional SAP specific features as CAF, WS, Admin Tools …
- Eclipse is accepted Developer Tool Platform in SAP’s Java offering

2006
- JEE 5 Preview
- WTP adoption

2007
- Composition Environment shipped
- Based on
  - JEE 5
  - Eclipse 3.1
  - Eclipse 3.3 with WTP 2.0 in Q4
- SAP signs the Eclipse Committer Agreement
- Presented on SAP Teched
### Studio Architecture 2008

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<tr>
<td>Admin, Support, VC in Eclipse, ...</td>
<td>Dev Infrast.</td>
<td>BPMN</td>
<td>CAF</td>
<td>Web Dynpro UI</td>
<td>JEE and WS on top of WTP</td>
</tr>
</tbody>
</table>

### Development and Modeling Infrastructure (MOIN)

![Eclipse Platform](image)

- **Eclipse for ABAP Developing and Modeling in evaluation**
1. Eclipse Positioning in SAP‘s Product Strategy
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Demo: SAP NetWeaver Developer Studio

Import backend service
CustomerBasicDataByIDQueryResponse_In

Define simple Service Interface
CustomerRead

Implement CustomerRead Service

Model Web Dynpro UI using CustomerRead Service
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5. Summary
Eclipse relevant SAP Focus – Java Standards

Standard Java, JEE and Persistency

- Eclipse offers with JDT a superior Java Development Environment
- WTP offers infrastructure and basic tools for Java EE
- SAP implemented its Java EE tools on top of WTP and will increase its investments to support WTP
- SAP strongly supports persistency historically and will contribute to DTP (MaxDB, DDIC)
- Eclipse with WTP, DTP and STP can become a solid foundation for Enterprise SOA tools by alignment of roadmaps and concepts and by accelerating the progress in tool support for “commoditized Java dev paradigms” beyond JDT

Assessment of SAP/Eclipse consolidation: 
Eclipse relevant SAP Focus – SAP Tools Composition Perspective

Development and Modeling Environment Enterprise SOA Applications Extending Open Standards

- BPM and Service Composition
- Web UI
- Development Infrastructure
- Modeling Infrastructure
- Server Support
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5. Summary
Composite Business Processes (CBP)

- Graphical modeler based on BPMN
  - Eclipse-based
  - Support key process concepts (workflow, event, task, context, roles, UI) throughout their lifecycle
  - Combine human interaction and system integration in one model

- Direct path from business view to process execution
  - Nothing ‘lost in translation’
  - Dynamic role-based views
  - Single active model
  - Flexible execution

- Embedded in SAP NetWeaver CE
  - Integrated composition experience
  - Common UI technology
  - Service-based connectivity
Eclipse relevant SAP Focus – BPM CBP Composer
CAF Modeler in Eclipse
Service Composition

- **Composite Application Framework** for modeling of Enterprise Services and Business Objects
- Java EE based framework following the Enterprise SOA programming model
- Touch points with SCA and STP. SAP invests in SCA, participates in the specification and monitors STP
- Support of enterprise standards like CCTS data types system important for SAP
- Slow “Commoditization Process” for SOA paradigms

**Assessment of SAP/Eclipse consolidation:** Y
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Web UI

- SAP invented Web Dynpro, an Enterprise quality Web UI framework
- MVC based convenient Web UI Modeling with best support of Reuse, Personalization and flicker free performance
- Web Dynpro overcomes many deficiencies of Java EE UI techniques. It is a key element of SAP’s Java strategy and will coexist with other UI technologies like JSF and JSP
- Leverage Eclipse UI tooling for Java EE UI support and seamlessly integrate with it, e.g. JSF Editor from WTP and embedding of JSP components in Web Dynpro UIs

Assessment of SAP/Eclipse consolidation: G
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“Software development is becoming software assembly, with components sourced from around the world and based on a wide range of implementation technologies. ...objective is to leverage and extend the Eclipse platform to make mixed-component development as efficient as plug-in development. The basic approach is to introduce a project-agnostic way of describing a development project's component structure and dependencies, and to provide a mechanism for materializing source and binary artifacts for a project of any degree of complexity.”

– http://wiki.eclipse.org/Buckminster_Project_FAQ

This quote from Eclipse Buckminster FAQ could be a quote for a FAQ of SAP Component Model.
Eclipse relevant SAP Focus - Development Infrastructure
Development Infrastructure

- SAP invented the **SAP Component Model** to support software structuring and reuse as well as software production and assembling.
- **SAP NetWeaver Development Infrastructure (NWDI)** is built around SAP CM with full-fledged Source Code Management System, Automated Build and a Configuration and Change Management System.
- SAP Tools are closely integrated with the SAP Component Model and the Development Infrastructure.
- SAP is monitoring upcoming component model standards and check them for consolidation. Buckminster and STP(SCA) might be the right direction.

**Assessment of SAP/Eclipse consolidation:**
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Eclipse relevant SAP Focus – Modeling Infrastructure

Modeling Infrastructure

- SAP developed a **Modeling Infrastructure (MOIN)**
  - (Enterprise) design-time repository that manages modeling content
  - Based on standards like MOF, JMI, XMI, OCL
  - Platform independent, can run on Eclipse, on a JEE server, and standalone environments

- Frameworks and tools on top of MOIN
  - Graphical Framework for development of graphical modeling tools
  - Tool Generation Framework (for generation form-based Editors/Viewers)
  - Graphical tool for editing of MOF Meta-models (that also serves as showcase for MOIN and other frameworks)
Eclipse relevant SAP Focus – Modeling Infrastructure

Modeling Infrastructure and Server Support

- SAP supports an Enterprise Ready Modeling Infrastructure (MOIN) based on MOF 1.4
- Enterprise Readiness means
  - Consistency of a huge and highly-connected model network (constraints, refactoring, concurrent changes)
  - Information system on huge amounts of modeling content with efficient query capabilities (Server Scenario with DB support)
  - Eclipse, JEE Server and Standalone Build scenario to be supported
- Overlap with EMF, EMFT and GMF. Consolidation is of high value and SAP ready to invest in that

Assessment of SAP/Eclipse consolidation: R
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5. Summary
The SAP Eclipse Story - Summary

- Excellent Java development environment and best tool platform with huge acceptance and market momentum. The right decision in 2002 😊
- **SAP NetWeaver Developer Studio** is based on Eclipse. It is THE fundamental Design Time Environment in SAP’s important product **SAP NetWeaver Composition Environment**
- Eclipse is driver and enabler for tool consolidation in SAP’s Java Development and Modeling tools area
- Current focus for SAP contribution is WTP and DTP. The SAP Memory analyzer is planned as contribution.
- Modeling and Development Infrastructure are key for SAP. SAP’s challenge is to align their Eclipse specific implementations to upcoming Community Standards. EMF, EMFT, Buckminster, STP, Team API, RCP are very promising projects.
- Meritocracy is key and it is less about money and market support than about development engagement. Therefore SAP considers Strategic Consumer model as honors towards Eclipse. SAP will increase its contribution investments.
- SAP loved to see fast commoditization (e.g. JEE), but the Business model…
Thank you!
Title

First level
- Second level
  - Third level
    - Fourth level
    - Fifth level
## Definition and halftone values of colors

<table>
<thead>
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<th>Primary colors 100%</th>
<th>100%</th>
<th>85%</th>
<th>70%</th>
<th>55%</th>
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