



Sun Java Composite Application Platform Suite

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Sun Microsystems



Agenda



- Sun Software Strategy
- Service-oriented Architecture
- Sun Java Composite Application Platform Suite (JavaCAPS)
 - > eGate Integrator
 - > eInsight Business Process Manager
 - > eVision, eWay, eTL, eBAM, B2B, etc.
- What comes next?

Sun Software Strategy

The Global Power of Sun

Fortune
194
Company

Java Devices
3.5 Billion

Annual Server Units
Up 14% Y/Y

Worldwide Employees
36,000

Annual Revenues
\$13+ Billion

Java Developers
5 Million

Cash
\$4.8 Billion

Annual R&D
\$2+ Billion

U.S. Patents
5,000+

Solaris
Licenses
7 Million

Annual Storage
Petabytes Shipped
410

Business Presence
100 Countries

Our Vision

- The Network is the Computer
- Everyone and everything participates on the network



Our Strategy – Open Source



Roller



"[Open source is] the most significant all-encompassing and long-term trend that the software industry has seen since the early 1980s."



"Sun is in the process of open sourcing almost all its software. Not even IBM – long friendly to the open-source Linux operating system—has gone that far."

BusinessWeek



opensolaris™



Open ESB

The Open Enterprise Service Bus



mozilla



Table 5: Estimate for FLOSS code contributed by firms

Top contributors

Rank	Name	Person-months	Cost (mil euro)
1	sun microsystems inc.	51372	312
2	ibm corp.	14865	90
3	red hat corp.	9748	59

"Every software asset we produce is open source. If it isn't today, it will be pretty damn quickly."

Jonathan Schwartz



Report on Open Source for the European Commission

<http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf>

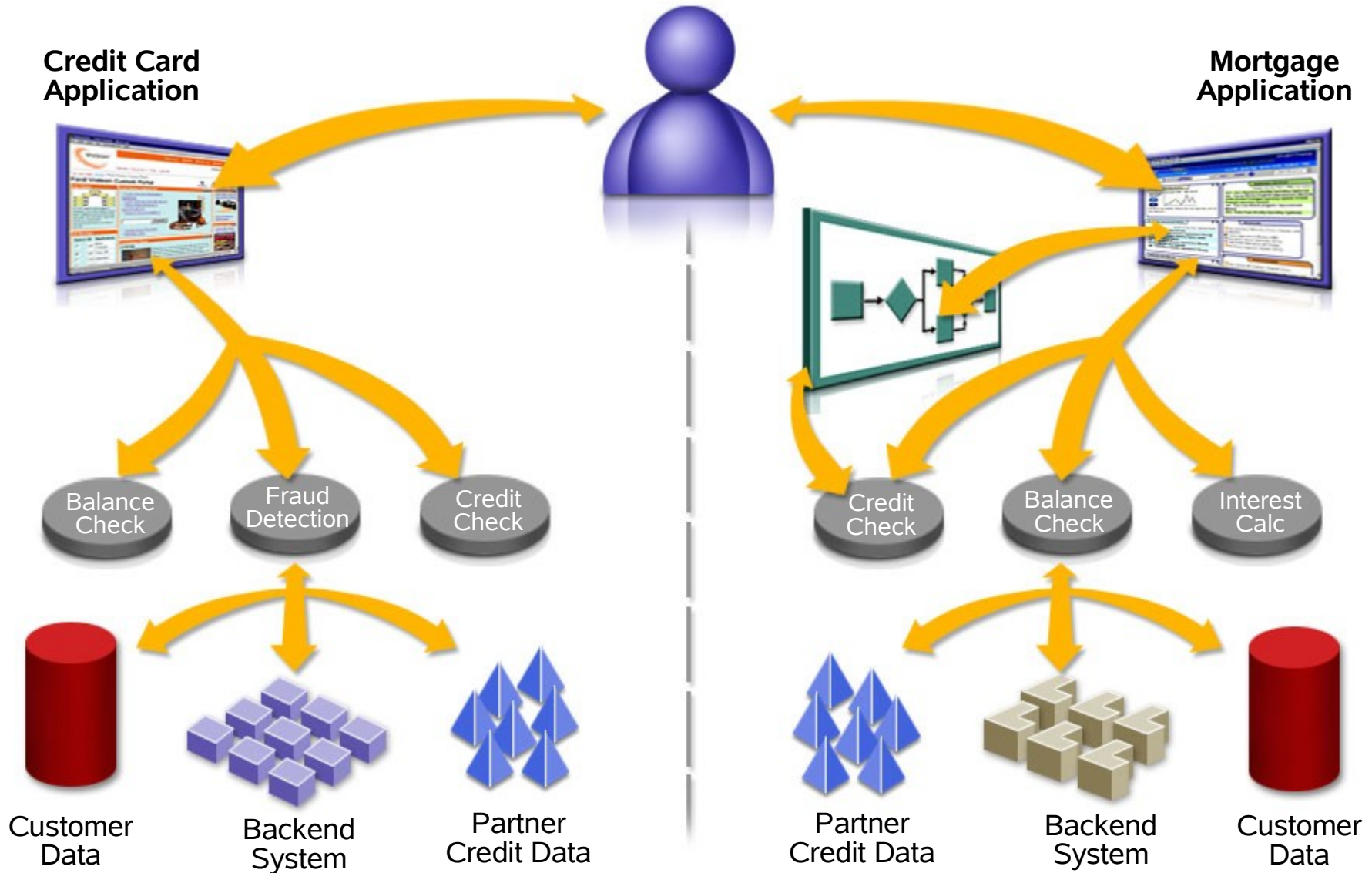


OpenJDK

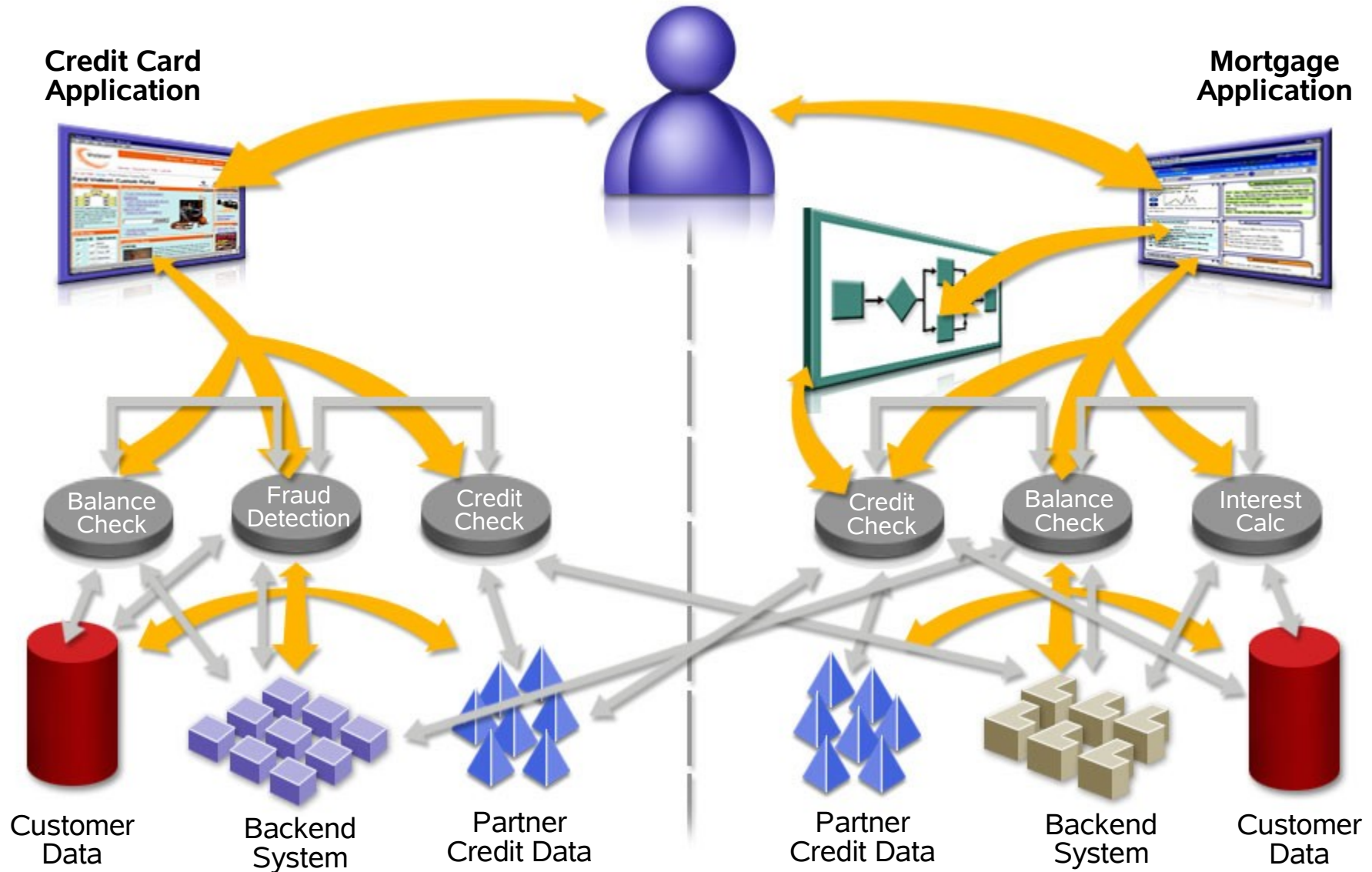


Service-oriented Architecture

Traditional n-Tier Architecture



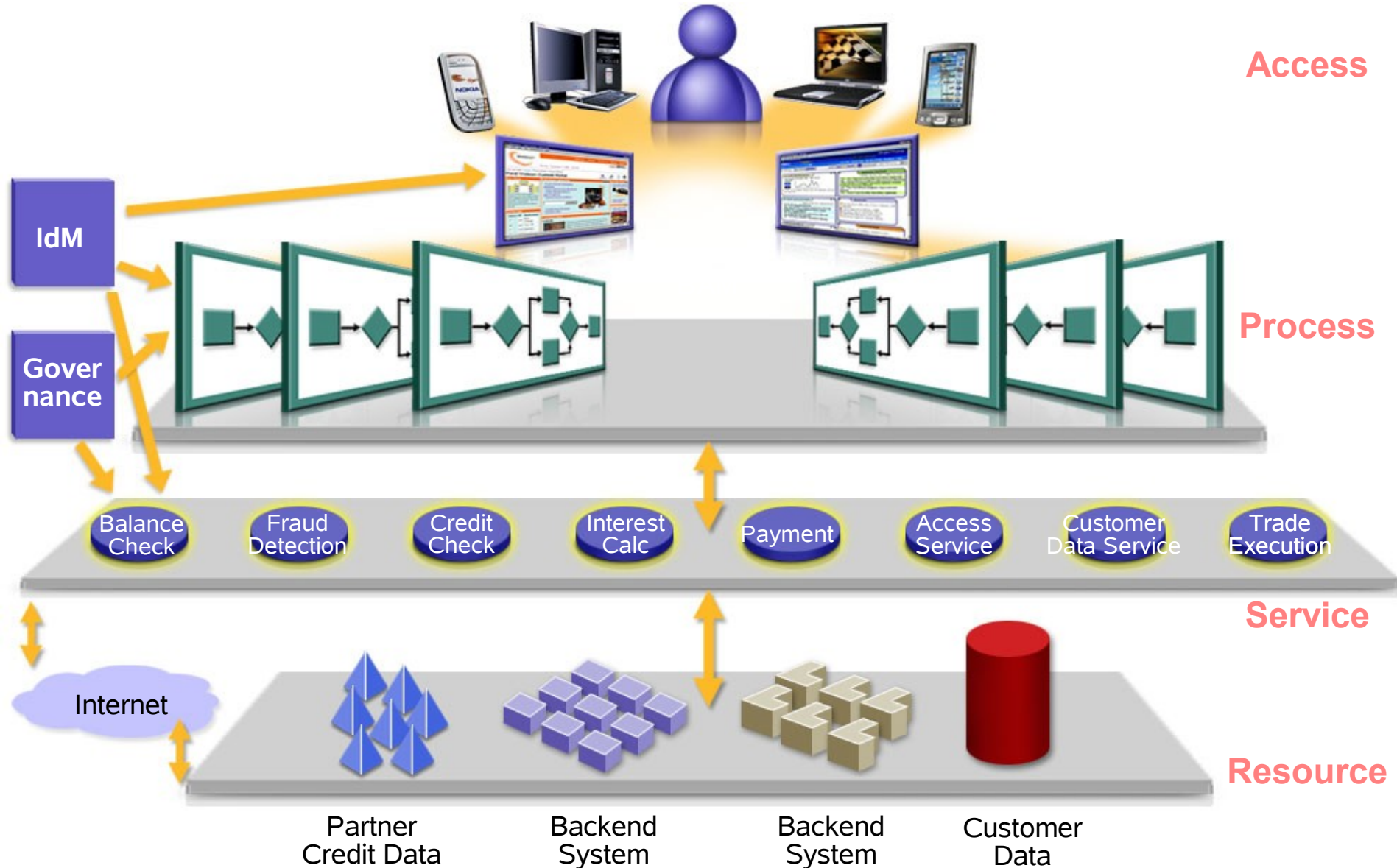
Accidental Architecture



The Service-oriented Approach

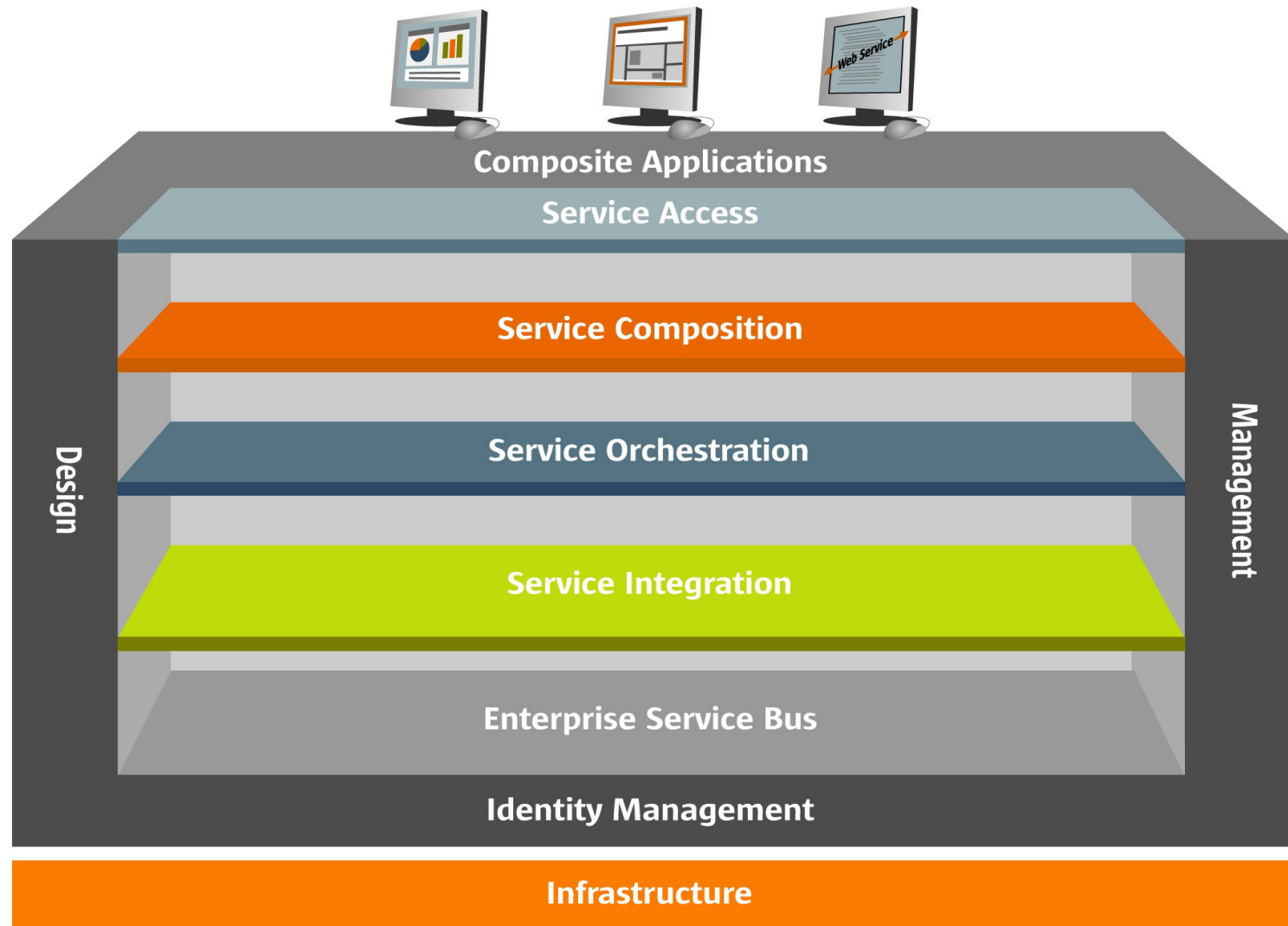
- Service-oriented Architecture
 - > Create an application integration architecture based on reusable, independent services combined to deliver application logic.
- Composite Applications
 - > Combine existing packaged and legacy applications, information stores, and newly developed services into a single solution.
- Business Process Management
 - > Model, automate, manage, measure and optimize the flow of business process steps that span systems, people, customers and partners within and beyond your corporate boundaries

Service-oriented Architecture

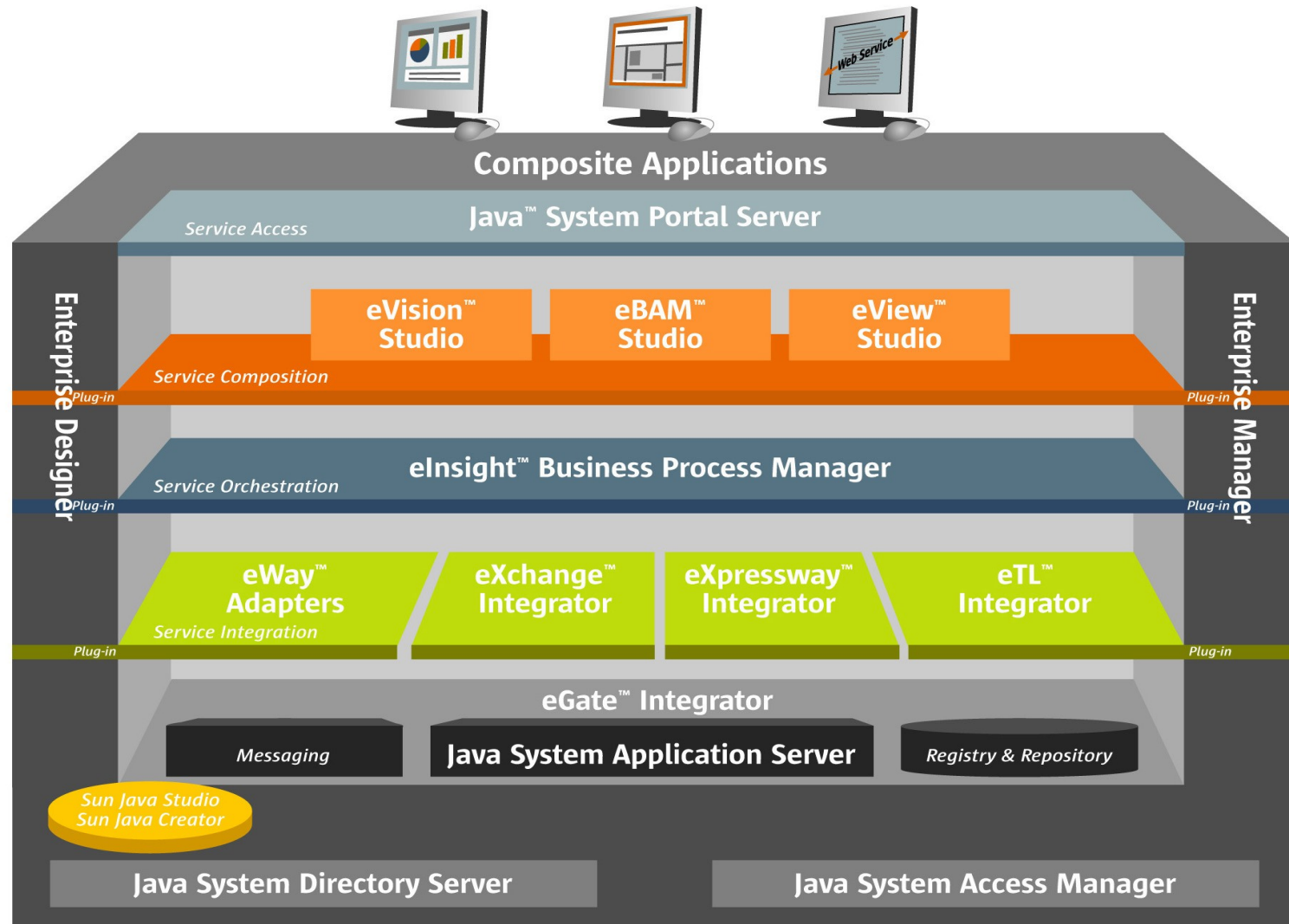


Sun Java Composite Application Platform Suite

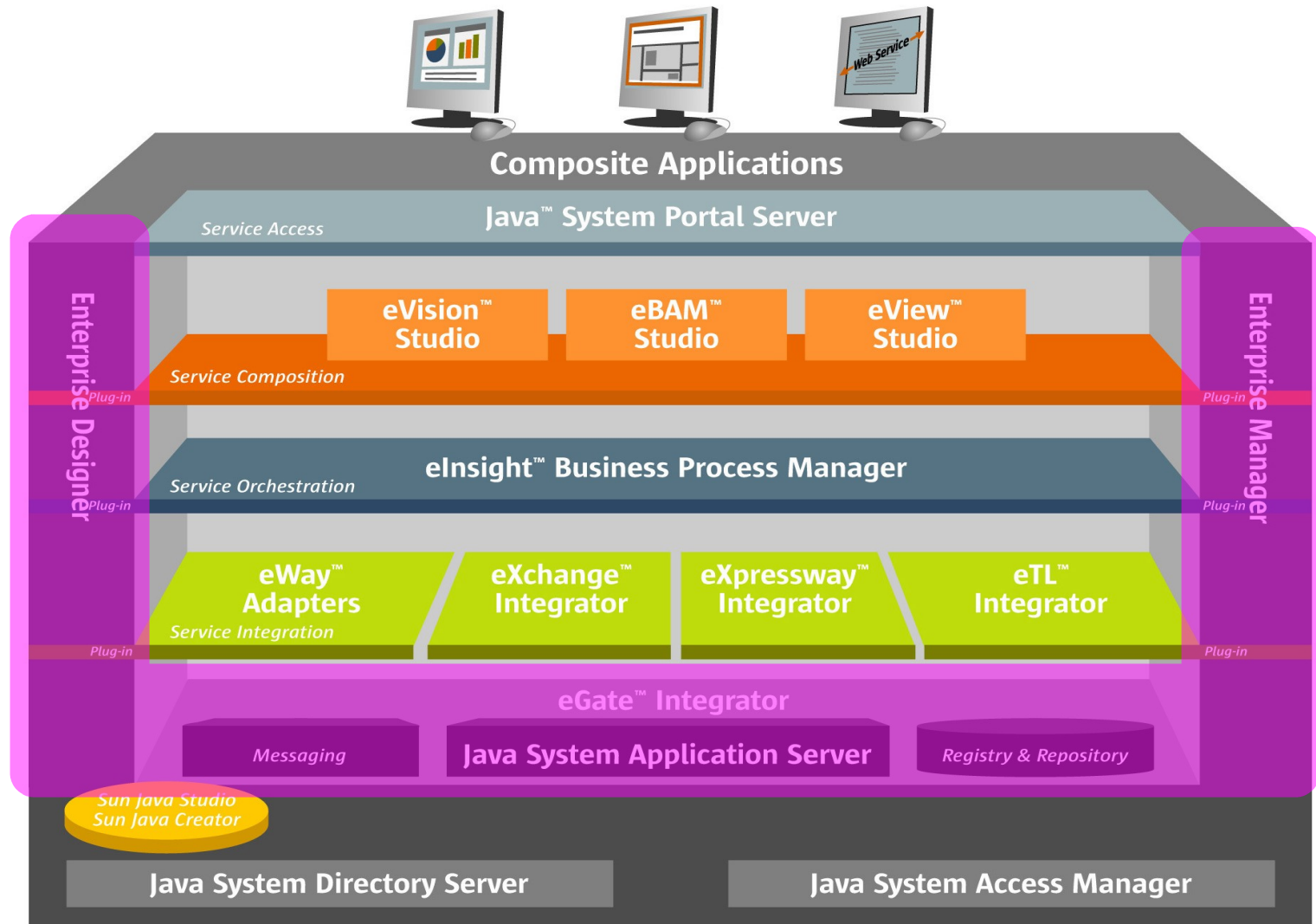
Technical SOA Architecture



Sun JavaCAPS



eGate Integrator

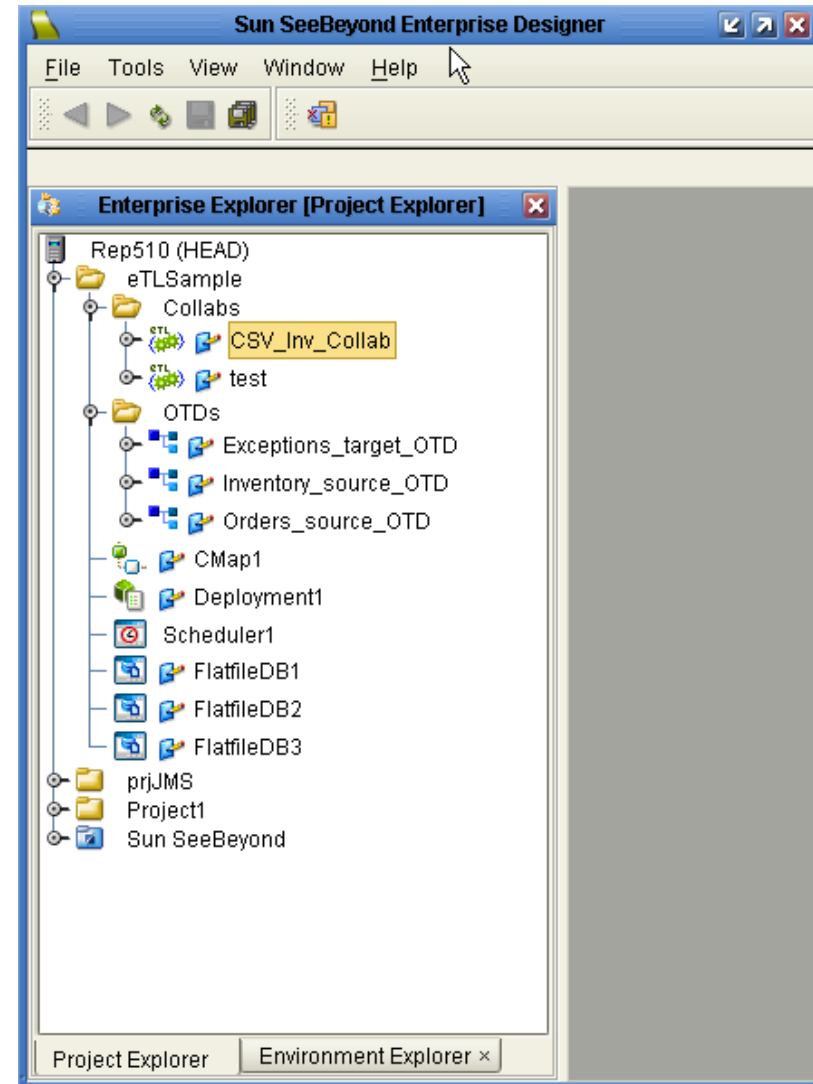


eGate Integrator

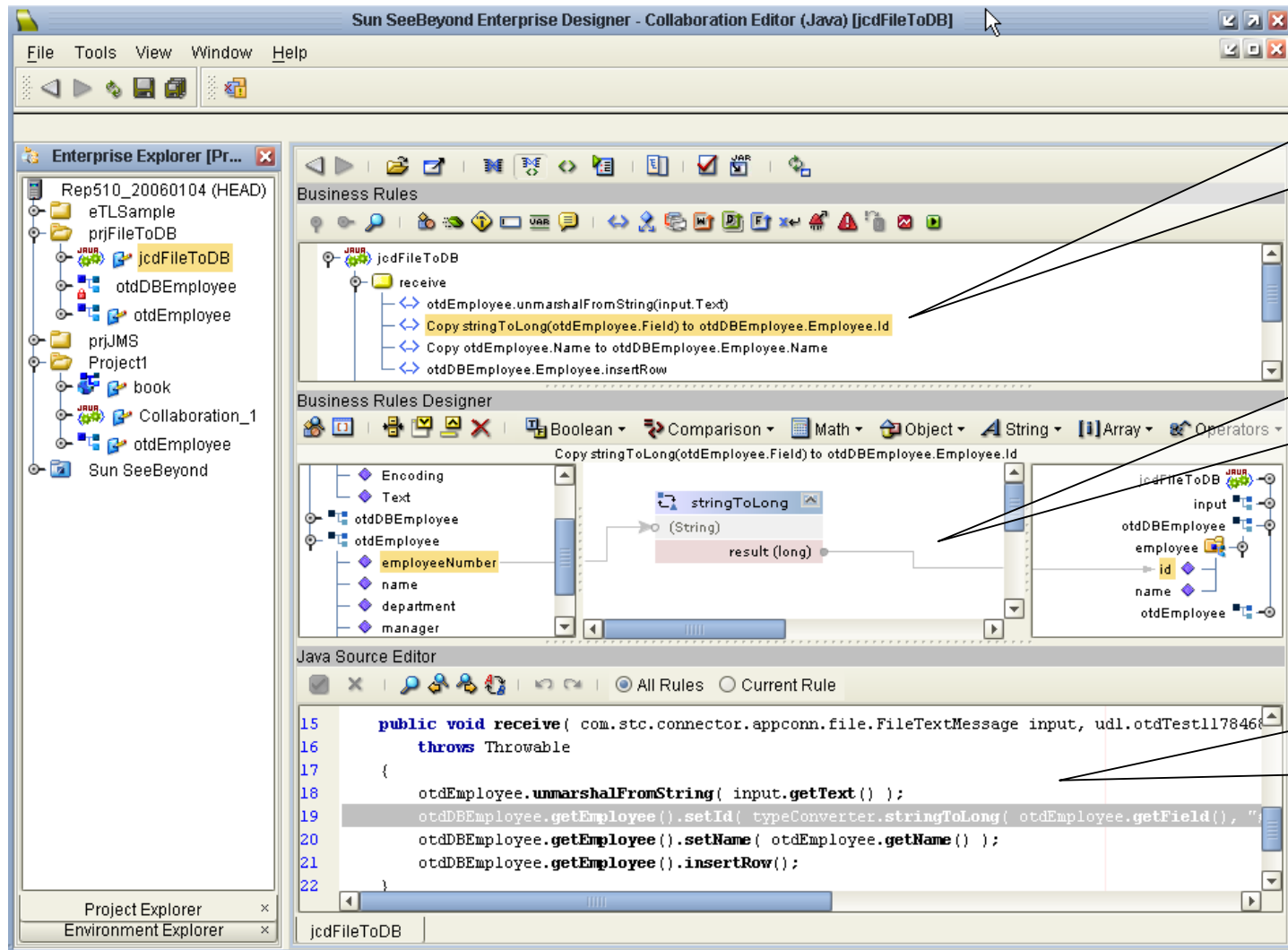
- Common J2EE 1.4 compatible run-time for
 - > Application connectivity
 - > Data transformation
 - > Guaranteed transactions
 - > Messaging
 - > Web service enablement of all components
- Common Development Environment
 - > Enterprise Designer
- Common Management Environment
 - > Enterprise Manager
- Common Repository

Enterprise Designer

- Unified development environment for all JavaCAPS components
 - > Application to application
 - > Business to business
 - > Business process management
 - > Business activity monitoring (BAM)
 - > Workflow
 - > Extract, transform, load (ETL)
 - > Customer data integration (CDI)
 - > XML, XSD, WSDL Editors
- Project Explorer
 - > Project organization
 - > Access and version control



Collaboration Editors



The screenshot displays the Sun SeeBeyond Enterprise Designer - Collaboration Editor (Java) [jcdFileToDB] interface. The interface is divided into several panes:

- Enterprise Explorer [Pr...]**: A tree view on the left showing the project structure, including folders like Rep510_20060104 (HEAD), eTLSample, prjFileToDB, jcdFileToDB, otdDBEmployee, otdEmployee, prjJMS, Project1, book, Collaboration_1, otdEmployee, and Sun SeeBeyond.
- Business Rules**: A pane at the top right showing a list of rules for the jcdFileToDB project. The rules include:
 - receive
 - otdEmployee.unmarshalFromString(input.Text)
 - Copy stringToLong(otdEmployee.Field) to otdDBEmployee.Employee.Id
 - Copy otdEmployee.Name to otdDBEmployee.Employee.Name
 - otdDBEmployee.Employee.insertRow
- Business Rules Designer**: A central pane showing the design of a specific rule. It includes a palette on the left with categories like Encoding, Text, otdDBEmployee, otdEmployee, employeeNumber, name, department, and manager. The main area shows a flow diagram for the rule "Copy stringToLong(otdEmployee.Field) to otdDBEmployee.Employee.Id". The flow involves a "stringToLong" operation that takes a "(String)" input and produces a "result (long)".
- Java Source Editor**: A pane at the bottom showing the Java source code for the rule. The code is as follows:


```

15 public void receive( com.stc.connector.appconn.file.FileTextMessage input, udl.otdTest117846
16     throws Throwable
17 {
18     otdEmployee.unmarshalFromString( input.getText() );
19     otdDBEmployee.getEmployee().setId( typeConverter.stringToLong( otdEmployee.getField(), ""
20     otdDBEmployee.getEmployee().setName( otdEmployee.getName() );
21     otdDBEmployee.getEmployee().insertRow();
22 }
      
```

Business Rules

Mapping for an individual Business Rule

Java source view

Run-time Environment

- J2EE 1.4 compatible integration server
 - > JMS compliant message server
 - > Support for building and deploying applications to third party application servers
 - > All JavaCAPS applications are J2EE 1.4 EAR files
- Management and Monitoring
 - > Enterprise Manager is the browser-based common management and monitoring tool
 - > Provides single login consistency for administration, monitoring and control of all artefacts in JavaCAPS
 - > JMX-based

Enterprise Manager

Enterprise Manager - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail News RSS Feeds

Enterprise Manager

MONITOR HELP HOME LOGOUT SEE BEYOND

Project Explorer

Projects Environment

REPOSITORY

- SeeBeyond
- eXchange_Project
- CreditDeptProject
- ComptcenterProject
 - SOA1-PresentationServices
 - SOA2-BusinessProcesses
 - BusinessProcesses
 - Connectivity
 - dpcomputa (Development)
 - cmTest01
 - bpProcessOrder
 - performCreditCheck
 - SOA3-BusinessServices
 - SOA4-TechnicalServices
 - SeeBeyond_Common_Services
 - SOA_Reusable_Services
 - SeeBeyond_Siebel_Services

bpProcessOrder

ID	Name	Status	Start Date	Last Updated	FileClient write Output.status	ValidateOrd Fault1.location
bf711e:fa18d96086-7bae	bpProcessOrder	INCOMPLETE	2004-01-15 09:30:14.0	2004-01-15 09:30:15.0		
bf711e:fa18d96086-7bd4	bpProcessOrder	COMPLETE	2004-01-15 09:29:19.0	2004-01-15 09:29:19.0		
bf711e:fa18d96086-7c09	bpProcessOrder	COMPLETE	2004-01-15 09:29:14.0	2004-01-15 09:29:15.0		
bf711e:fa18d96086-7c31	bpProcessOrder	INCOMPLETE	2004-01-15 09:28:49.0	2004-01-15 09:28:49.0		
bf711e:fa18d96086-7cae	bpProcessOrder	INCOMPLETE	2004-01-15 09:26:19.0	2004-01-15 09:26:23.0		
1a8f100:fa1440238d-5ccf	bpProcessOrder	COMPLETE	2004-01-14 14:27:39.0	2004-01-14 14:27:39.0		
1a8f100:fa1440238d-5d9c	bpProcessOrder	COMPLETE	2004-01-14 14:21:58.0	2004-01-14 14:21:58.0		
1a8f100:fa1440238d-6261	bpProcessOrder	COMPLETE	2004-01-14 13:42:42.0	2004-01-14 13:42:42.0		

Start → receiveBMOder → validateOrder → performCreditCheck → performStockCheck → jcdCRMupdate.UpdateAccount → FileClient.write → End

Process-level Exception Handlers

Exception Handler

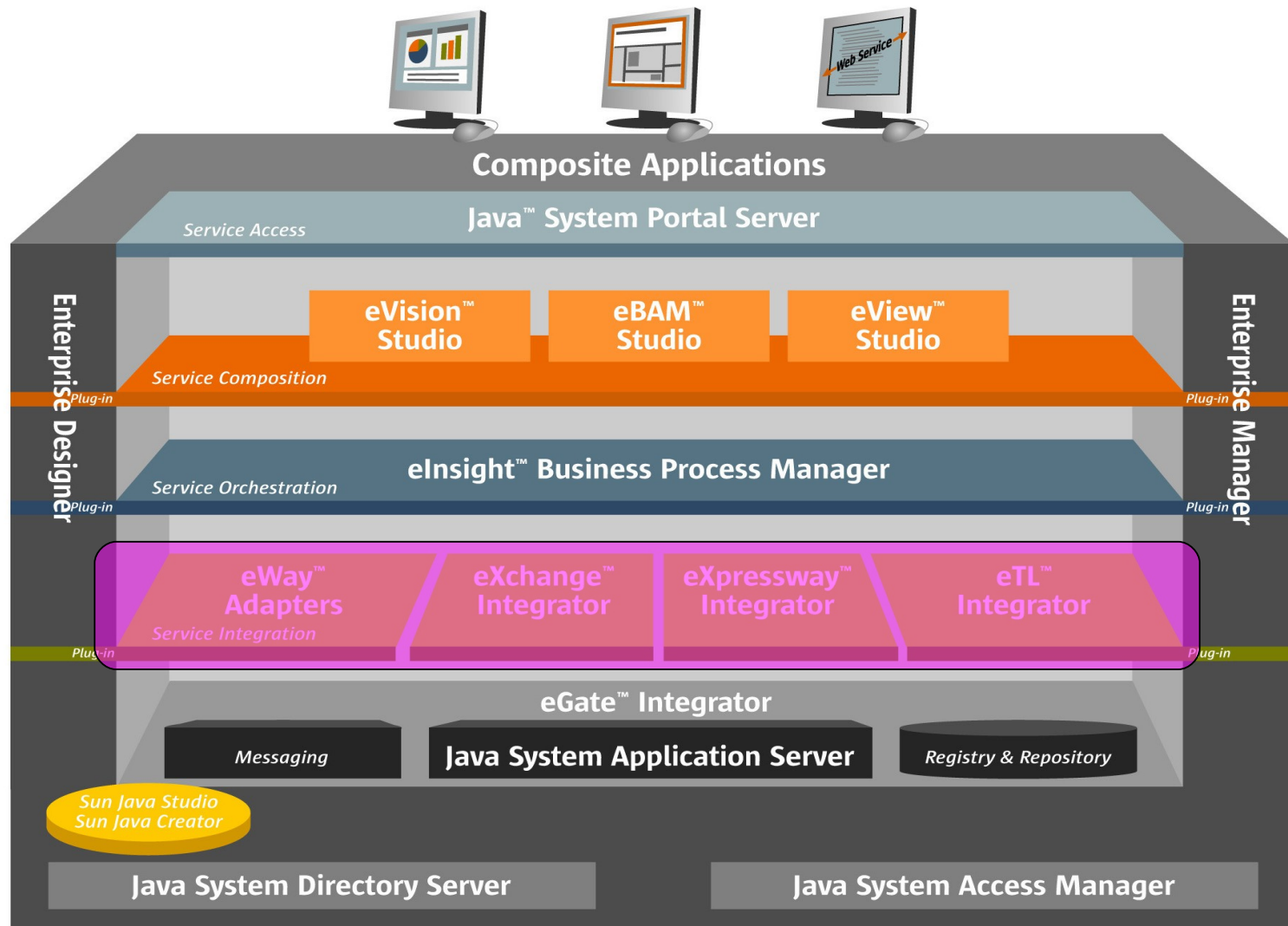
FileClient.write

Alerts update | Repository update | Set refresh rate [10 sec.]

Version Info

Done Local intranet

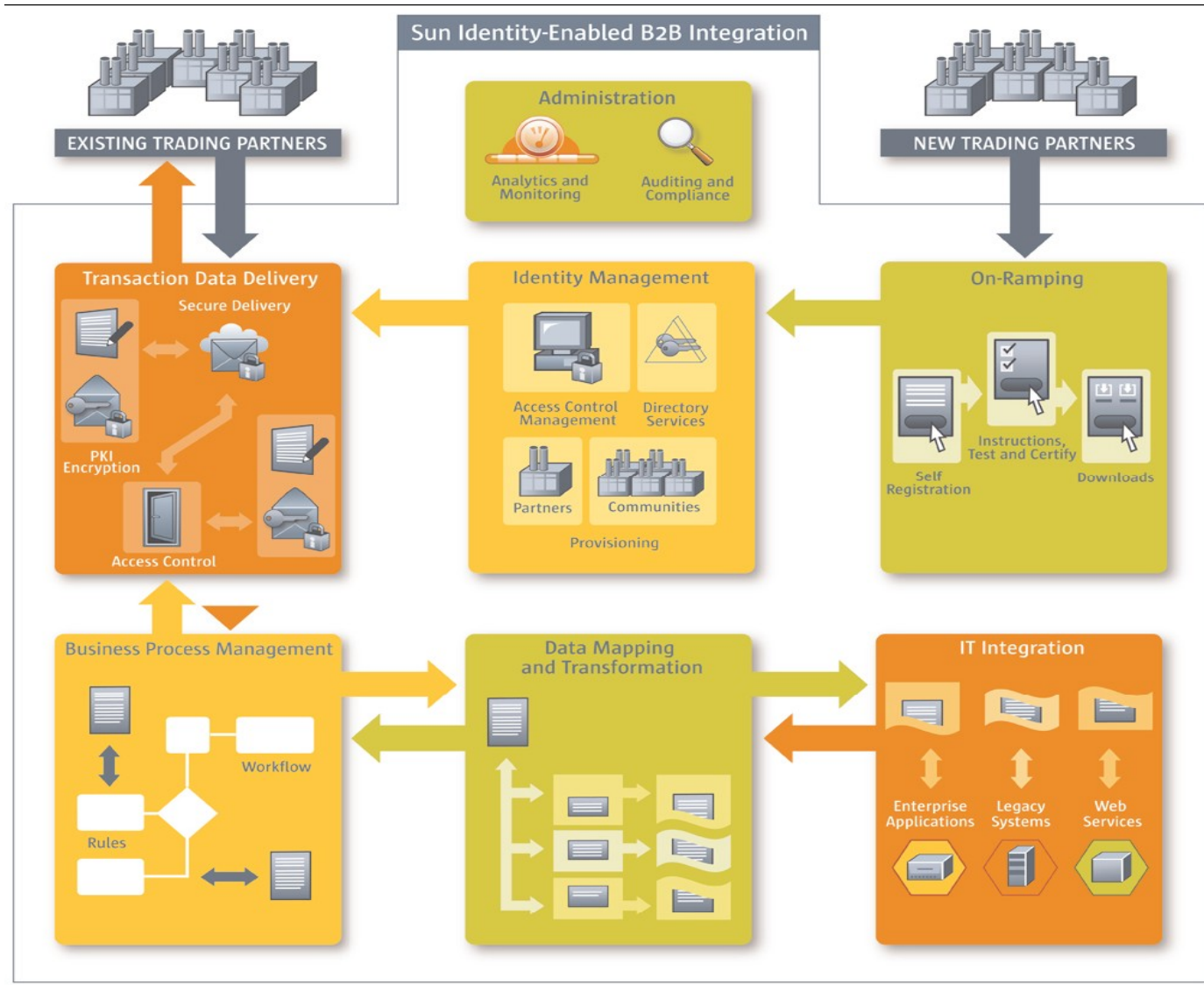
JavaCAPS Integration Tools



eWay – Adapters and Connectors

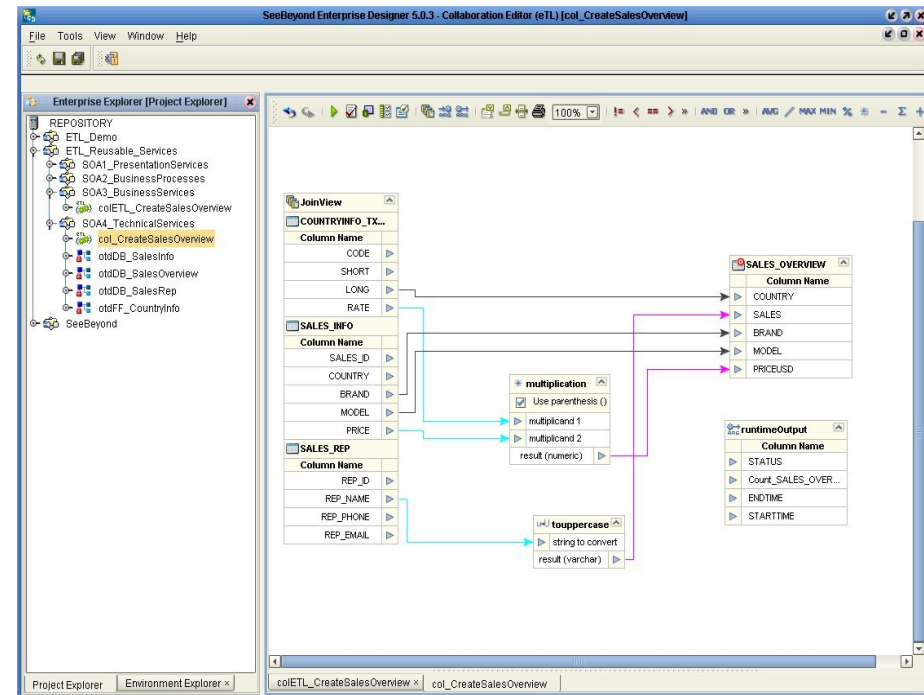
- Over 80 adapters & connectors available
- Java Connector Architecture 1.5
- Adapters for
 - > Applications (SAP, PeopleSoft, Siebel, Lotus, ...)
 - > Communications (File/FTP, e-Mail, CICS, IMS, COM/DCOM, CORBA, HTTP(s), SOAP, MQSeries, ...)
 - > Databases (Oracle, DB/2, Sybase, MS SQL Server, JDBC, ...)
 - > Web servers (Apache, WebSphere, MS IIS, ...)
- Tools, libraries & protocol managers (Cobol CopyBook, UNI/EDIFACT, AS2, ebXML, ...)

eXchange Integrator – B2B

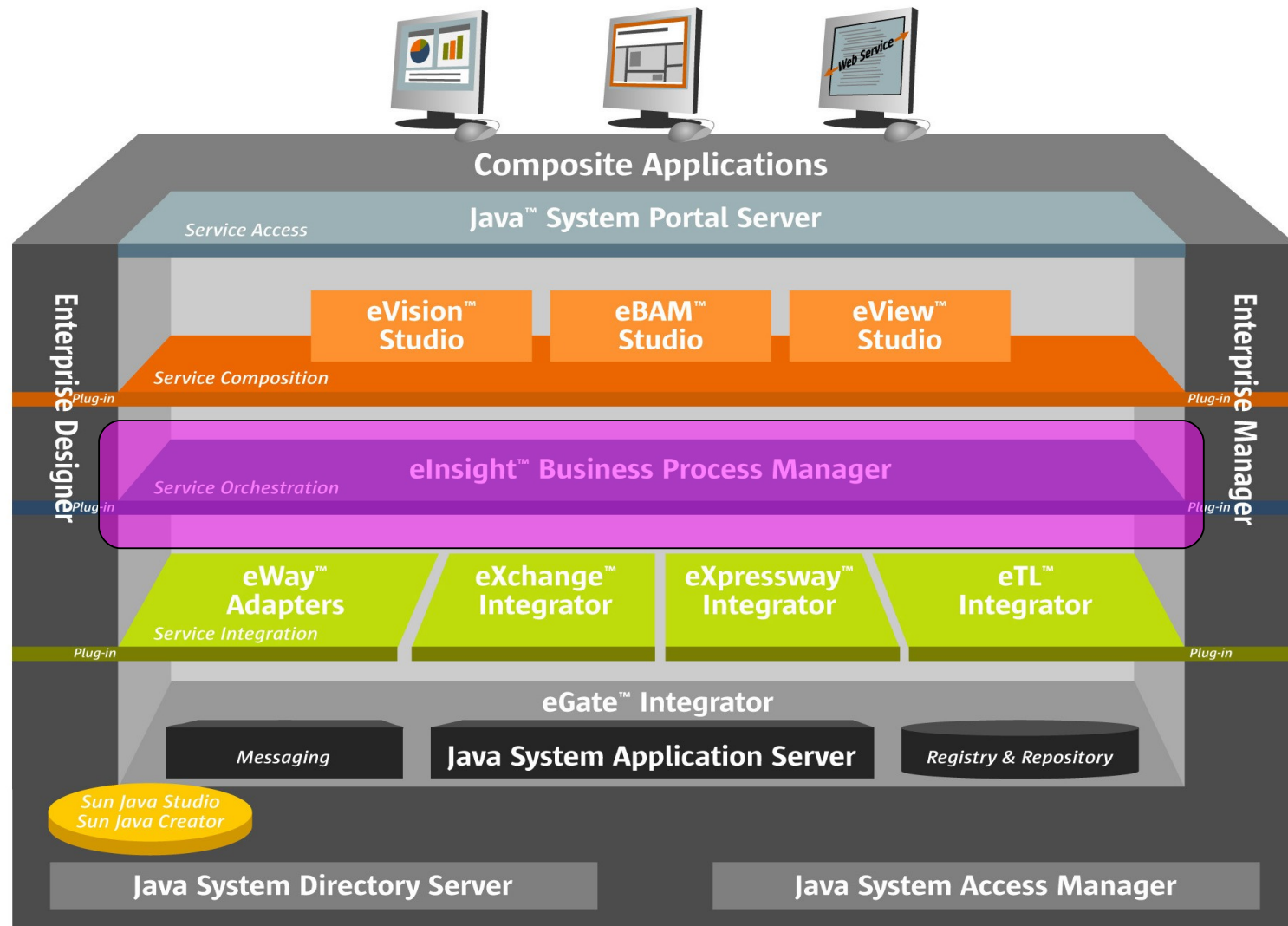


eTL – Extract, Transform, Load

- Graphical ETL editor
 - > Automatic code generation
 - > Graphical representation of the table
- High Speed Concurrent ETL Engine
 - > Large record sets vs. transactions
 - > Bulk data operations vs. messages
 - > Source filtering, staging and “upsert” merging
 - > Inner, left, right and full outer joins
- Data Quality
 - > Integrated pre-deployment testing
 - > Data parsing, validation, cleansing and monitoring



eInsight Business Process Manager



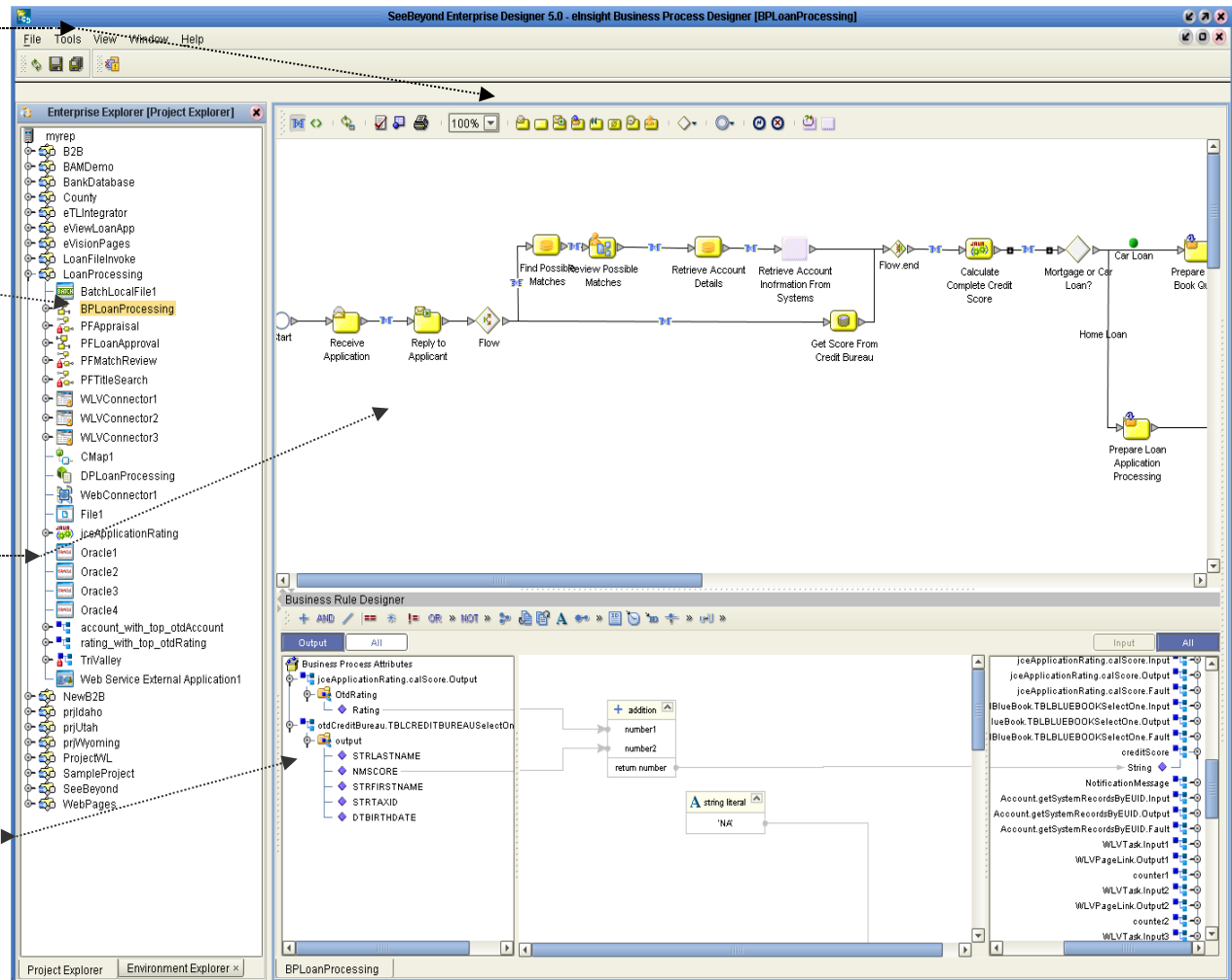
eInsight Business Process Designer

Modeling Objects from the toolbar can be used to frame out the business process

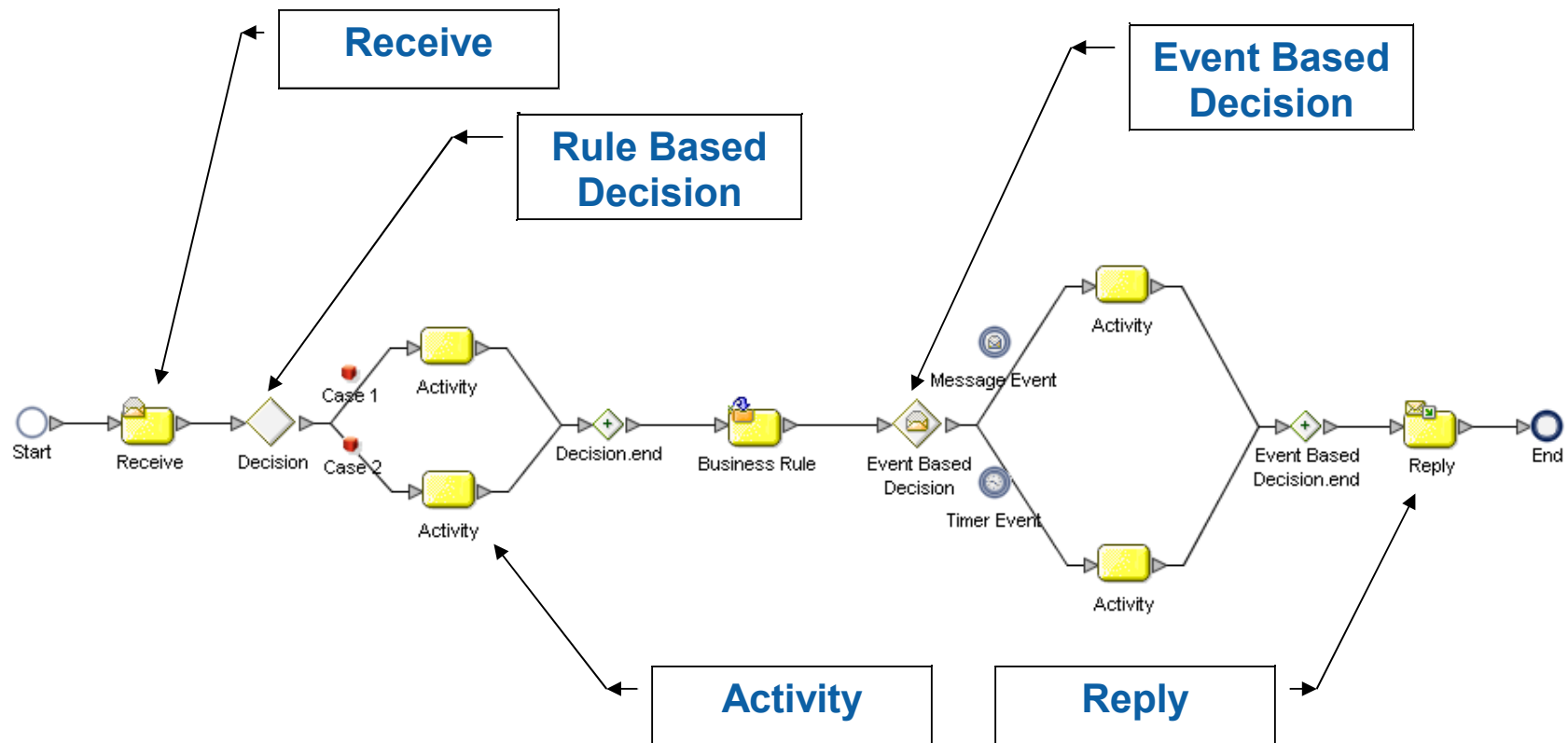
Business Processes appear in the Project Explorer

Business Process Designer

Business Rules Designer



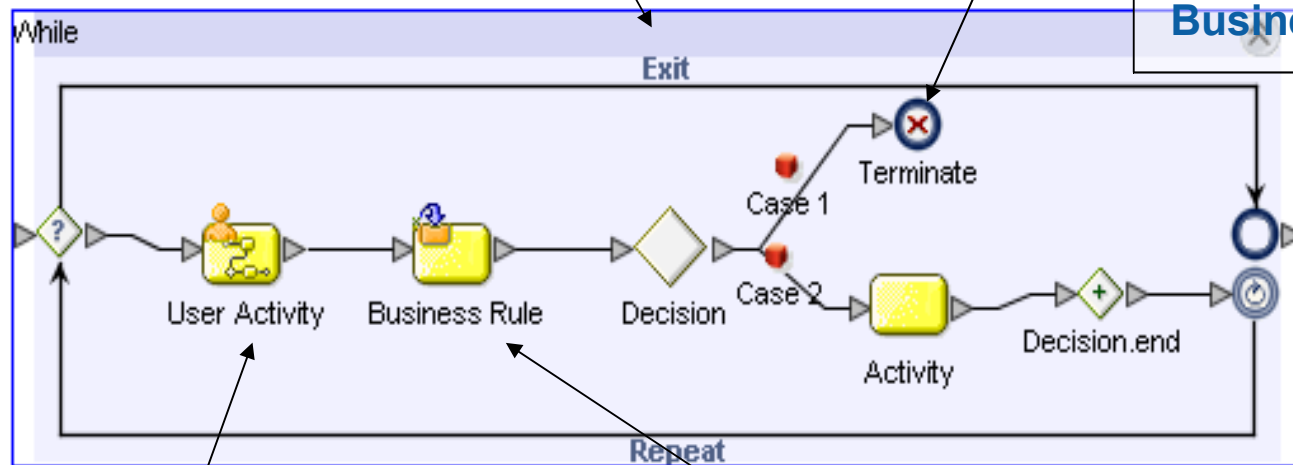
Basic Modeling Elements



Other Modeling Elements

While Loop – Pre-packaged modeling element used to create looping logic

Terminate – automatically stops all processing for an instance and completes the Business Process



User Activity – represents human intervention in a Business Process

Business Rule – create mappings into and out of Activities

Scope, Exception, Compensation

**Compensation activity –
used in an exception
handler to initiate the
compensation process**

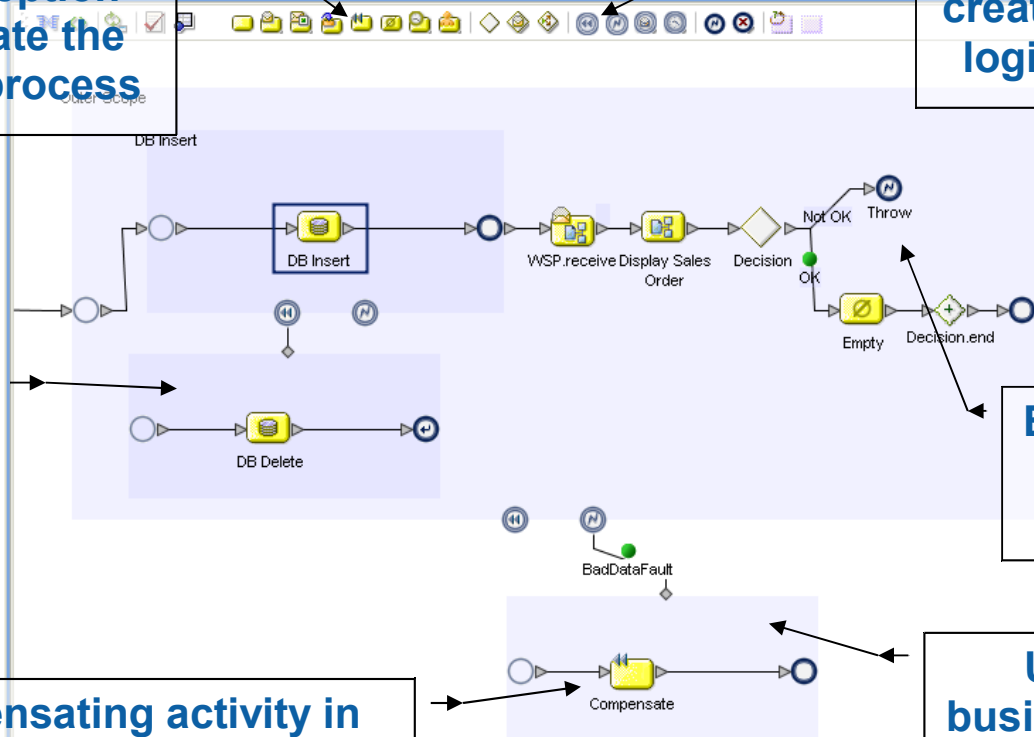
**Compensation handler –
drop within a scope to
create the compensation
logic for a given scope**

**Model the
compensation
as a Business
Process**

**Example of manually
modeled
“Exception” throw**

**This Compensating activity in
the exception handler indicates
the compensation for “DB
Insert” should be initiated**

**Users can model
business logic to handle
thrown exceptions**



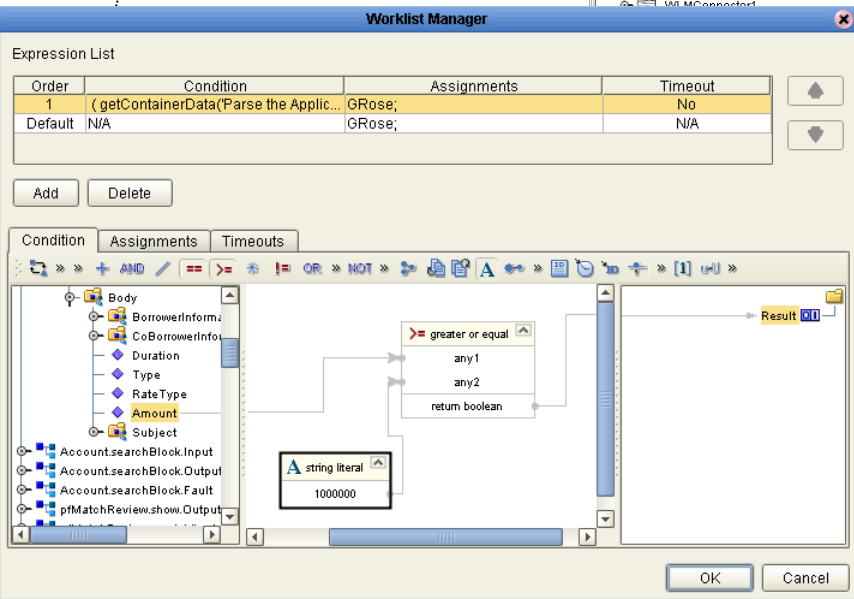
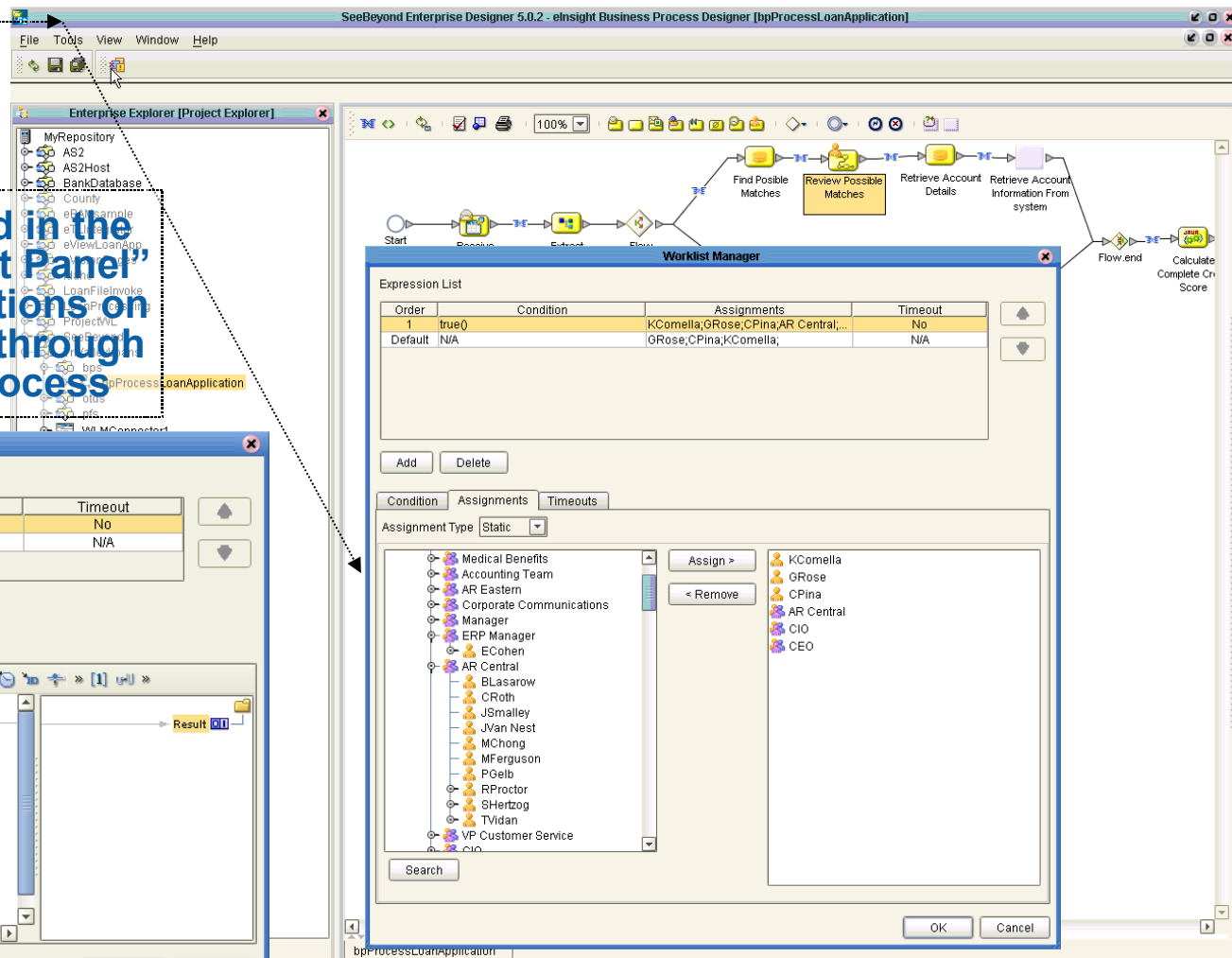
Modeling Concepts

- Drag and drop
- Roundtripping between model and BPEL code
- Correlations
- Complex Data Structures
 - > XPath
- Business Rules Designer
- Use all web service enabled components
 - > Java Collaborations, XSLT Collaborations, eTL Collaborations, eWays, sub processes, eBAM, eView Applications

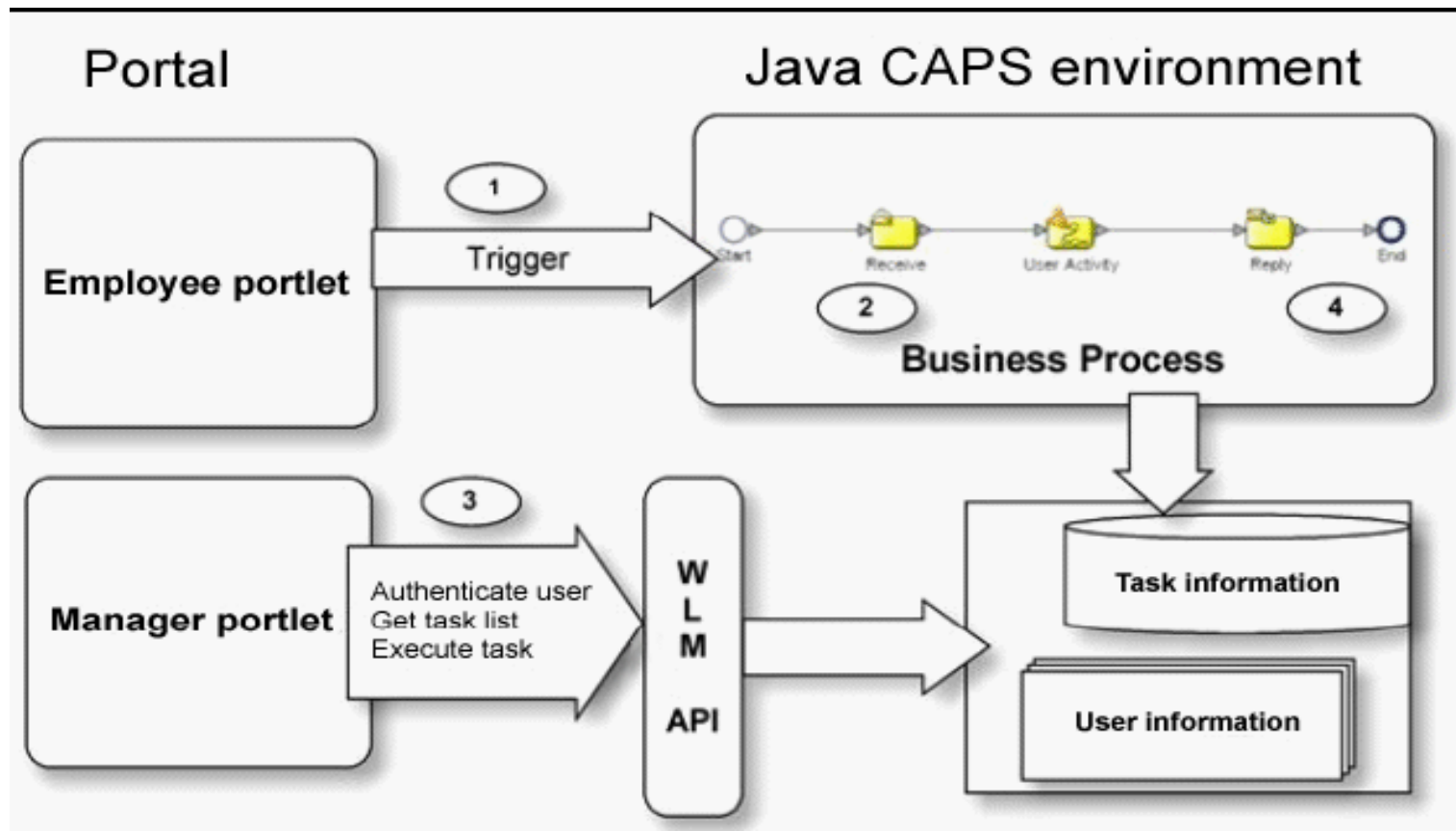
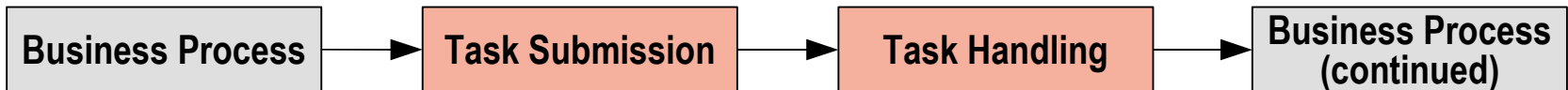
Human Workflow – Design Time

Users connect to an LDAP resource to assign tasks to users based on defined rules

Rules are created in the “Task Assignment Panel” by creating conditions on the data passing through the business process



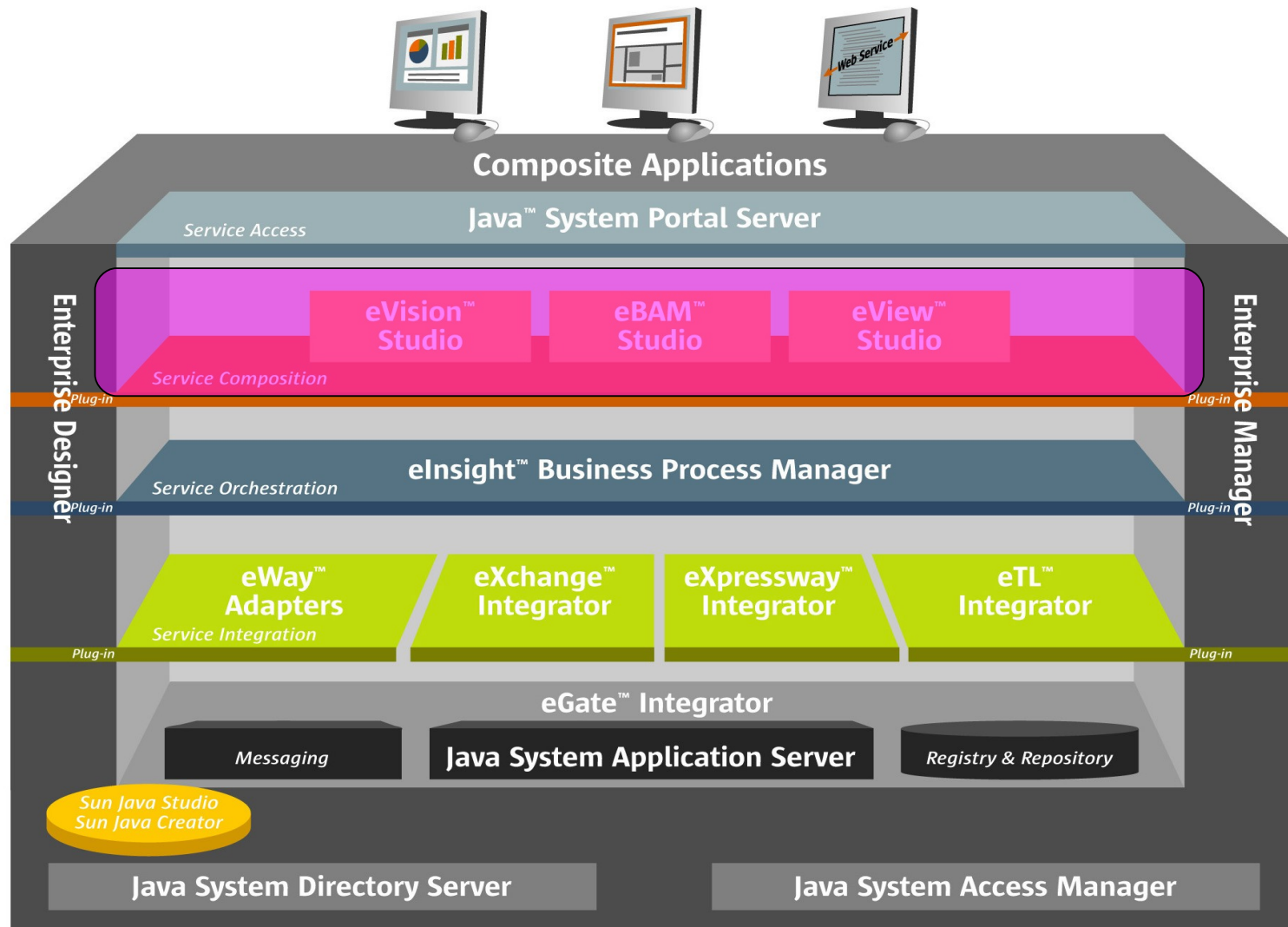
Human Workflow – Worklist Manager



Persistence and Security

- eInsight Engine can persist running business process instances to a database
 - > Enables recovery of business process instances from the last point of persistence in the case of system failure
 - > Multiple databases are supported
- Business Process exposed as and invoking Web Services can be secured
 - > Transport Level
 - Encryption – HTTPS
 - Authentication – HTTP Basic Authentication
 - > Message Level
 - Authentication – WS-Security Username Token Profile

eVision, eBam, eView Studio



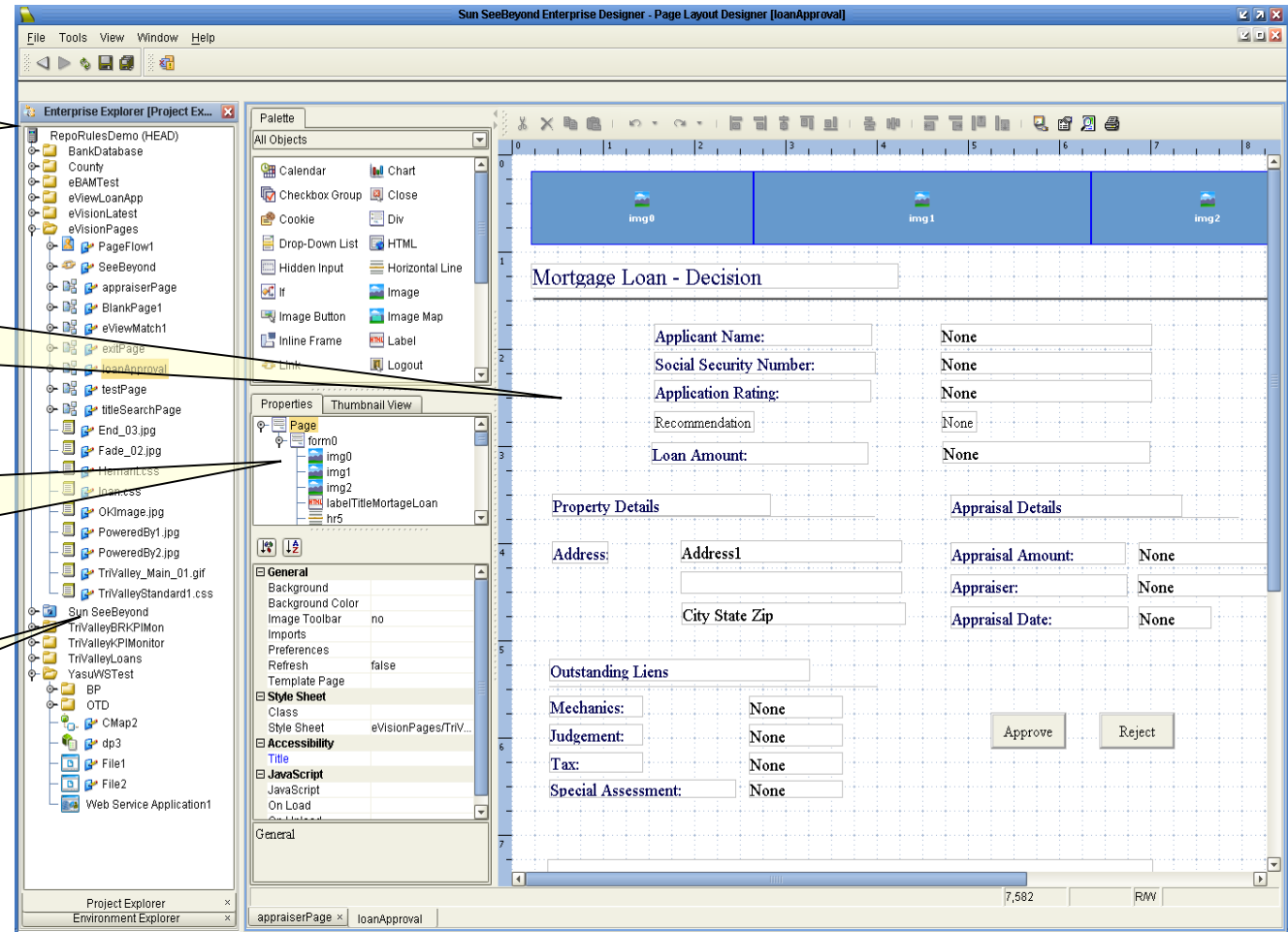
eVision Studio

Pages are built in the WYSIWYG Page Layout Designer

Users drag and drop prepackaged design objects from the Form Object palette

For each selected object in the designer, the properties appear for context and editing

Inventory of defined pages appear in the Project Explorer, organized by project

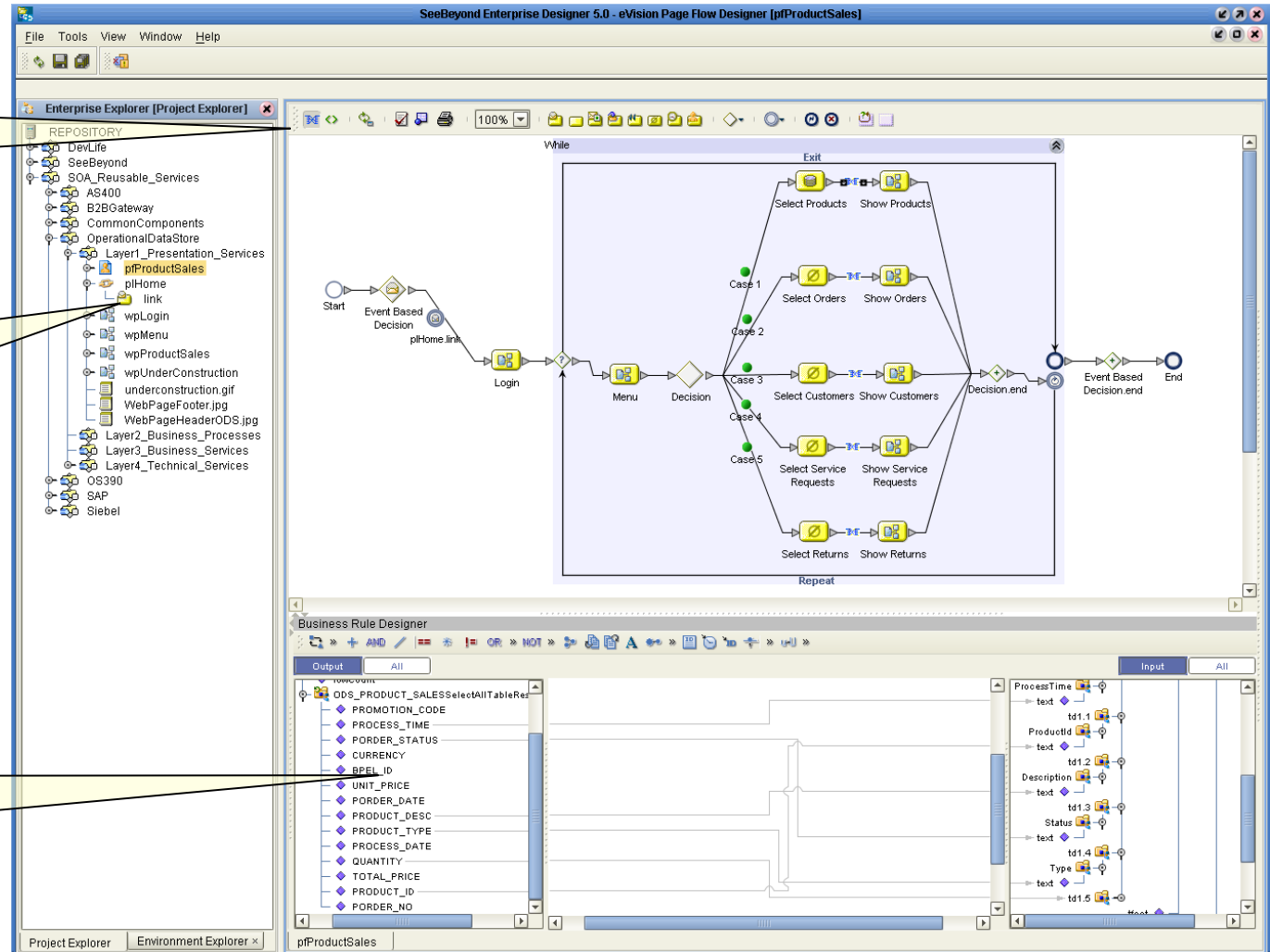


eVision Studio

Users add website components from a drag & drop toolbar.

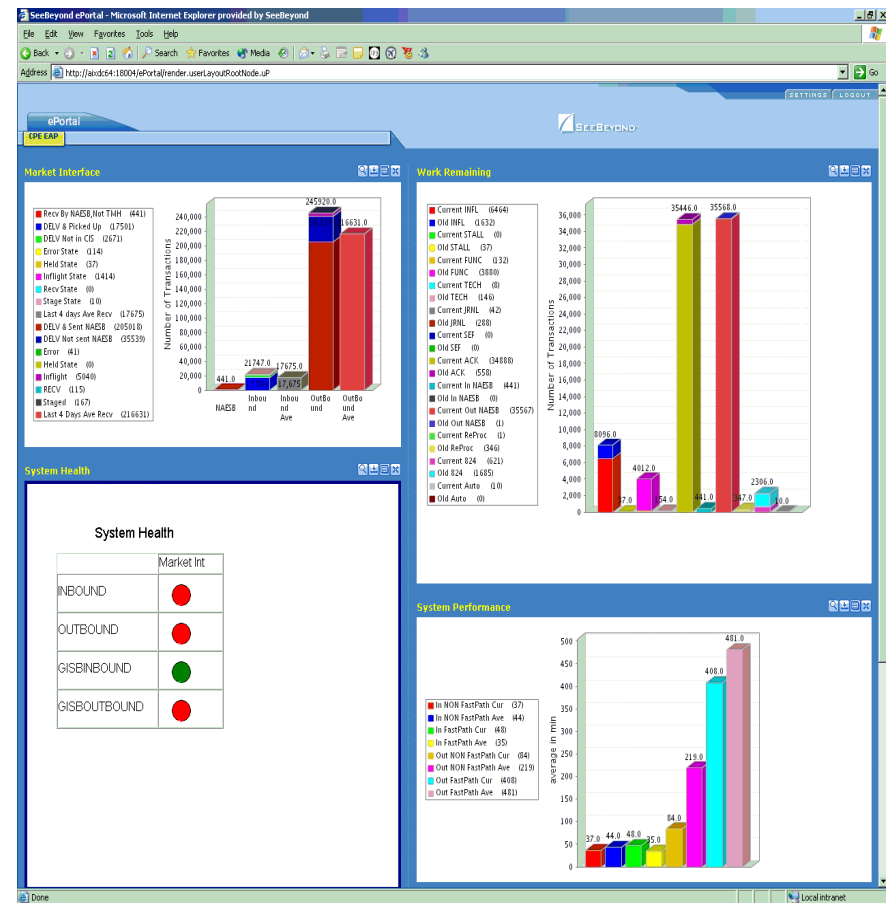
Page content is populated by sharable, re-usable components.

Fields on the web-page can be directly mapped to Object Types in the Dataflow.

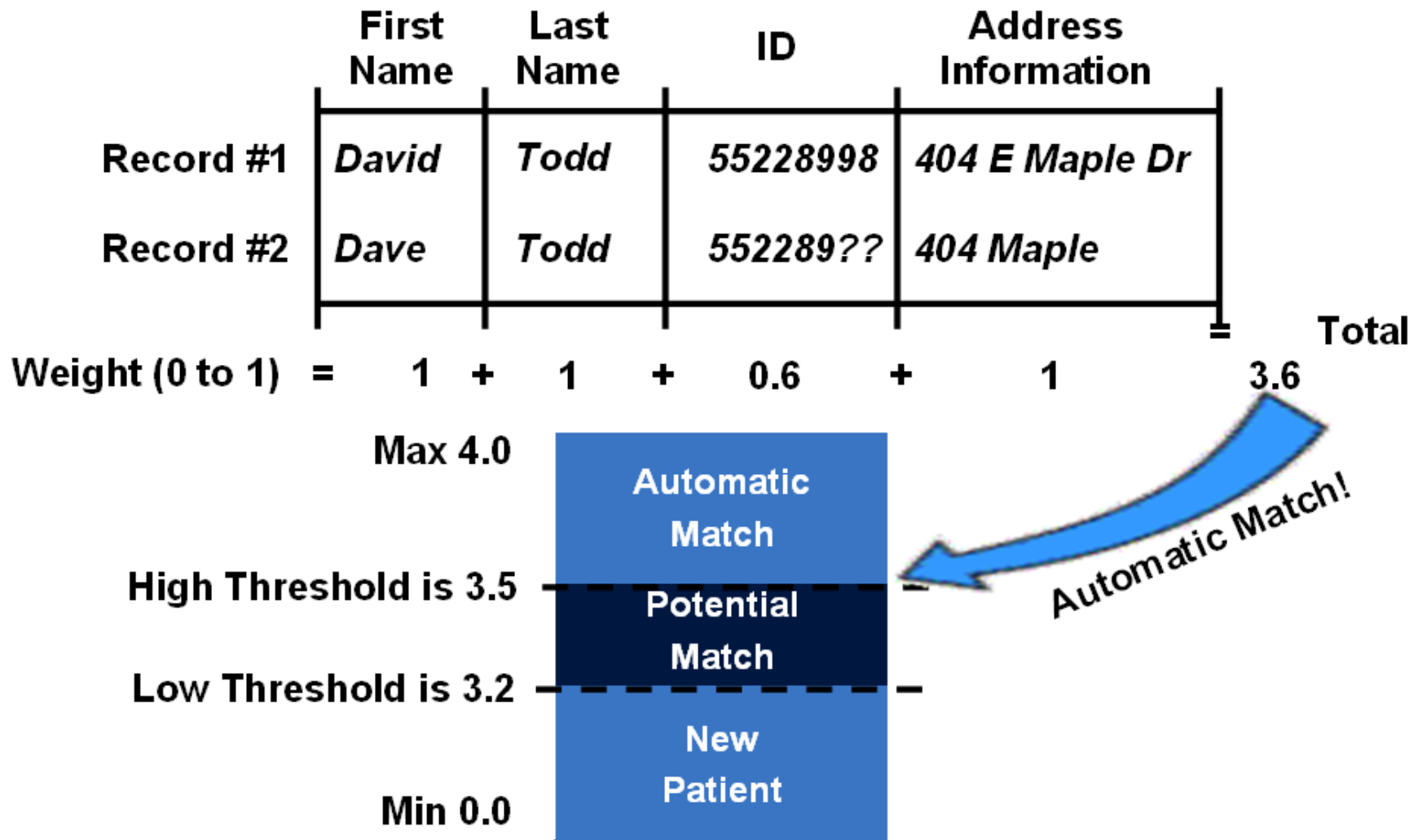


eBAM Studio

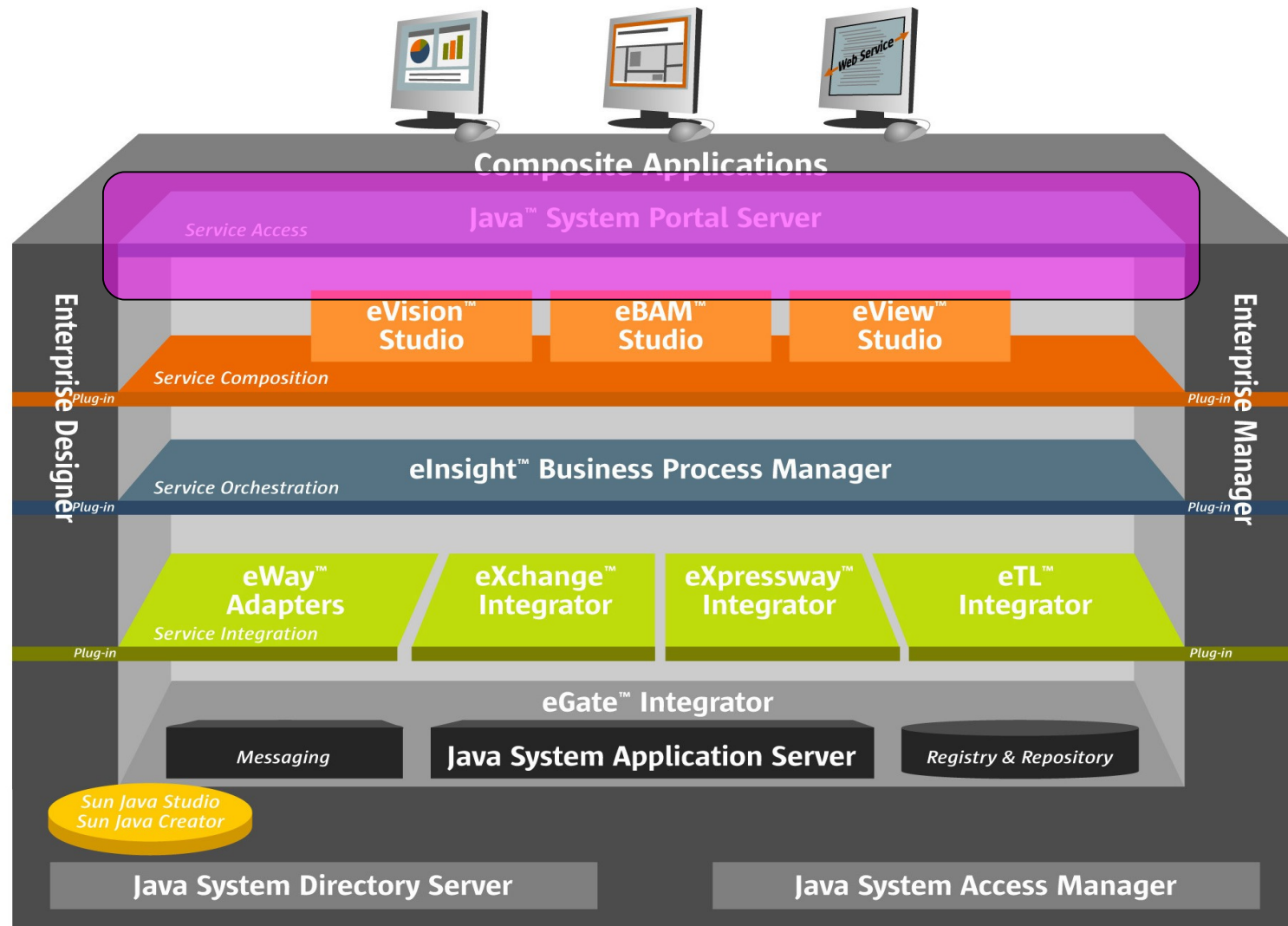
- Business Activity Monitoring dashboards tracking realtime Key Performance Indicators (KPI) and providing proactive exception management
- Automatic generation of data collection services for inclusion in business processes
- Access to any external application publishing events to the service bus
- Wizards for the generation of custom dashboards
- Aggregation and correlation



eView Studio – Single Entity View



Java System Portal Server



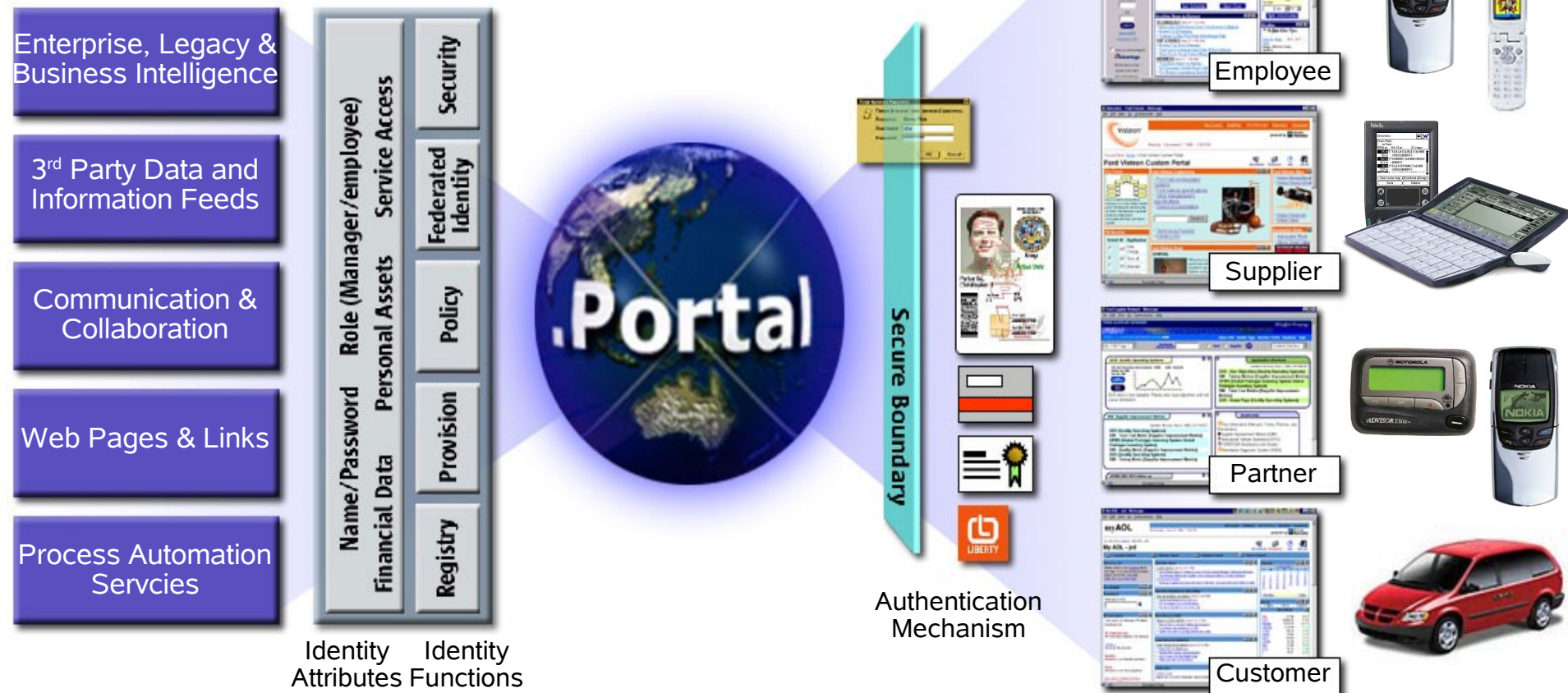
Java System Portal Server

*Data No Matter
Where It Resides*

*Securely Aggregated
and Personalized*

*Targeted
Communities*

Any Device



Java System Portal Server

- Identity&User Management
 - > Policy&Profile
 - > Single Sign-On
 - > Roles&Groups
 - > Delegated Administration
- Personalization
 - > Aggregation
 - > Identity-based Content
 - > Tab-based Grouping
 - > User-defined Preferences
- Search
 - > Google
 - > LDAP
 - > RDBMS
 - > Remote Search Servers
- Collaboration
 - > Email&Calendar
 - > Communities (Wikis, File Sharing, Forum, Surveys, Polls)
 - > Instant Messaging
 - > Tasks

Java System Portal Server

- **Enterprise Application**
 - > Siebel
 - > PeopleSoft
 - > Oracle Applications
 - > SAP
- **Mobile Access**
 - > Intelligent Rendering
 - > Mobile Groupware Connectivity
 - > Voice Access
 - > Print to FAX
- **Secure Remote Access**
 - > Browser-based VPN
 - > SSL VPN on the fly
- **Development**
 - > WSRP
 - > JSF
 - > Struts
 - > Page Flow
 - > Web Services
- **Administration**
 - > JMX-based
 - > Separate Admin-GUI
 - > Multiple Portals
 - > User-based Tracking
 - > Granular Logging

What comes next?

Java Business Integration

Business Process Management

Event Processing



Engines

WS-BPEL

JavaEE

IEP

Bindings

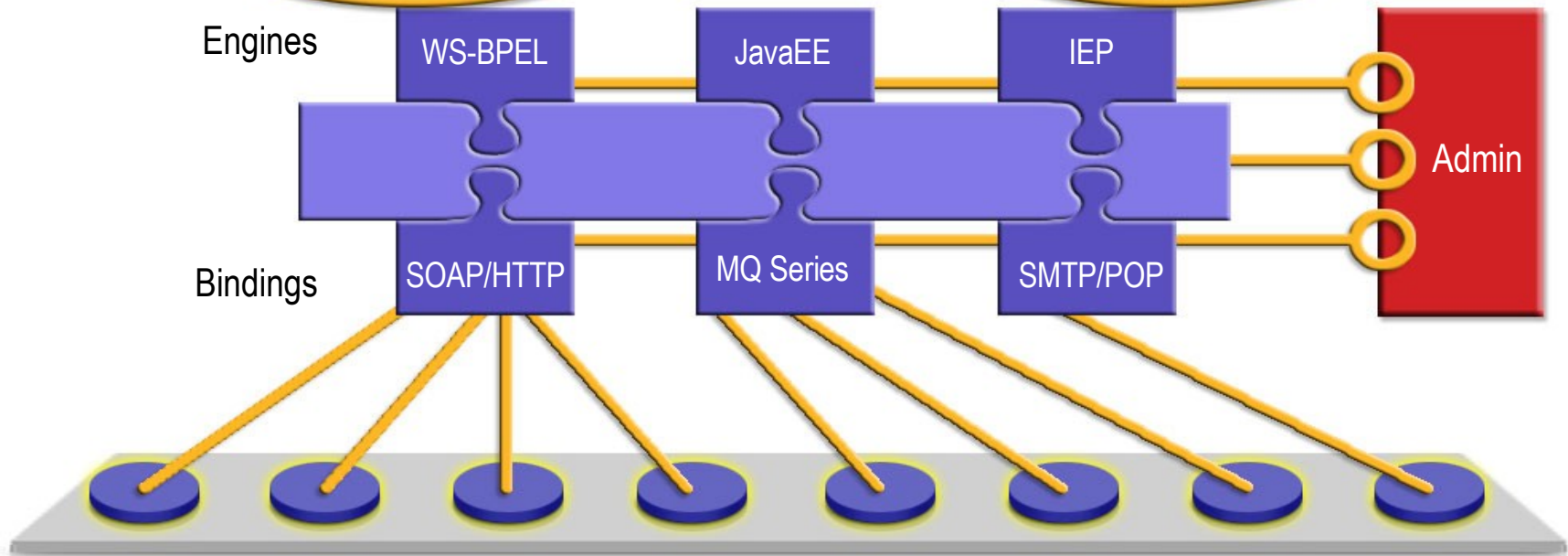
SOAP/HTTP

MQ Series

SMTP/POP

Admin

External Service Providers and Consumers

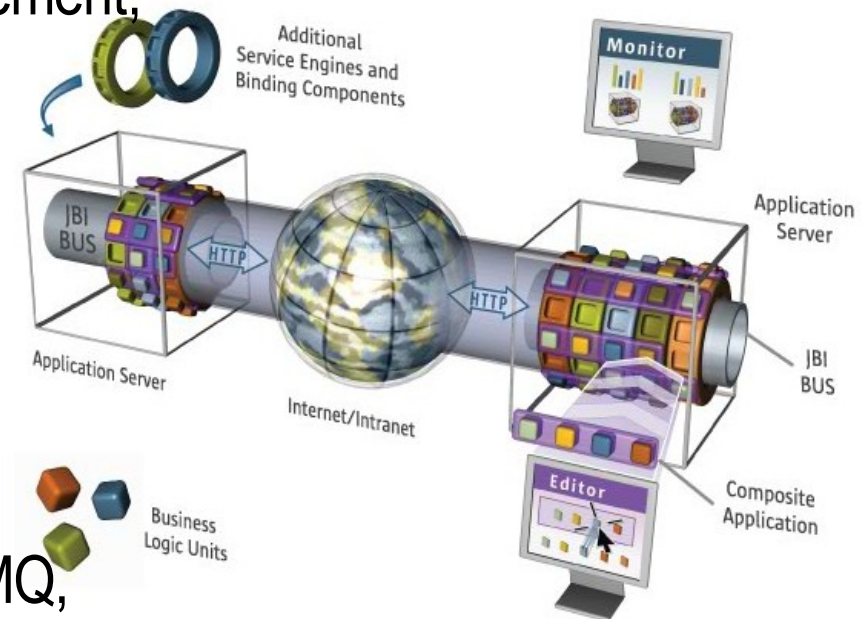


OpenESB

- Leverages GlassFish
 - > Support for JavaEE 5, Security, HA, Clustering, Transactions, Management, Monitoring, ...

- Leverages WSIT
 - > WS-Security, WS-Reliable-Messaging, WS-Atomic-Transaction, WS-Coordination, ...

- BCs & SEs
 - > HTTP/SOAP, JMS, Websphere MQ, File, FTP, CICS, HL7, SAP, ...
 - > WS-BPEL with HA and Persistence, JavaEE, XSLT, IEP, SQL, ETL, Workflow, ...



OpenESB

- Leverages NetBeans

- > WS-BPEL

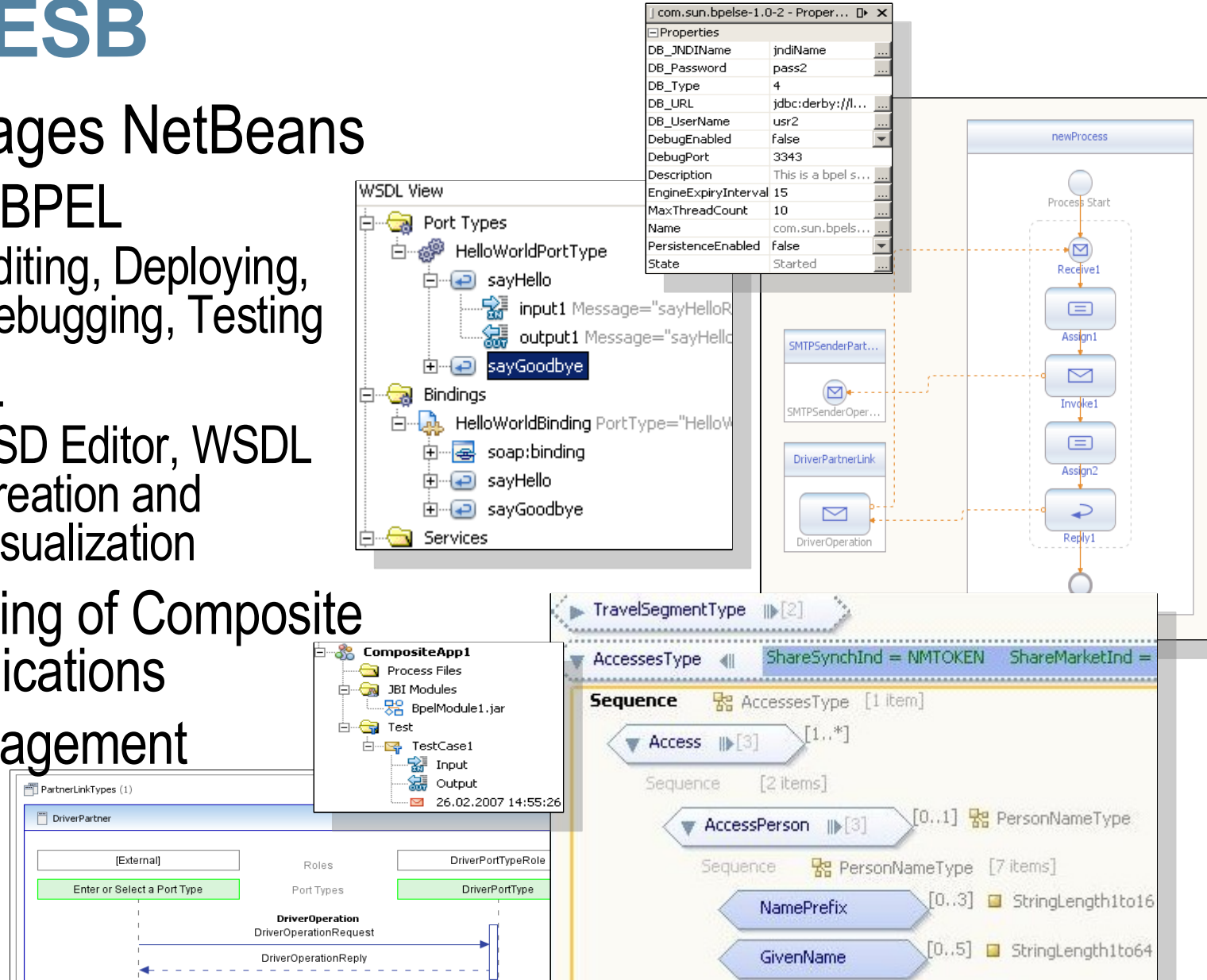
- Editing, Deploying, Debugging, Testing

- > XML

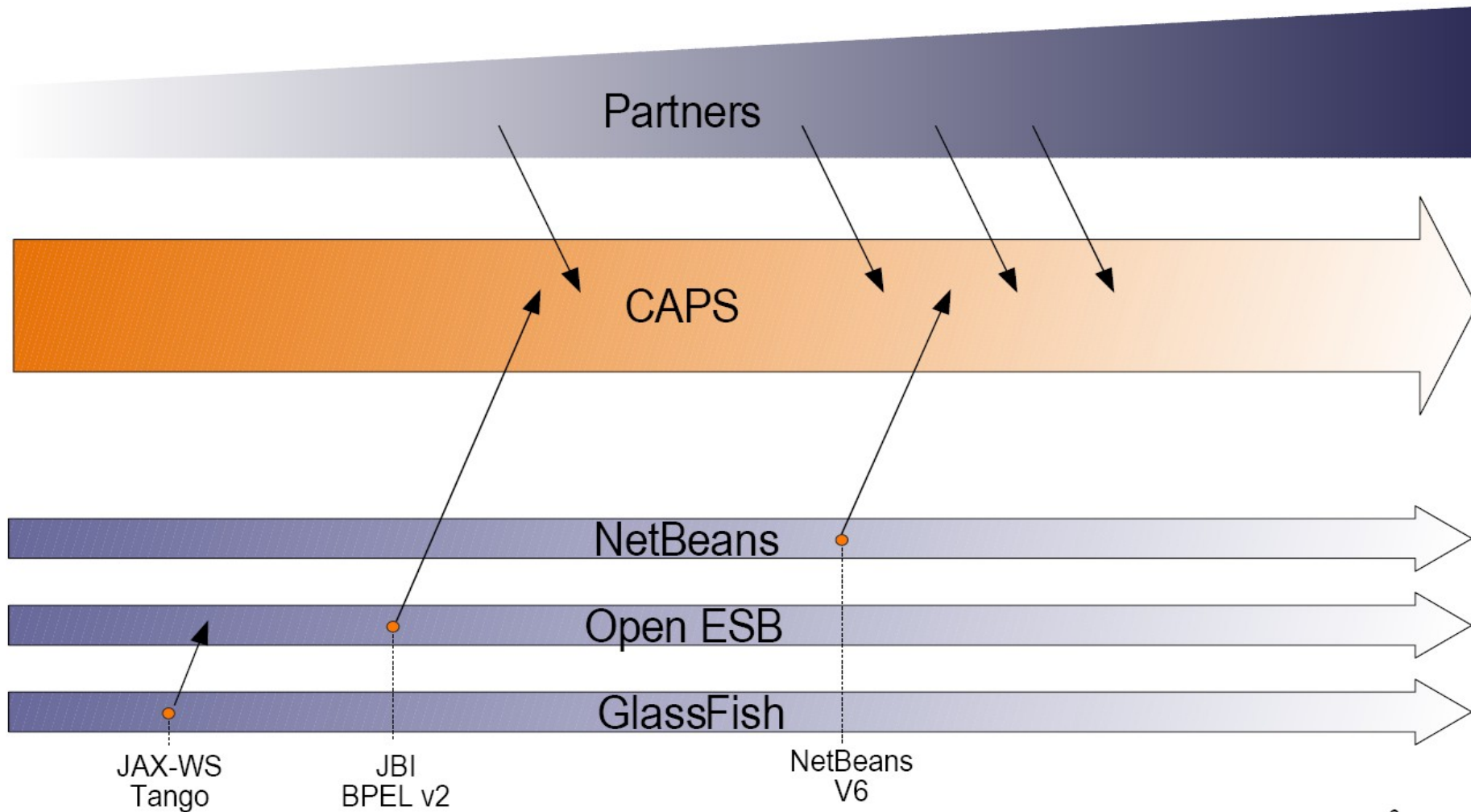
- XSD Editor, WSDL Creation and Visualization

- > Testing of Composite Applications

- > Management

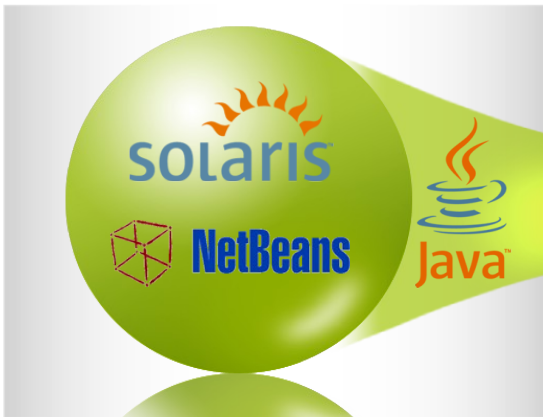


JavaCAPS and OpenSource



Choice, Transparency and Value

Open Source Choice



- NetBeans
- GlassFish
- OpenESB

Free Access Transparency



- Community Support
- Developer Support
- Developer tools & tips

Business Deployment Value



- JavaCAPS
- 24x7 Production Support
- Training
- Services
- Indemnification

Summary





Thank you!

Armin Wallrab

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Sun Microsystems

