CASE STUDY

Development of tool for Calculating Right Re-stocking Quantities at Distribution Centers

Abstract

Our customer one of the largest CPG Manufacturing companies was using Excel macros to determine the quantities of goods to be shuttled between the distribution centers at one of their manufacturing plants in Europe. This manufacturing plant had 3 distribution centers, one of which was fully operated by the company and the other two were operated partly by a third-party enterprise.

The existing process for managing the shuttling and loading quantities was manual and prone to errors in the stock availability count and shuttling reports. There was a pertinent requirement for a system to automate the process and integrate with SAP. Vertex followed a three phase delivery approach including Discovery, Development and Rollout to develop a .NET based web application with MS SQL Database.

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Business Challenge

Excel Macros was used to determine the quantities of goods to be shuttled between the distribution centers at the manufacturing plant. The SAP system generates the shuttling reports used for calculating the re-stocking quantities for each of the distribution centers.

The existing system had few gaps in the re-stocking calculation logic including such critical ones as – Boxes designated for destruction were also being counted as stock available.

Vertex Solution

Vertex built an ASP.NET based web application with an MS SQL Database. The application is integrated with Windows Active Directory for authenticating the users. It was integrated with SAP through Web Services to extract and upload data. DevExpress controls was used for achieving rich look and feel of the application. The solution addressed several challenges and provided automation of the process, calculation of restocking and optimal truckload, and easy accessibility of information to all relevant user groups.

Technologies Used

- ✓ **ASP.NET4.0**
- ✓ **Dev Express Controls 13.2,**
- ✓ **SQL Server2008 R2,**
- ✓ **IIS 7.0**
- ✓ **ISARA Web Services**
- ✓ **SAP**

Solution Highlights
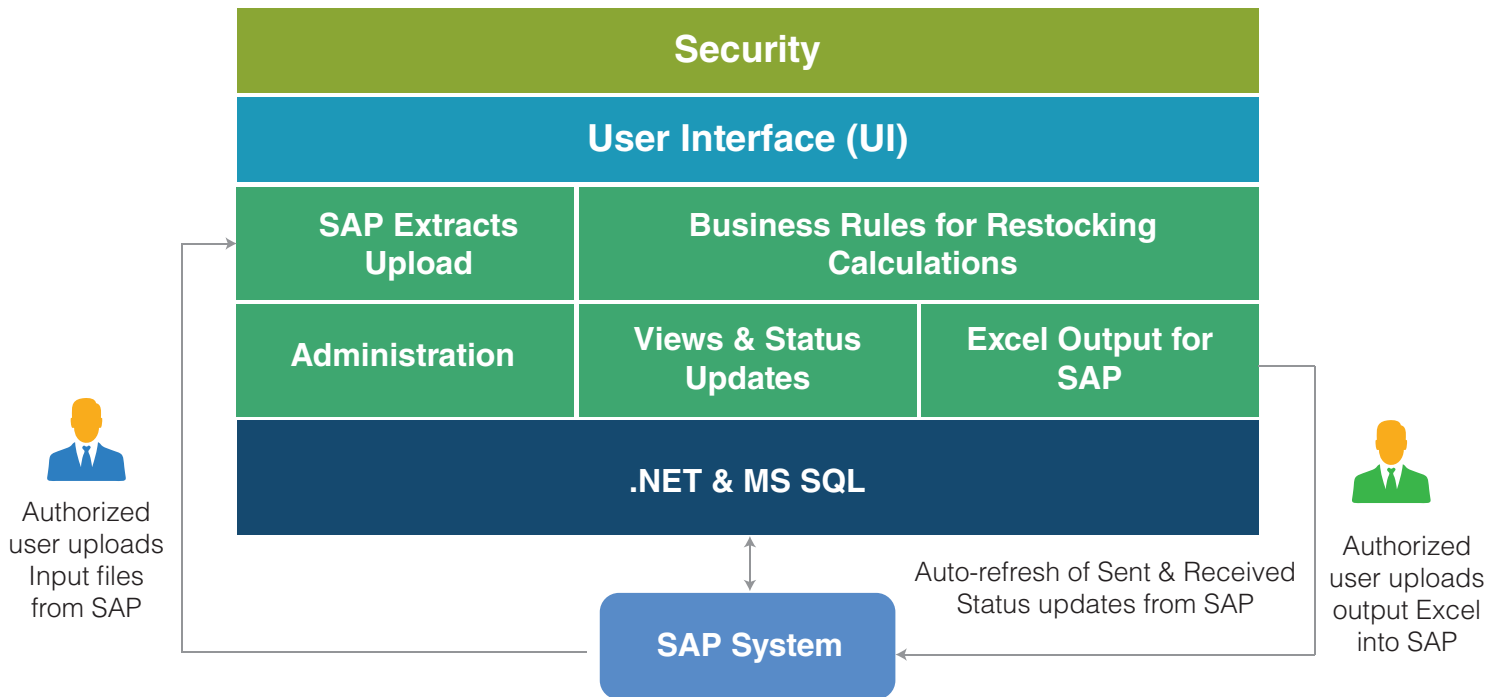
Key aspects of the solution are as below:

- ● **SAP Data Extracts & Upload** – Allow authorized users to upload input files from SAP. On completion of restocking and truck load calculation, an excel file can be extracted.

Process Automation –

- ✓ Processing and manipulation of data files to arrive at Correct demand and Correct stock
- ✓ Calculation of restocking for each product for the distribution centers
- ✓ Determine the optimal truckload for goods shuttling between the distribution centers
- ✓ Generate an Excel containing all product codes and the quantity of pallets that will charge each truck

- ● **User Roles** - Based on the user's role, the system displays the data related to specific part/stage of the process
- ● **History** – The application stores the input files from SAP for past 1 week for reference. The restocking output is also stored to generate relevant reports based on the requirement.
- ● **Security** - The application is integrated with Windows Active Directory for authenticating the users. The system uses the user groups from GroupGenie. The roles to these groups are mapped within the system. Once users are successfully authenticated, the system will grant them appropriate access rights based on their security groups defined in the system.

BUILDING BLOCKS OF OUR SOLUTION

Security

User Interface (UI)

SAP Extracts Upload	Business Rules for Restocking Calculations	
Administration	Views & Status Updates	Excel Output for SAP

.NET & MS SQL

SAP System

Authorized user uploads Input files from SAP

Auto-refresh of Sent & Received Status updates from SAP

Authorized user uploads output Excel into SAP

BUSINESS VALUE

- Automated process for calculation of Re-Stocking levels
- Pallet planning for cost-effective truck loads.
- Better decision making and control on operational costs.
- Executive dashboards charting status of distribution.
- Integration with SAP for inventory management data.
- Time and effort savings due to automated calculations

About Us

Vertex is a CMMi Level-3 IT consulting organization that engages with its customers at a strategic level and provides 'thought leadership'. Vertex's team of Solution Scientists craft innovative solutions, with a holistic view, that make businesses smarter. Vertex acts as an advisory partner, aligning its offerings with the business goals and objectives of its customers.

For more information, reach us at info@vertexcs.com

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