

Protege Software Services, Inc.

Profile

Type: Consulting Services

Founded: 1993

Location: Woburn, MA.

Public/Private: Private

Size: 70 employees

Geography: North America

Expertise:

Oracle E-Business Suite
SOA
BI & DW

URL: www.protege.com

Protégé (SI) Solution extends Siebel with Oracle SOA Suite for Monster Order-to-Invoice process in recruiting solutions and career services vertical.

Monster.com is the number #1 global career website, operating in 36 countries. It is the 5th most visited web site worldwide with 10M visitors each week and 1 job seeker each millisecond.

Monster has a single implementation of Siebel CRM, providing Order Management functionality; and, has two implementations of Oracle Financials, one each for North America and Europe, providing customer invoice processing. Monster chose Oracle's SOA Suite as its integration middleware platform, including the management of the order-to-invoice process through the enterprise. Monster became one of earliest adopters of this new technology.

In a partnership with Protégé Software Services, Monster implemented an integration of Siebel Orders with Oracle Financials for European orders using the Oracle BPEL Process Manager, a component of the SOA Suite. The project utilized the Siebel adapter for inbound interactions, human workflow services for exception handling and process re-submission, XML transformations, cross-reference lookup utilities for data enrichment, and Oracle Advanced Queues for message enqueue and consumption. The integration resulted in the creation of 12 BPEL processes with over 200 unique activities. The processes are based on canonicals using a common schema repository. The solution was implemented from process design to production in 4 months and has been live since May 2007. The average activity consists of incoming order payloads of 120KB in size with throughput of 3,000 to 4,000 orders per day.

Technology

Stack:

Oracle Database 10g
BPEL Process Manager 10.1.3.1
Oracle Application Server 10.1.3.1

Intégration components:

Oracle BPEL PM 10.1.3.1
(Oracle SOA Suite)

Endpoints:

Oracle E-Business Suite 11.5.9
Siebel CRM 7.5

Deployment:

North America environment is Linux Red Hat Enterprise Edition. Europe environment is AIX. Both environments have the SOA suite in a 2 node clustered environment with BPEL servers in active-active configuration. Both environments have the Oracle 10g Database for dehydration store installed in a clustered environment.

Notification Channels:

Email via MS Exchange server

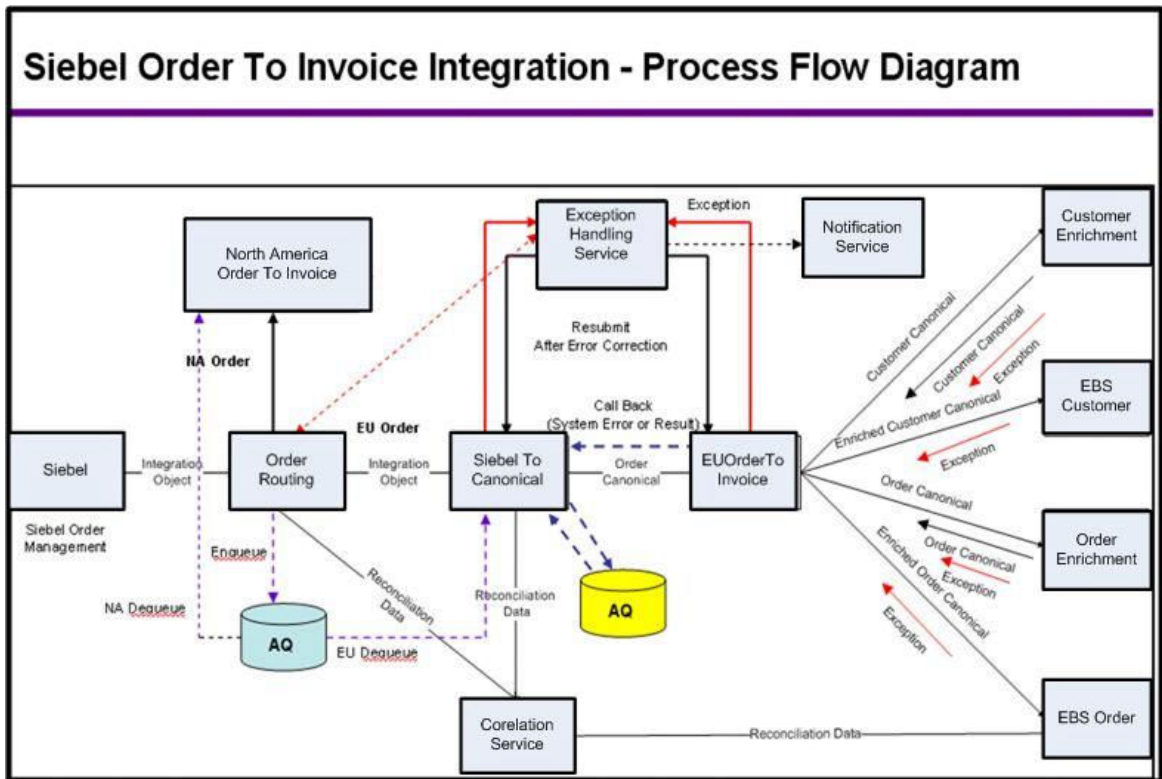
Solution Overview:

An order for Monster represents the acceptance of the quote and, therefore, a contract between the corporate customer and Monster. Orders contain relevant customer (address, contact, profile) and order data (products, prices, discounts, contract durations and General Ledger accounts). The main business requirement was to integrate Siebel Orders and Oracle Financials for Europe, incorporating order validation and data transformation into the process. The order data is received from Siebel into the integration middleware, routed to the European BPEL Processes, augmented with customer data, and then updated into the Oracle Financials. Data errors and exception conditions are managed by human workflow steps in the processing flow. Orders are reconciled between Siebel (source) and Oracle Financials (target) to ensure that no orders are lost.

Solution Details:

This solution facilitates the near real time integration of invoices and customers from Siebel to the European Oracle Financials instance through the Oracle SOA Suite in an extensible manner. In the process flow diagram, the BPEL OrderRouting process receives an order integration object from Siebel. A Siebel adapter is used to integrate with the

Siebel application as it is an older Siebel version which does not support web services. The Siebel adapter channel is configured to listen using http on a port where the Siebel integration object is posted and then delivered to the BPEL engine in a JCA inbound interaction pattern. Using content based routing, the order is routed to either the North America BPEL (resident on an North America-based SOA Suite installation) or Europe BPEL (resident on a European-based SOA Suite installation) process. This solution brief describes the flow for European orders that are routed to the European SiebelToCanonical process.



After transforming the Siebel order payload to separate customer and order canonicals, the EUOrderToInvoice BPEL process is invoked. The EUOrderToInvoice process uses a series of pick activities and 'onMessage' handlers to process callback 'onResult' or 'on Error' messages from Customer Enrichment, EBSCustomer, OrderEnrichment and EBSOrder BPEL processes. It uses enrichment processes for data transformation and validation using a database adapter-based cross reference utility. For example, Oracle E-Business Suite payment terms are cross referenced from the incoming Siebel order payment terms using a DB adapter lookup. After the successful validation and enrichment, the EUOrderToInvoice process invokes EBSCustomer and EBSOrder processes to insert data into the customer and invoice staging tables via database adapters.

Any data or payload related errors are routed to Exception Handling processes that take order and exception canonicals as input payloads. The Exception Handling processes use BPEL human workflow task services for human intervention and exception notification by e-mail. Oracle's human workflow services and out-of-box worklist application are leveraged to provide a user interface to failed orders. The user interface provides functionality to modify data and acknowledge / resubmit orders. The user interface is customized to present the payload to the user as a set of form field elements. The users and roles are defined in the JAZN repository of Oracle Application server. Notifications and reminders on unattended tasks are sent out via email.

The solution makes use of Oracle Advanced Queues at various integration points manage resiliency of the process in the event that the European SOA environment or the European E-Business Suite (EBS) environment is down due

to a failure or for maintenance. It enqueues messages in the North America SOA middleware platform until the messages are dequeued or consumed by turning on the BPEL dequeue process from the BPEL console when the environment is ready to process the orders. The correlation service is a process to reconcile order data across the BPEL processes to ensure that there is no loss of orders due to BPEL errors such as transaction timeouts, remote faults, failure to recover messages from delivery or callback queues etc.

In summary, all possible exception conditions, and the architecture to ensure resiliency, are as follows:

Siebel Adapter – Failures in the Siebel Adapter would result in an exception back to Siebel. Any orders that fail in the adapter will need to be resubmitted from Siebel.

Order Routing failures (BPEL) – OrderRouting failures will post to the Exception Handler in the event of xml payload error, and to Oracle AQ in case of either SOA environment being unavailable.

BPEL process failures – any failure in a BPEL process will post to the Order Exception Handler that provides a tie to a user interface for managing the exception and notification services. In the event that there is a problem reaching the Order Exception Handler, messages will be queued up in AQ.

EBS Oracle Financial System Stored Procedure Interfaces:

If the call to the Oracle Financial System stored procedures fail, the message will be queued in the AQ until the Oracle Financial System is available to accept the message. Errors that occur during stored procedure execution, that are not thrown back to the calling process, are handled by the Oracle Financial System.

At Protégé, we are focused on providing high quality solutions to organizations utilizing the Oracle E-Business Suite, Oracle Fusion Middleware, and Oracle Database technologies. At Monster we implemented a flexible, resilient, scalable architecture using the Oracle SOA Suite that integrates Siebel, Oracle Applications and human workflow processes with an average throughput of over 3000 orders per day.

Mike Ivers, President, Protégé Software Services, Inc.

Monster's dynamic environment requires a smooth flow of data and business processes across the enterprise. The architecture of these processes must be resilient to an infrastructure failure, agile to change, and scalable for growth. Protégé is our exclusive business partner for integration solutions. They understand these business requirements, and architect and implement solutions that satisfy those requirements. They bring to the table a deep functional knowledge of Siebel and Oracle E-Business Suite, together with equally deep technical knowledge and experience in middleware technologies.

Joan Lawson, Senior Director – Information Architecture, Monster Worldwide