Storyboard
Flexibility with Enterprise SOA
Version 2.0

Discovery System
Demo@SAP
2009
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1 DEMO SCENARIO OVERVIEW

1.1. KEY MESSAGES & BUSINESS BENEFITS

Today, your IT department must adapt as fast as business can, if not faster, and even anticipate change. By deploying Enterprise Service-Oriented Architecture (Enterprise SOA), you can increase flexibility and control your costs better. Enterprise SOA goes beyond the common concept of Web services and provides an enterprise infrastructure and approach to achieve better business results.

Enterprise SOA allows you to create new applications on top of existing enterprise solutions, increasing the value of your current systems and automating new processes. With enterprise SOA, you can:

- **Quickly adapt business processes** – Enterprise service-oriented architecture enables you to separate the interface and process definition from the underlying application. This results in faster implementations and more cost-effective upgrades, deployed as needed and without the business interruptions of "big-bang" approaches.

- **Attract new customers** – With enterprise service-oriented architecture, you can take advantage of Web services to deliver core competencies to new customer segments -- while reducing IT costs and increasing efficiency.

- **Out-task** – Enterprise service-oriented architecture allows you to connect to external partners, enabling you to access expert services, reduce costs and asset liabilities, and focus on your core competencies – all while retaining visibility and control into critical processes.

- **Extend and automate your value network** – Enterprise service-oriented architecture allows you to model and automate the terms of a business relationship, so you can extend business models and value chains with optimum speed and transparency.

- **Innovate** – Most significantly, enterprise service-oriented architecture enables SAP partners and customers to deploy innovative solutions that take advantage of existing systems. With enterprise SOA, you can run new processes on top of existing applications.

This demo shows how Enterprise SOA can be used today and how one can benefit today from SAP’s Enterprise Service-Oriented Architecture. In this demonstration is shown where the Enterprise Services delivered with mySAP ERP 2005 can be found and how these services can be used to provide flexible alternatives to the traditional SAP transactions.

We will focus on one simple Enterprise Service, Manage Sales Order, which will be used to create different sales order entry screens. By concentrating on one simple scenario and obtaining an understanding of the mechanics of Enterprise SOA, you will then be ready to apply this knowledge to more complex scenarios using several Enterprise Services as essential building blocks.

1.2. STORY OUTLINE

The Sales Manager Mel Lukes creates a standard order in mySAP ERP via the traditional SAP GUI. While doing this he has the idea of making the order creation simpler and more intuitive for his sales representatives. Therefore he draws a draft of the desired standard order screen. He schedules a meeting with Chris Watson, the Business Process Expert within the company, to discuss the possibilities of implementing his draft. Chris is using the Enterprise Service Repository to find an appropriate Enterprise Service to be used. Then he is using the SAP Visual Composer to implement the draft he received from the Sales Manager utilizing the Enterprise Services, which can be easily used via drag and drop. Since the Sales Manager was passionate after looking at the new sales order form created by the BPX in such a short time, he wonders if he can even make the easier form available for offline use. Therefore the Business Process Expert creates an Adobe Interactive Form which is using the same Enterprise Service and is working offline as well. The Sales Manager is excited about the new possibilities and sends out the Adobe Interactive Form to all his sales representatives.
representatives. At the end of this demo it is shown that the sales orders coming from different user interfaces are consistently created in the same ERP system.

### 1.3. ROLES

<table>
<thead>
<tr>
<th>DESIGNATION</th>
<th>NAME</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Manager</td>
<td>Mel Lukes</td>
<td></td>
</tr>
<tr>
<td>Business Process Expert</td>
<td>Chris Watson</td>
<td></td>
</tr>
<tr>
<td>Sales Representative</td>
<td>Sam Davis</td>
<td></td>
</tr>
</tbody>
</table>

### 1.4. USERS

<table>
<thead>
<tr>
<th>Predefined users</th>
<th>Password</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ctb_admin</td>
<td>sap123</td>
<td>Administrator for WebAS and Enterprise Portal – used for design time and development purposes</td>
</tr>
</tbody>
</table>

### 1.5. TYPE OF DEMO

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online demo (Discover System)</td>
</tr>
</tbody>
</table>

### 1.6. IMPORTANT: BEFORE YOU START

This document refers to different URLs on the Discovery System like Enterprise Portal, Visual Composer etc. Please note the the hostname `http://<SERVERNAME>:51000/...` could vary depending on the location of the server, e.g. “http://iwdfvm2160:51000/” or just simply “http://localhost:51000/” if you open a browser directly on the operating system of the Discovery System.

Please confirm your administrator to obtain the correct hostname.
2 FLEXIBILITY WITH ENTERPRISE SOA

2.1. CREATING STANDARD ORDER IN ERP

2.1.1 Overview
The Sales Manager Mel Lukes just received a call from an important customer, in which the customer mentions that he needs to place an important order. Therefore he decides to take care of the order creation himself. He accesses the SAP ERP system via the traditional SAP GUI using the transaction VA01 and creates a standard order.

2.1.2 Detailed navigation

<table>
<thead>
<tr>
<th>EP System Landscape</th>
<th>SAP Easy Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log on to the ERP system with client 200. admin/admin</td>
<td>Go to transaction va01 to create the Sales Order.</td>
</tr>
<tr>
<td>SAP</td>
<td>Here I am using the SAP GUI and I have called up the transaction VA01 for creating sales orders.</td>
</tr>
</tbody>
</table>
Enter or in the field **Order Type**
Enter **BP01** in the field **Sales Organization** and press enter key to confirm.

This transaction is very, very complete allowing me to create a wide variety of orders from the same transaction whether they be standard orders, rush orders, cash sales or credit memos. That's why I need to enter the order type 'OR' which represents a standard order.

Enter **c6120** in the field **Sold-to Party** and press enter key to confirm.

Select the company **RIWA Chicago** and proceed.

Fill out the **Material** (T20080), **Order Quantity** (40) and confirm with enter key.

I am creating an order here for one of my favorite customers, RIWA Chicago which has the ID 'C6120'. This customer wants to have 40 of our 'Cool Widgets', product 'T20080' which are sold individually which is why we have an entry 'EA' (meaning each) in the column 'SU' – Sales Unit.
Save the Sales Order.

Now all I need to do is save the order and you can see, we have a message saying ‘Standard Order 260 has been saved’.

You can see the message below the screen.

2.2. FINDING AN ENTERPRISE SERVICE

2.2.1 Overview

Chris Watson, the Business Process Expert, was involved in the upgrade of the ERP system to mySAP ERP 2005. In that project he learned about the capabilities of Enterprise SOA and the SAP NetWeaver platform. He decides to use the Enterprise Service Repository to find an appropriate Enterprise Service to be used.

Now in order to create this new user interface quickly and without having to modify our SAP ERP system, which incidentally I do not and am not allowed to do anyway, we should use an Enterprise Service that has been delivered by SAP as part of our mySAP ERP 2005 installation. The Enterprise Service will handle the connections to the ERP system and make sure that the data entry is consistent. Therefore, I don’t need to think about data mappings or error handling routines.

Let’s see where we can find the right Enterprise Service.

2.2.2 Detailed navigation
Open the browser and go to **Enterprise Service Workplace** in order to browse the Enterprise Service.

Note: The link is http://<SERVERNAME>:51080/socoview/flddisplay.asp

Click on **mySAP ERP**

Here I am in the Enterprise Services Workplace, a repository accessible via my web-browser. For those of you who are familiar with the SAP Software Developer's Network (SDN), you may have already accessed similar information on sdn.sap.com. This Enterprise Services Workplace is based on SAP Solution Composer and will be available as an enhancement package to mySAP ERP 2005. We have access today to this workplace as we are using an Enterprise Services Discovery Server for this presentation.

On the ERP Solution Map click on **Sales Order Management**

Access to the Enterprise Services is via the SAP Solution Map. We are interested in the area of Sales and Service and in particular, the area of Sales Order Management.

Click on **Sales Order Processing**

**Sales Order Processing**

The order management at customers. In addition on explode structured produc

requirements to produc
to perform incompletes
Click on **Manage Sales Order** under **Enterprise Service Interface**

Now we can see the different Enterprise Service Interfaces. Notice there are 2 relating to Sales orders: Manage and Query. Let’s have a look at this one: ‘Manage Sales Order In’.

<table>
<thead>
<tr>
<th>Process Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Return Processing</td>
</tr>
<tr>
<td>Sales Order Processing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enterprise Service Interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Sales Order</td>
</tr>
<tr>
<td>Query Sales Order</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Also</td>
</tr>
<tr>
<td>- Enterprise Services Index</td>
</tr>
</tbody>
</table>

Click on **Create Sales Order**

Now you can see the name of the service **SalesOrderCreateRequestConfirmation_In** and **WSDL**

Now let’s have a look at this ‘Create Sales Order Enterprise Service Operation’. Here is the actual web-services definition language or ‘wsdl’ file.

The Technical Documentation is part of the the SalesOrderProcessing ERP

Note: Currently, this feature is not configured on the Discovery System. For your convenience, download from SDN under SAP Discovery System > Introductory Exercises > “Download Sales Order Processing file”

Extract the file to Desktop, then open SalesOrderProcessing.Pdf.

<table>
<thead>
<tr>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP Component or Feature Available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagrams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Order Processing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Also</td>
</tr>
<tr>
<td>- Where used</td>
</tr>
<tr>
<td>- SalesOrderProcessing ERP (PDF, 115 KB)</td>
</tr>
</tbody>
</table>
2.3. LOOKING AT ENTERPRISE SERVICE INTERFACE (SPROXY)

2.3.1 Overview

This scenario shows how to see the technical side of Enterprise service like interface, data type and structure etc.

2.3.2 Detailed navigation

Detailed navigation
Log on to the ERP system with client 200, admin/admin

Go to the transaction sproxy to see the Interface/data type/structure etc. inside the Enterprise Service.
Select the Software Component “ESA ECC-SE 600”, then 
“http://sap.com/xi/APPL/SE/Global, then “Message Interface (inbound)”

Scroll down to the SalesOrderCreateRequestConfirmation_In

Click on the tab Structure

Look at the Interface
2.4. TESTING THE ENTERPRISE SERVICE (WSADMIN)

2.4.1 Overview

Chris decides to test the Enterprise Service to see if it offers the needed functionality. He uses the testing environment of the Enterprise Service repository and enters some values to make an example query. In the result he finds that the Enterprise Service offers everything he needs.

Now before we use this Enterprise Service to create a new interface, let’s test the service. As I have said, the Enterprise Service handles the entire connections to the SAP ERP system and therefore, it should be possible to add data as parameters to the service and create a sales order.

Now go to transaction wsadmin in order to test the Enterprise Service.

Back in my SAP GUI session and having called up the transaction WSADMIN, I can now see all the Enterprise Services delivered with mySAP ERP 2005.

Expand the SOAP Application for XI Proxies.

We are looking in the section SOAP Application for XI Proxies Because SAP XI is the entry point for all Enterprise Services.
Browse for **ECC_SALESORDERCRTRC**

You remember we noted the related Web Service Definition from the Adobe pdf documentation, namely ECC_SalesOrderCRTRC? Well here is the same.

Select the **Service** and click on this icon

And remember I said there were two services relating to sales orders: Manage and Query? Well here they are. As I know that all SAP processes are always categorised in the same order, maintain and view, we need to take this first operation and test it.

Select **Document Style** and Continue.

If prompted for username and password, enter ctb_admin/sap123

Logon with **admin/admin** then click on **Submit**

**ECC_SALESORDERCRTRC**

*Authorization*

The selected endpoint requires basic authenticator

Username: admin
Password: ********
Submit

Click on **Test**

Now my web-browser is opening and I can now test the service. Here you can see we have the right service for creating sales orders.
Click on the Operations SalesOrderCreateRequestConfirmation_In

And here I have a screen for entering the parameters. I will enter the same order details as we used before.

Fill out the required information as described below:

**Check the box for “Skip Message Header”**

- **ProcessingTypeCode**: or
- **BuyerParty**: c6120
- **SalesOrganisation**: bp01
- **Product**: T20080
- **Quantity**: 40

and click on **Send** button

Now you can see the response from the service that sales order has been created.

Now when we hit ‘Send’, let’s see what happens. Just like with the standard R/3 transaction, an order is created. This tile it is 265 and note that the text in this note field is similar: ‘Standard order 265 has been saved’.

### 2.5. BUILDING THE NEW USER INTERFACE

#### 2.5.1 Overview

Now that we have seen how the Enterprise Service works, let’s proceed with connecting this Enterprise Service to the Portal.
2.5.2 Detailed navigation

2.5.3 Configuration

This step is only required when system connection is not available in the portal, if the system is already connected to the portal you can ignore this step.

**How to connect an Enterprise Service to Portal**

Logon to the portal

Note: The link is http://<SERVERNAME>:51000/irj

Right click on the folder ESOA – Sales Order and select New – System (from template)

Select Web Service System using WSDL URL from the System Wizard Template
Give the system Name and ID
Example:
ECC_SALESORDERCRTRC
ECC_SALESORDERCRTRC
Then click on Next button

Click on OK to open the object for editing

Make sure that you change the User Mapping Type to admin, user
Paste the URL from the previous step in wsdl URL

Don’t forget to change logon method to UDPW

Then go and create the system alias

Example: ECC_SALESORDERCRTRC
Then click on Add

Save the alias.

Don’t forget to map the user – click on User Administration – Identity Management
Search the user **ctb_admin** and select

Click on the button **Modify**

Then click on the tab **User Mapping for System Access**

Select the system **ECC_SALESORDERCRTRC** from the dropdown system.

Give the user and password and save

Now you ready for the **Connection Tests**
Select the **Connection Test for Connectors** and click on the **Test** button

### System Connection Tests

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Connection Test for Connectors</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Clear Results</th>
</tr>
</thead>
</table>

Now you can see the **Test Results**

### Results

- **Test Connection with Connector**
  - **Test Details:**
    - The test consists of the following steps:
      1. Retrieve the default alias of the system
      2. Check the connection to the backend
  - **Results:**
    - Retrieval of default alias successful
    - Connection successful

### 2.5.4 Detailed navigation

Chris already used the SAP Visual Composer and he knows about its modeling capabilities to compose an application without programming. He’s now using Visual Composer to implement the draft he received from the Sales Manager. In Visual Composer Enterprise Services can be easily used via drag and drop. Chris can be sure that the application he composes works perfectly, since the Enterprise Service he is using is utilizing the functionality from the ERP system.

### Visual Composer Design Time

Start the Visual Composer Design Time.

**Note:** The link is http://<SERVERNAME>:51000/VC

Log on with the user **ctb_admin/sap123**.

Here I am using SAP Visual Composer, accessible again via my standard web-browser.
The Design Time starts in another window.

Drag iView from the **Components** to the canvas and give the name **Create Sales Order**

Let’s create a new model and call it ‘Create Sales Order’. In order to render this new application, we need to have an iView and again, let’s call this ‘Create Sales Order’. Now we can create our application proper.

Double click on the **Create Sales Order**

Click on the find data to browse for the Service

Let’s first get the Enterprise Service we have identified. You remember there were two operations associated with this service, Create and Query – well here they are.

Select the system **ECC_SALESORDERCRTRC** and click on Search

Then drag the service **SalesOrderCreateRequestConfirmation_In** to the canvas.
Right click on the service and go to **Define Data Service**

Select the **BuyerParty_SellerID**, **Date**, **DateTerms_RequestDate**, **ProcessingTypeCode** and **SellerOrganisationParty_SellerID** from the Input Portal **Sales Order**

---

Right click on the service and go to **Define Data Service**

Select the **Product_SellerID**, **TotalValues_RequestQuantity**, and **TotalValues_RequestQuantity_unitcode** from the Input Ports **SalesOrder_Item**

---

Drag the input port **Sales Order** and select **Add Input Form**

Drag the input port of **Sales Order Item** and give output to **Salesorder Form**

Double click on the **Salesorder Form** to see the properties

Click on the **Plus** symbol to add two more fields to the form.
Select the control type as **Input Field**, Data type as **Text** and Field name should be **Product** then click **OK** button.

Select the control type as **Input Field**, Data type as **Number** and Field name should be **Quantity** then click **OK** button.

Select the connection between **Salesorder Item** and **Salesorder Form** to see the properties of **Salesorder Item**.

Select **@Product** from the dropdown for the field **Product_SellerID** in order to map the field.
Select **@Quantity** from the dropdown for the field **TotalValues_Requested** in order to map the field

Drag the **Log Item** from the output port and **Add Table View**

Select **CategoryCode**, **Note**, **SeverityCode** and **TypeID** from the list

Now the model should look like this!

To adjust the Layout click on **Layout** tab

Adjust according to your choice
Adjust according to your choice

Click on **Deploy**

![Deploy to Portal](image)

**Deployed successfully!**

Click on **Run “Create_sales_order”**

![Run “Create_sales_order”](image)

Fill the data and click on **Submit button**

So you can see we now have a very simple to use order entry form which took me very little time to build and required absolutely no coding whatsoever by me. Imagine with more time and imagination what you could do!

Here you can see the message that sales order has been created

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### 2.6. USING ADOBE INTERACTIVE FORM

#### 2.6.1 Overview

Since the Sales Manager was passionate after looking at the new sales order form created by the BPX in such a short time, he wonders if he can even make the easier form available for offline use. His sales representatives are travelling around, so offline capabilities would be a great benefit for the business, since an order can be filled out anytime, anywhere. The Business Process Expert creates an Adobe Interactive Form which is using the same Enterprise Service and is working offline as well. The Sales Manager is excited about the new possibilities and sends out the Adobe Interactive Form to all his sales representatives.

#### 2.6.2 Detailed navigation
Double click on the Sales_Order_form.pdf on the desktop.

Note: If the document is not already downloaded to the desktop, you can get it from the portal (http://<SERVERNAME>:51000/irj) by using the user: proc_sales/sap123

Select the required information as described below:
**Sold-to Party**: Riwa Chicago-C6120  
**Product**: Widget-T20080  
**Quantity**: 40  
Then click on Submit.

Now you can see the status that **Sales Order** has been created successfully.
2.7. DISPLAYING SALES ORDERS

2.7.1 Overview

Independent from different user interfaces all sales orders are consistently created in the same ERP system.

Finally let’s have a look at all the Sales Orders we have created for RIWA Chicago. I am back in my SAP GUI and am using the transaction VA03. We enter our customer number ‘C6120’ and here are the orders:

2.7.2 Detailed navigation

Log in to the ERP system with client 200. admin/admin

Go to the transaction va03 to display the Orders

Click on the Orders

Enter c6120 in the field Sold-to party then press enter key

In the Sales Organization field enter bp01 and continue
Here you can see the list of Sales Orders which we have created.

### List of Sales Orders

<table>
<thead>
<tr>
<th>SKU</th>
<th>Qty</th>
<th>Item</th>
<th>Description</th>
<th>Doc. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>366</td>
<td>10</td>
<td>1</td>
<td>COOL WIDGET OR</td>
<td>11/07/2006</td>
</tr>
<tr>
<td>261</td>
<td>10</td>
<td>1</td>
<td>COOL WIDGET OR</td>
<td>11/07/2006</td>
</tr>
<tr>
<td>260</td>
<td>10</td>
<td>1</td>
<td>COOL WIDGET OR</td>
<td>11/07/2006</td>
</tr>
<tr>
<td>205</td>
<td>10</td>
<td>1</td>
<td>COOL WIDGET OR</td>
<td>11/06/2006</td>
</tr>
</tbody>
</table>

**Deliver Date** | **Created by**
--- | ---
11/07/2006 | ADMIN
11/07/2006 | SUPPLIER
11/07/2006 | ADMIN
11/07/2006 | ADMIN