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Applies To:

SAP Technology, SAP Web Application Server, Adobe Interactive Forms

Summary

This article offers a set of guidelines to integrate Interactive Forms based on Adobe software with Web Dynpro in SAP Web Application Server 6.40.

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About this Tutorial:

The SAP NetWeaver Competency group at Wipro Technologies Ltd is involved in many solution demonstration projects within the SAP NetWeaver stack. One such project, which we call “[Creating a Comprehensive Collaborative Platform with SAP NetWeaver](#),” was carried out using SAP NetWeaver components – SAP Enterprise Portal (SAP EP), SAP Exchange Infrastructure (SAP XI), SAP Web Application Server (SAP Web AS), etc. – and third-party parsers like JAXB.

In this series we envisioned a real-world business scenarios with five key players – ORGA, ORGB, ORGC, ORGD, AND ORGE – with respective roles of vendor (buyer), customer, supplier, subcontractor to ORGC, and external supplier.

The business flow of this project starts from the sales order creation by ORGA to delivery creation, and finally ends with invoice integration. Since our business users required the invoice details to be shown as a report, we thought of using Interactive Forms based on Adobe software along with Web Dynpro. The various steps for doing so are presented in this paper.

Need for Adobe Interactive Forms

Interactive forms help organizations cut costs, boost productivity, and enhance customer satisfaction and competitiveness. By incorporating the use of interactive forms, companies can expect these benefits to follow:

- 1) Reduced operational costs stemming from the elimination of time-consuming, error-prone paper document processing.
- 2) Increased competitiveness through more rapid delivery of crucial materials.
- 3) Improved efficiency from customized forms with personalized customer information, local currency calculations, and geographically-specific data.
- 4) Improved communication with extended teams and external parties.

Interactive Forms in SAP Netweaver 04

Business View

Organizations can bridge their highly-structured transaction data stored in powerful enterprise systems with their unstructured, document-based information and processes by this integration. Integrating Interactive Forms with SAP provides the following benefits:

- 1) Easy and automatic information extraction from SAP systems, and secure deliver to recipients with data tuned specifically to their needs, their location, and other requirements.
- 2) Activate key end-user functions, such as the ability to comment on or digitally sign the form, which can be customized for each recipient of an Adobe PDF file. Any recipient can interact with the form. And since the form data follows the document, recipients can work online and offline.
- 3) Return the completed form to the SAP system to automatically update the business data with the new information.
- 4) Create custom templates to format SAP data as an intelligent interactive form deliverable in multiple output formats, including PDF, email, fax, or web pages, and corporate branding elements, such as logos or images.

Technical View

- 1) Interactive Forms based on Adobe software are fully integrated into SAP Web Application Server 6.40.
- 2) Adobe Document Services are deployed on the SAP J2EE Engine.
- 3) Adobe Designer is fully integrated into SAP NetWeaver Developer Studio and ABAP Workbench.
- 4) Online and offline Interactive Forms (integrated into Web Dynpro for Java Framework) support interactive business scenarios.
- 5) Printing of documents.

Components Required

Server Side Components

- 1) **SAP Web Application Server 6.40** – The Web Application Server contains an ABAP, Java, Web Dynpro runtime for executing ABAP, Java, Web Dynpro applications.
- 2) **Adobe Document Services (ADS)** – Adobe Document Services offered by Adobe as web services provides services for generating PDFs based on the layout description (XFT = XML Form Template) and data (XFD = XML Form Data) or for the extraction of data from a PDF. ADS written in Java needs installation of the Java stack on SAP Web AS. The PDF object calls the web services via a web service client proxy. These web services offer the functionality of an EJB, which exposes the functionality of the Adobe Document Service.

Client Side Component

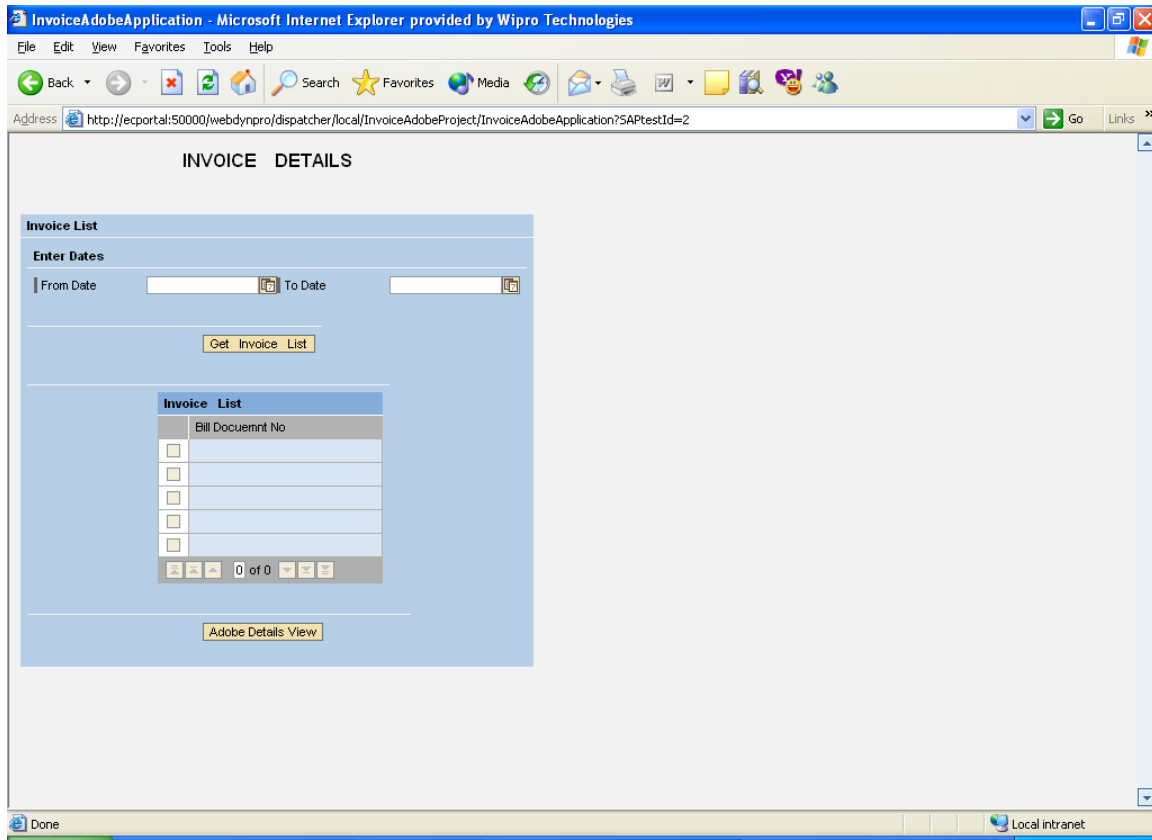
- 1) **SAP NetWeaver Developer Studio** – Enables you to develop Web Dynpro applications with Interactive Forms.
- 2) **Active Component Framework (ACF)** – Consists of ActiveX controls, i.e., the Designer Integration Control and Reader Integration Control.
 - **Designer Integration Control** – Enables tight integration of Adobe Designer into the Developer Studio at design time for designing your form layout; generates XFTs (XML Form Templates).
 - **Reader Integration Control** – Enables the communication between the Adobe Reader and Web Dynpro application for designing your form layout, generates XFTs (XML Form Templates).

Invoice Adobe Details Example

We thought of doing an exercise in Adobe integration with WebDynpros. The idea was simple: We planned to show the invoice details consisting of both header and line items in an Adobe Designer form, thereby illustrating that Interactive Forms based on Adobe software can be used for complex WebDynpros integration as well.

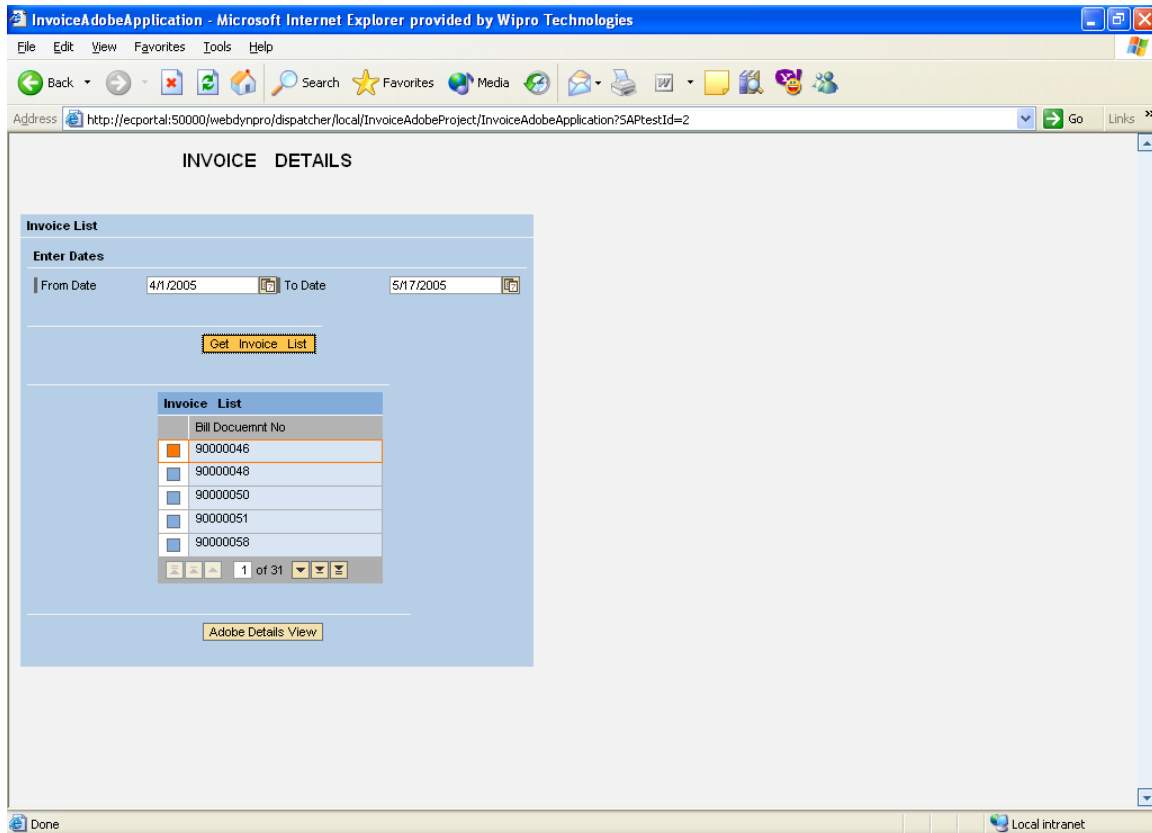
Assuming that the regular business flow starting with creation of the quotation to the creation of invoice had been done, here we focus population the details of particular invoices in an interactive form.

Listing of Billing Document



The above WebDynpros view is the starting point of this exercise. The screen is self-explanatory. This view will populate the list of billing documents from SAP R/3. The user needs to supply the date range for which he/she requires the list of billing documents to be viewed. This will internally call a custom BAPI(ZNW_INVOICE_LIST) that has "From Date" and "To Date" as input parameters, and that will export document number (Vblen) as an output parameter.

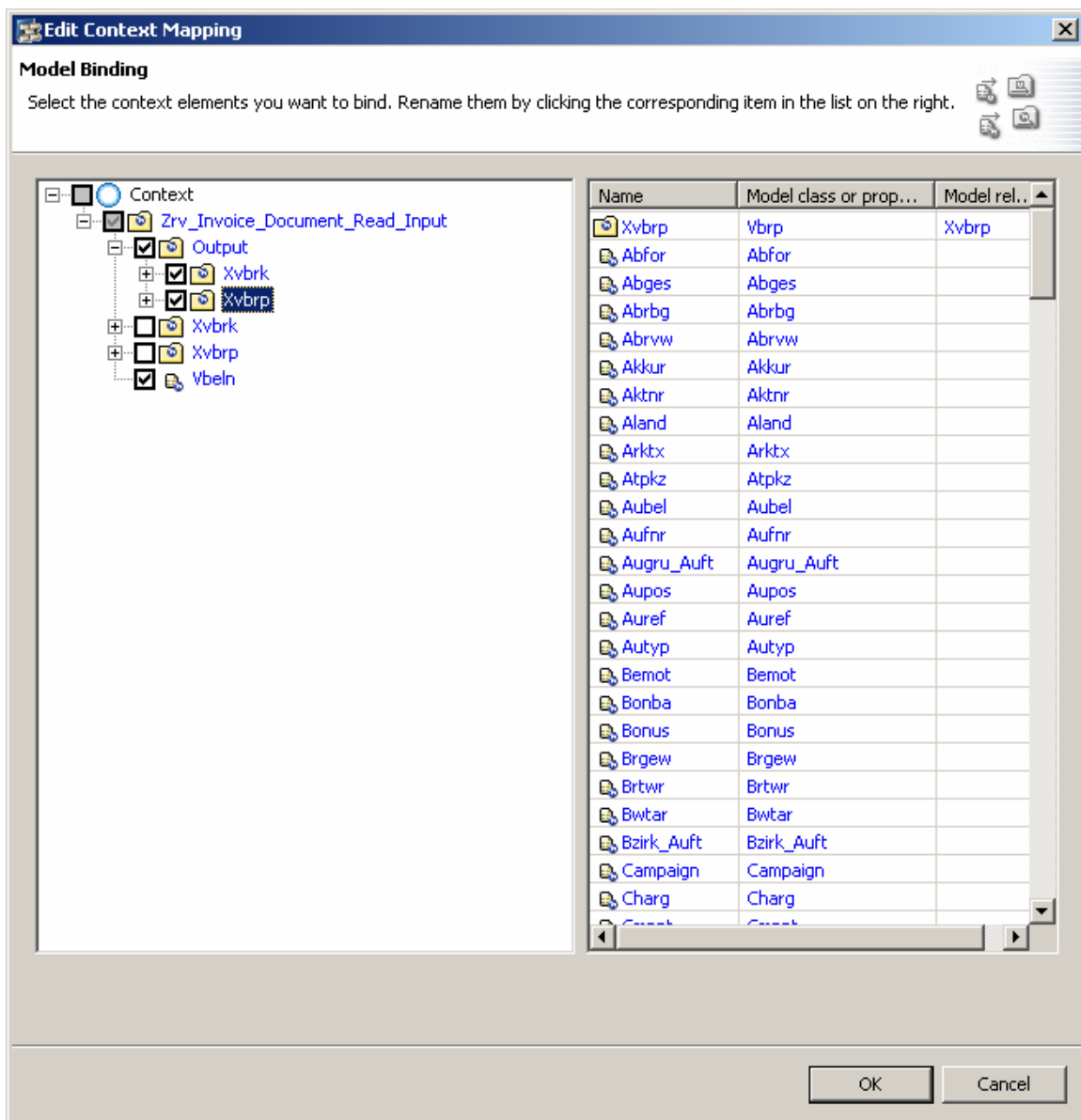
For example, if a user gives 1-Apr-05 as the start date, and the current date as the "To" date for the above view, the output is something as below:



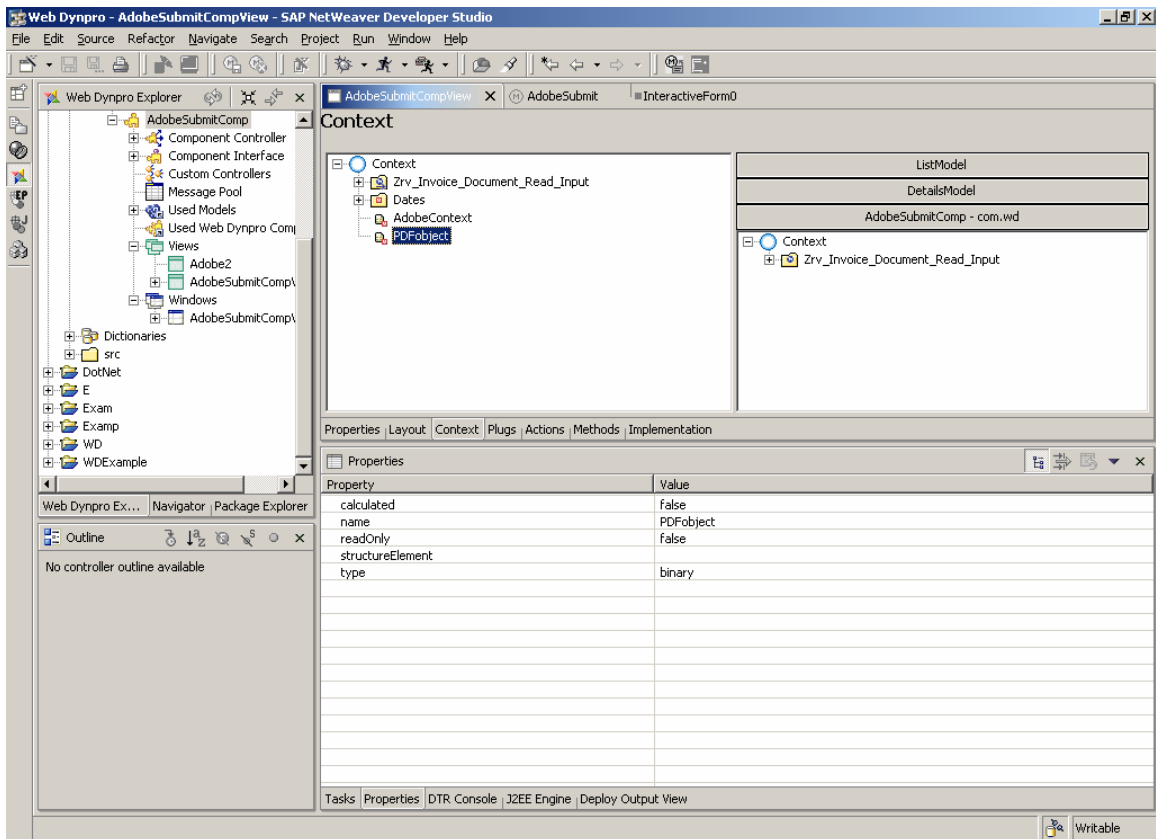
Listing of Invoice Details

The next primary step is to select a particular billing document from the above screen and display both the header and line item details in Interactive Forms. For this we have to first design the Adobe view using Adobe Designer. Adobe Designer is the design tool from SAP for designing the layout in Interactive Forms based on Adobe software. The various steps involved follow.

1. Here we are using a custom BAPI **Zrv_Invoice_Document_Read**. This BAPI has an input parameter Document Number (Vblen) and output parameters Xvbrk (table for Header Details) and Xvbrp (table for Item Details). Now create a model and do the necessary mapping of the input and output parameter of the model to the Component/Custom Controller and Component/Custom Controller to the View Controller.



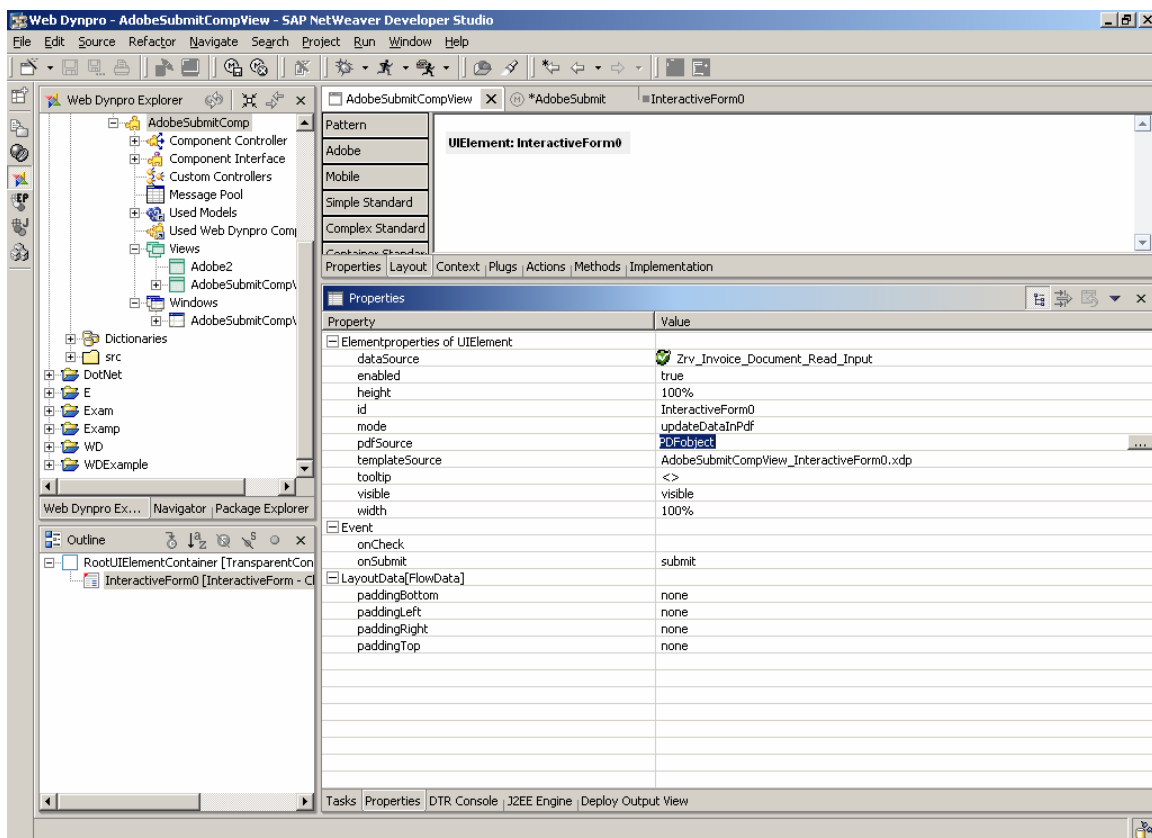
2. Create a View component with an Interactive Form child element. Create a Context Attribute PDF Object of type "binary."



3. In the View layout change the properties of the Interactive Form as:

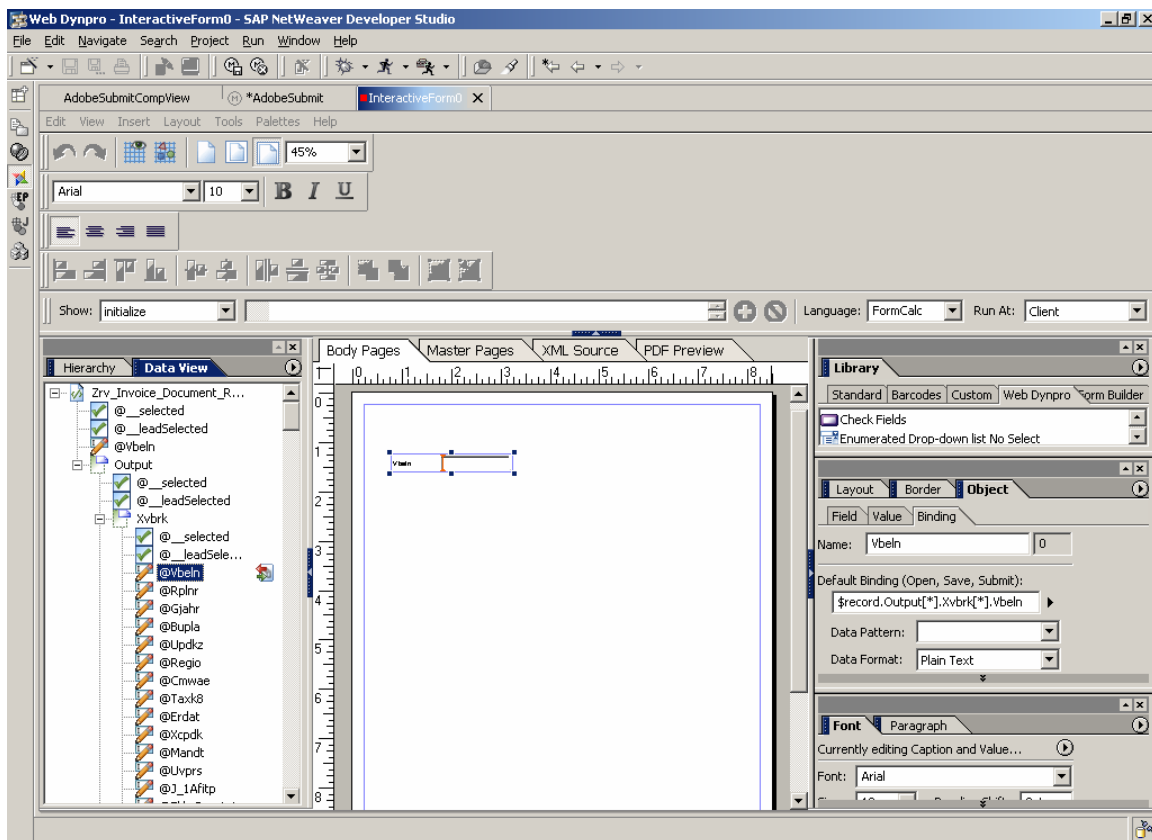
dataSource -> Zrv_Invoice_Document_Read_Input (Model Attribute)

pdfSource -> PDFObject (Context Attribute)

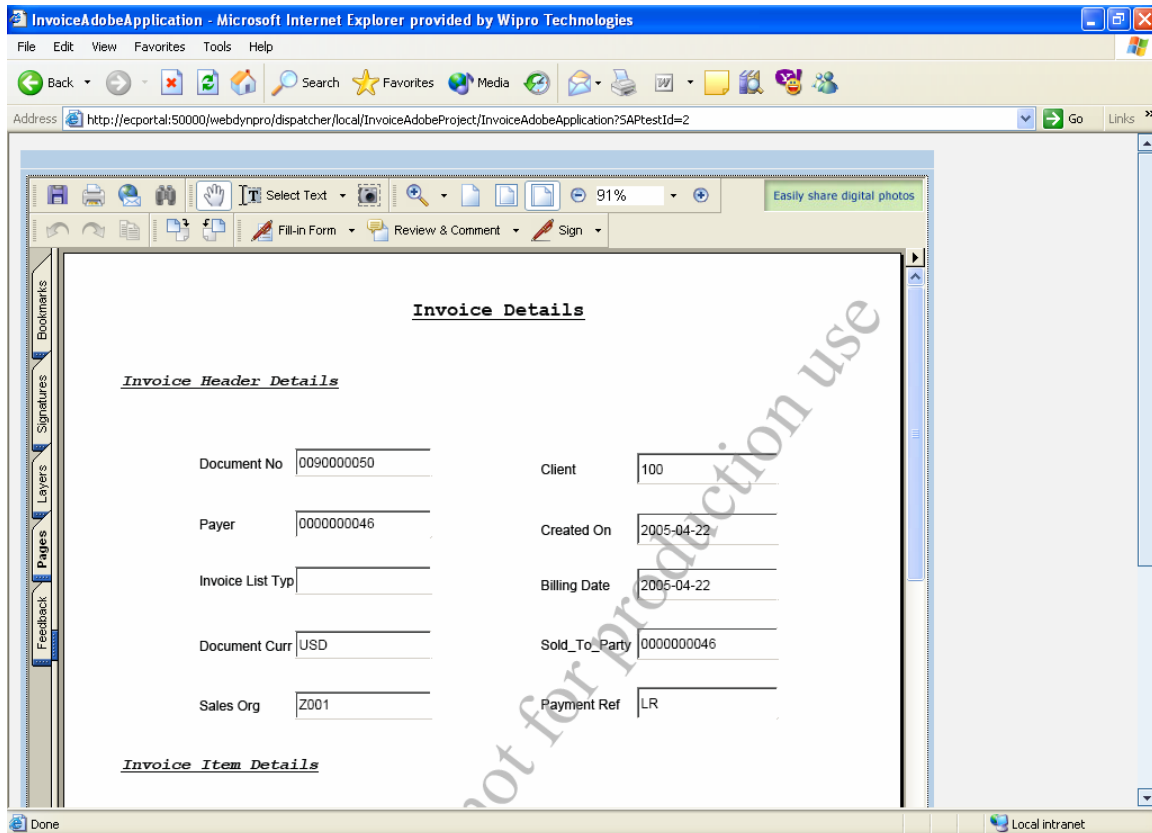


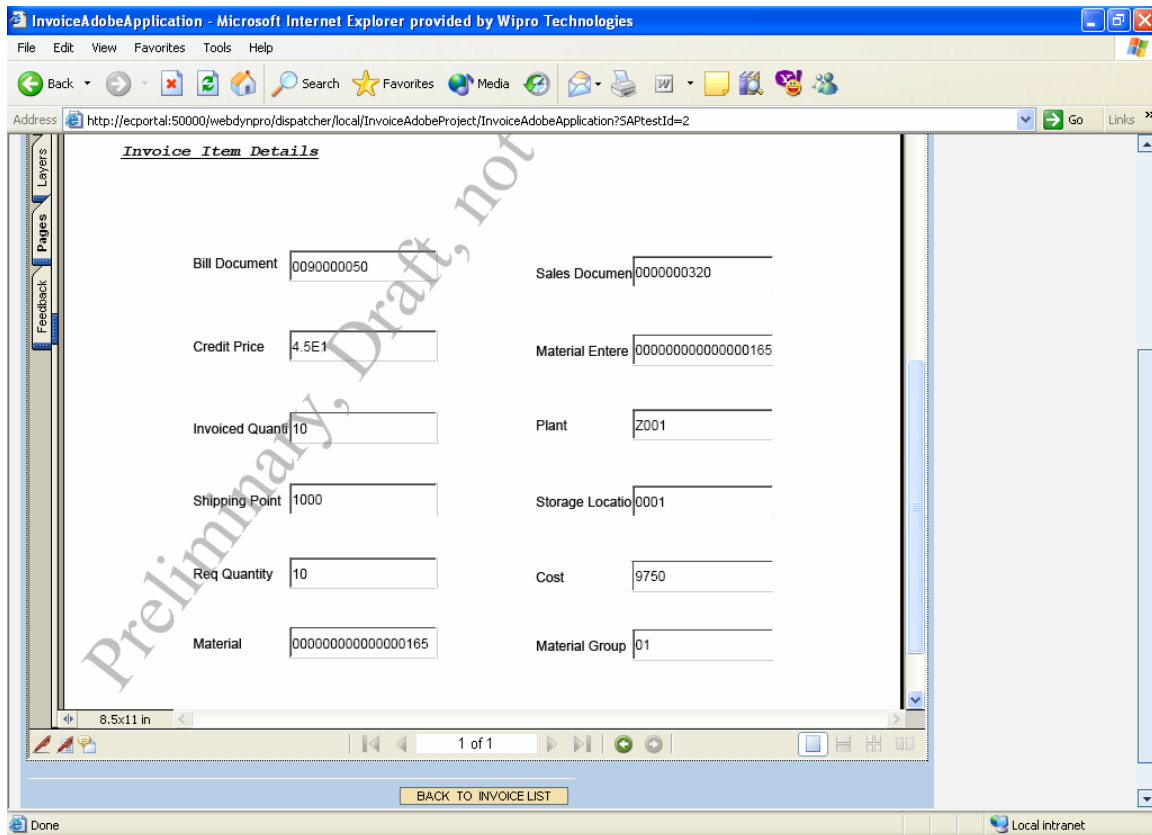
4. Right-click the Interactive Form child element and then click Edit. This opens Adobe Designer. In the data view of Adobe Designer you can find the Model Node **Zrv_Invoice_Document_Read_Input**, which has the input and output parameters. Decide on what header and line item fields to be present on the Interactive Form and drag the parameters on to your designer layout.

5. Here I have taken a sample layout which has 3 fields in a row, both for Header and Line items fields.



6. The output will resemble something like is:





Invoice Item Details

Bill Document	0090000050	Sales Document	0000000320
Credit Price	4.5E1	Material Entere	00000000000000165
Invoiced Quantit	10	Plant	Z001
Shipping Point	1000	Storage Locatio	0001
Req Quantity	10	Cost	9750
Material	00000000000000165	Material Group	01

BACK TO INVOICE LIST

Conclusion

The above exercise has shown how to effectively integrate Interactive Forms based on Adobe software with Web Dynpro.

Author Bio



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