Web Dynpro in Real Time

Based on SAP NetWeaver ’04

By Ranji Verghese and Kartik Iyengar
Wipro Technologies

Copyright

© Copyright 2004 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, and Informix are trademarks or registered trademarks of IBM Corporation in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies (“SAP Group”) for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

Introduction

Web Dynpro, the programming technology from the SAP stable, offers tremendous flexibility for User Interface (UI) design. The Web Dynpro framework, coupled with the Java Development Infrastructure, enables the design and development of powerful platform-independent meta-model-driven web applications. With applications designed in line with the Model-View-Controller (M-V-C) paradigm, Web Dynpro applications facilitate the clear separation of the UI design from the business/application logic.

There are a number of SDN weblogs and tutorials that introduce you to the concepts and methods of building Web Dynpro applications. In this article, I would like to point out the areas where one could use this powerful programming model. Knowing the technology is a definite step in the right direction. Here I present a scenario in which the power of this programming methodology is put to a test.

ORGA is a very successful organization in the retail front. Catering to a diverse consumer market, ORGA has many customers aligned with it, providing a collaborative business environment. ORGA runs its businesses on SAP R/3, the enterprise package responsible for a considerable increase in efficiency. This propelled ORGA to enter into untapped market areas and expand its global operations. Later, ORGA implemented the SAP Customer Relationship Management (CRM) solution to support its customer needs spanning various geographies. With emerging challenges, ORGA embraces the Enterprise Services Architecture (ESA) and implements SAP NetWeaver as a ramp-up customer. Thus, the IT landscape of ORGA is outlined as:

- Business Backbone - SAP R/3 Enterprise
- CRM - SAP CRM 4.0
- ESA - SAP NetWeaver ’04

As the SAP NetWeaver gains ground and trust throughout the IT world, the unique challenge of harnessing the power of the SAP NetWeaver suite is also key to the success of ORGA.

The Challenge

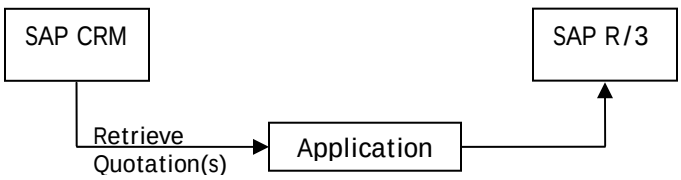
ORGA wants to streamline its process of creating sales orders. The company wishes to create all its sales orders from the quotations created in the SAP CRM system. From a business perspective, the required application should connect to the SAP CRM system, where it retrieves the details of the quotation based on the partner functions (sold-to-party/ship-to-party). The details of the quotations thus returned could be modified or retained; following this, sales orders for the quotations just processed must be created in the SAP R/3 system.

From a solution standpoint, we see a real opportunity to use the Web Dynpro programming model. The application would be developed as a portal-based Web Dynpro application, which would offer the user with the prospect of creating sales orders on-the-fly.

The Web Dynpro application would involve work on the SAP ABAP/4 and Java fronts.

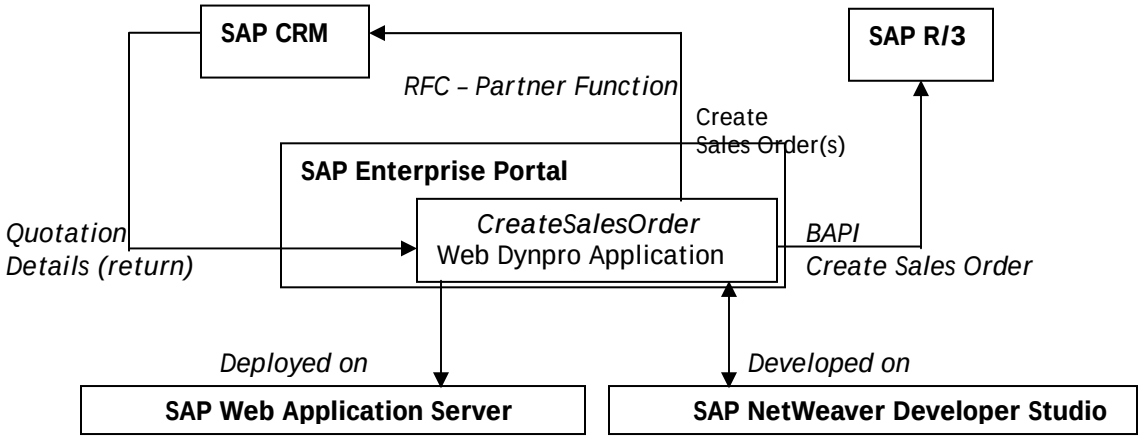
Requirements

Following a structured approach:



Design

The suggested design is as follows:



Solution

Prerequisites/Development Environment *

- SAP R/3 (Developer Rights)
- SAP CRM (Developer Rights)
- SAP NetWeaver Developer Studio
- SAP Web Application Server
- SAP Enterprise Portal

** At Wipro, our development environment for the scenario was: SAP R/3 4.6C, SAP CRM 3.1 SP 03, SAP EP 6.0 SP6, SAP NetWeaver Developer Studio 2.0.6, and SAP Web Application Server 6.40 SP6*

Development Process

This can be divided into two areas - ABAP and JAVA. On the ABAP side, the developmental work includes:

1. *Creation of RFC in the CRM System*

An RFC created to retrieve the quotations [Z_RFC_QUOTATIONS]. The *Import* parameters were the Partner Function and the *Return* was the list of quotations for the supplied Partner Function.

2. *BAPI – BAPI_SO_CREATE*

The details of the quotation(s) to be converted into sales orders are passed onto the standard BAPI. (One could write a wrapper BAPI to BAPI_SO_CREATE in order to pass only desired values to the sales order.)

At the JAVA end, the developmental process includes:

1. *JCO settings*

Two JCO settings are to be made. These setting are to be made at the Web Dynpro side.

- JCO for connection to SAP CRM, and
- JCO for connection to SAP R/3

2. *Web Dynpro Application*

- Create a new Web Dynpro Component for the new Project.
- Import the RFC for quotations [Z_RFC_QUOTATIONS] and the BAPI [BAPI_SO_CREATE] as *adaptive RFC models.*
- Design the UI to input the *Partner Function* and display the details of the *Quotation(s)* retrieved for the editing or modification (if required). Also create the navigation schema with the required user actions.
- Add the models as *Used Models.*
- Create the mapping from the *View Controller Context* to the *Controller Context* and to the *model.*

Process Flow

- Create an application for the project. Following this, create a Web Dynpro iView for the application that allows the application deployed over the SAP Web Application Server to be accessed from the SAP Enterprise Portal.

- The Web Dynpro application will connect to the SAP CRM system using the RFC [Z_RFC_QUOTATIONS] to retrieve the quotations for the Partner Functions supplied. The details of the same will be made available to the user in the *Quotations* View. The user can modify the quotation details on-the-fly (if necessary), or else directly from the application trigger the standard BAPI – BAPI_SO_CREATE to create the sales order for the quotation(s).

Conclusion

This *Quotation-to-Sales Order* scenario illustrates the power of creating efficient web applications using the Web Dynpro UI programming technology. There are numerous advantages to this approach, including:

- Effective use of the SAP Enterprise Portal as the single window/interface to access all enterprise applications.
- With user ID/roles mapped, the user can create a sales order on-the-fly without actually logging on to the respective system.
- Clear separation of the UI from application logic.

The Web Dynpro programming model has opened a whole world of opportunities to design and develop web applications with great ease and flexibility. With best wishes to explore and harness the power of the programming model and the entire SAP NetWeaver product suite, I say *ciao*.