

Case Study: Providing Custom Solutions And Enterprise Integration For On Demand Software Systems

ABSTRACT: Edgewater Networks, a mid-sized supplier of VoIP products, was committed to outsourcing their CRM and Inventory Management systems, but also needed to extensively customize this software to meet their unique internal requirements. By combining the hosted CRM capabilities of salesforce.com and choosing DreamFactory Software's SBuilder product for on-site integration and customization, Edgewater was able to create a cost-effective solution that provided an excellent return on investment and streamlined their business process.

The Problem

On Demand software products from companies like IBM, Salesforce.com, and Grand Central Communications provide a new technical and economic model for the delivery of "software as a service" to the end user. The advantage of this strategy is that companies can rent software as needed without the need to install complex software packages and manage expensive dedicated servers. The hosted service can be securely accessed from any web browser anywhere in the world. The On Demand model takes advantage of the significant economic benefits that arise from greater specialization and more efficient division of labor across the Internet.

But these advantages also pose unique challenges: since most On Demand services are accessed through a web browser, these systems can be difficult to integrate with other software applications behind the corporate firewall or on the client desktop. On Demand software is often delivered through HTML page downloads from a remote server, and this can place limits on the desired user experience and application functionality. These systems can usually be modified to some extent, but some business problems require the need for more sophisticated customization. The installation of an on-site server could provide additional capabilities, but this strategy dilutes the original benefits of the On Demand software model, especially for the small or mid-sized business that wants to avoid building and maintaining network infrastructure.

Edgewater Networks produces and sells Voice Over IP (VoIP) networking and security hardware. They appreciate the advantages of the On Demand model, and adopted the hosted solution provided by salesforce.com for their Customer Relationship Management (CRM) system. But as their company expanded, they discovered additional requirements related to Inventory Management and Enterprise Resource Planning (ERP) that needed to be addressed. Some vital information was sent in email, some was part of a legacy database, and some was copied and/or carried by hand. Accurate tracking of inventory parts, license keys, barcodes, MAC addresses, shipping destinations, prior purchases, and customer invoices was a necessity. Ideally, this information should be combined with the CRM data already available to all employees through the salesforce.com interface.

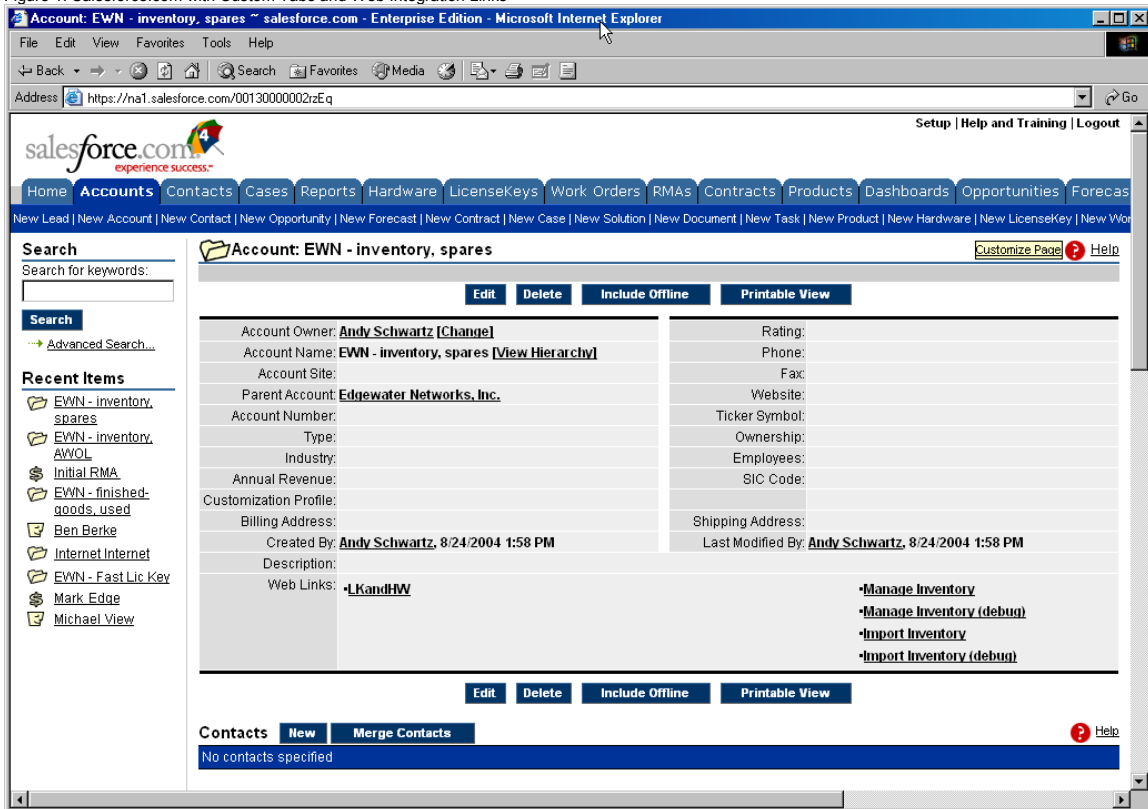
The Implementation

Edgewater Networks decided that the best course of action was to extend the existing capabilities of salesforce.com to address their Inventory Management and ERP needs. As with many early stage and rapidly growing companies, there was neither a large budget nor a lot of time available to implement a solution. Edgewater used salesforce.com Custom Objects to create the additional schemas required for the project. Custom Tabs were used to display these records.

The SBuilder “rich client” application from DreamFactory Software was selected to provide the required integration points with their existing applications, and also with salesforce.com’s web services interface. The SBuilder client is a browser-based front end for On Demand systems, allowing integration with web services directly from the client, thereby eliminating the need for installation of server hardware or software.

The screenshot below shows salesforce.com running in the browser. The Custom Tabs are visible at top, towards the bottom of the screen are various “web links” that launch the DreamFactory rich client application, either embedded in the salesforce.com CRM interface or in a separate window. Information can be passed from salesforce to DreamFactory through URL parameters.

Figure 1: Salesforce.com with Custom Tabs and Web Integration Links



Creating Custom Objects

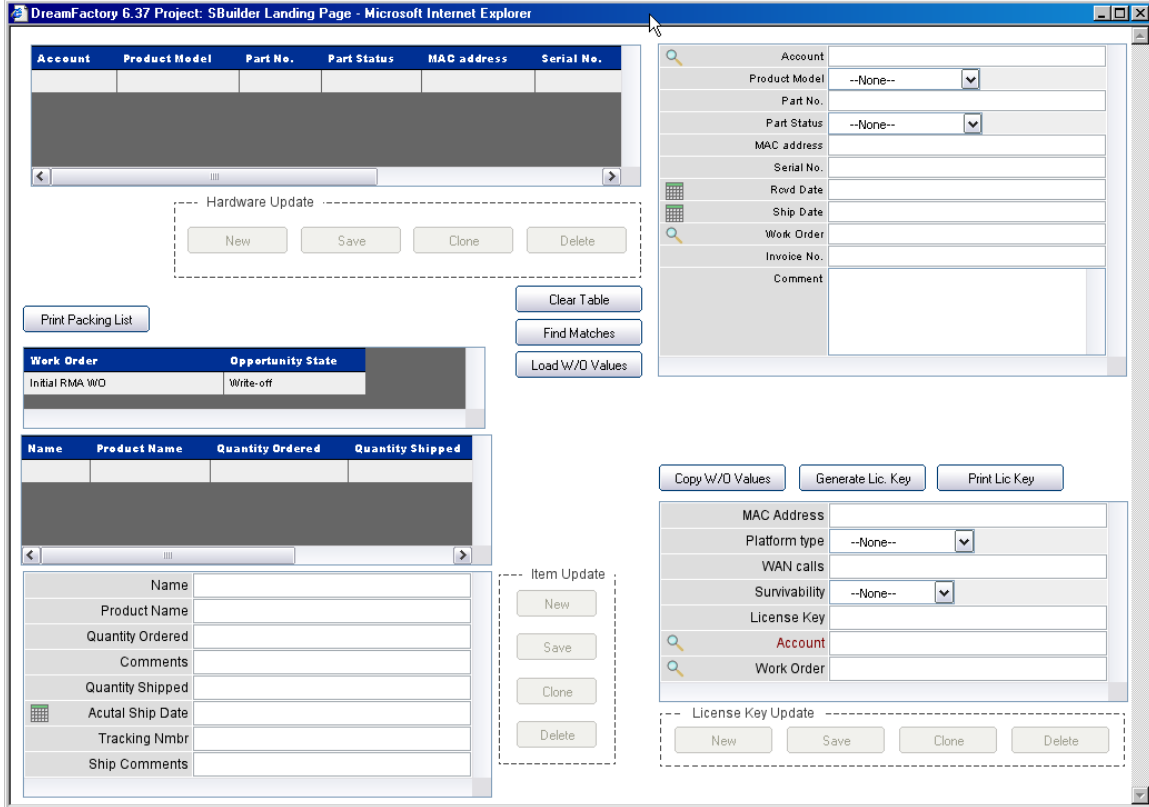
Salesforce.com provides the ability to extend their standard data structures (Account, Contact, Opportunity, etc.) with custom objects. Edgewater added the various entities needed to implement their new system: HardwareKeys, InventoryItems, WorkOrders, LicenseKeys, RMAs, etc. These objects are displayed in the salesforce user interface through the use of Custom Tabs with summary and detail tables. These objects can be linked to other salesforce.com entities like Accounts and Opportunities and displayed in a related list.

Generating Work Orders

The sales process starts by adding hardware items that a customer wants to purchase to the Opportunity screen. Then the sales person clicks a Web Integration link, and in the background a DreamFactory project generates a complex WorkOrder entity that contains all the product and shipment information including tracking numbers and the billing and shipping address. Salesforce.com automatically sends this information to manufacturing. Previously this communication was accomplished with email messages.

The Edgewater Manufacturing group uses a DreamFactory application to match the requested items in the Work Order to available inventory. The system is capable of handling complex multi-item orders, all the data is persisted as salesforce.com entities. Blocks of hardware purchases are assigned to the proper salesforce.com Account entity. This application is pictured below.

Figure 2: DreamFactory's SBuilder Rich Client Matches Inventory To Work Orders



The top of the screen displays the current inventory of Hardware items. The WorkOrder entity is displayed at lower left. Also note the buttons for generating a license key, printing packing lists, and saving the final work order. These items are discussed in more detail, below.

Scanning Inventory Barcodes

Edgewater scans all incoming inventory with a barcode scanner, and the scanner produces an Excel spreadsheet file with XML barcode data. Then this data is read into a DreamFactory application that automatically creates Custom Objects for each inventory item by calling salesforce.com's web services API. This data is used in the application above to describe available inventory. Since this data is now part of the salesforce.com database, senior management can track inventory levels and cost.

Generating License Keys

Edgewater needs to generate a license key for some of their hardware products. A UNIX computer generates these codes, and previously employees would have to visit this machine and copy key values by hand. Now a DreamFactory application calls the UNIX computer on the network and automatically copies the key into a salesforce.com HardwareKey data record. This new procedure saves time and prevents transcription errors. Each license key is then permanently linked to the customer Account.

Printing Packing Lists

The same DreamFactory application also has a button to print packing slips with all of the information needed for shipment. Since the packing slip is machine generated, errors are reduced, and a permanent record is generated. At the end of the order process, an email is automatically sent to Accounting to record the hardware items that were sold and trigger an invoice for the customer.

Delivering Customer Service

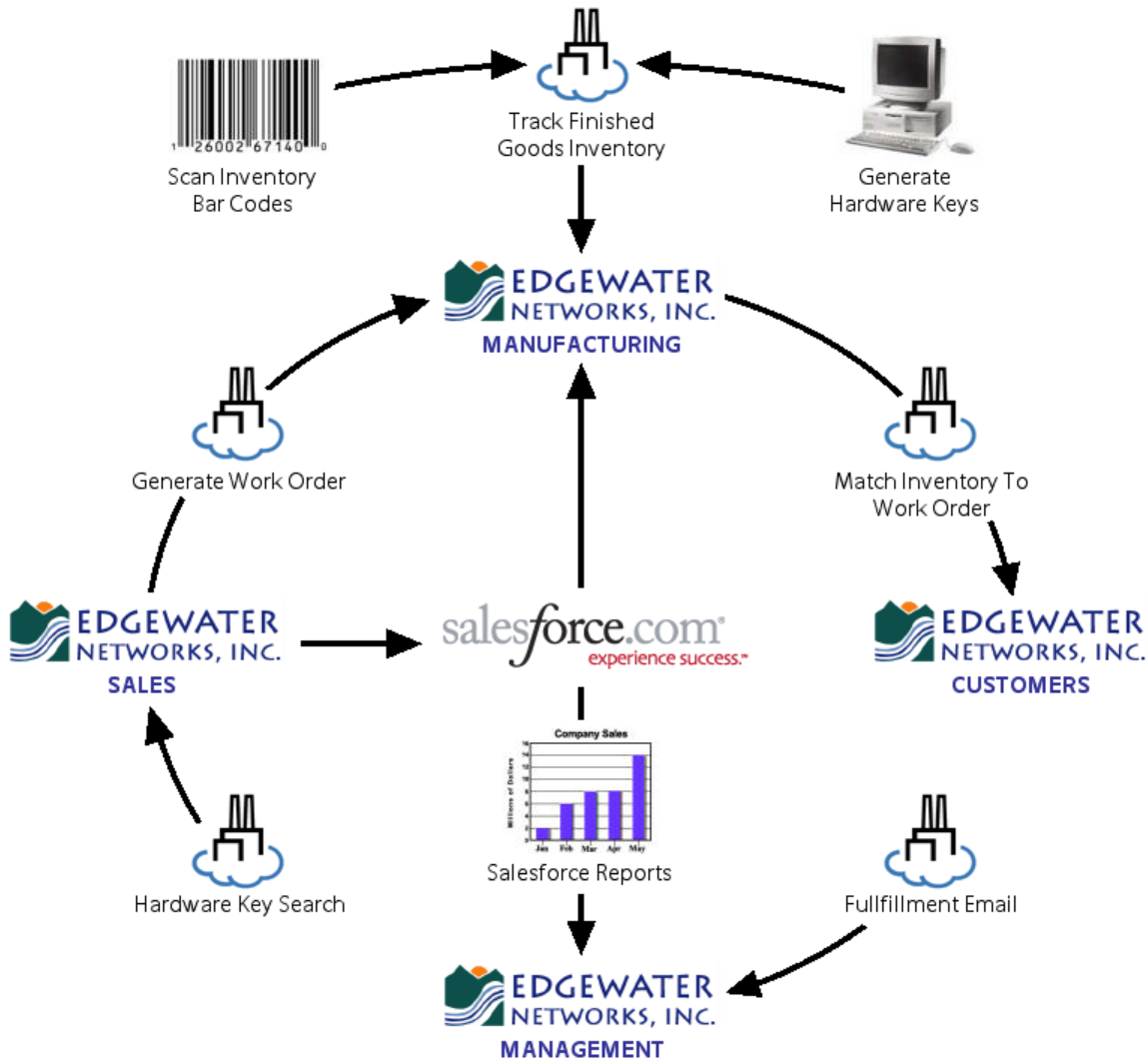
Now, because all this data is in the system, Edgewater salespeople have a record of all the hardware sold to individual customers, and they can look up hardware serial numbers right from the salesforce.com interface.

This enhances their 360-degree view of the customer, because some of the hardware keys also determine available features. Current orders, pending shipments, return authorizations, and technical problems are all linked to the Account entity in the salesforce.com HTML interface.

The Results

Edgewater Network's lead developer Andy Schwartz comments about the project: "Our initial goal was the ability to track product shipments to customers, but by using a combination of DreamFactory plus salesforce.com Custom Objects and Tabs we have been able to implement hardware tracking from manufacture through sale. Our company use of Salesforce.com now goes from Inventory Management through Order Fulfillment." The diagram below illustrates an architectural overview of the Edgewater Networks CRM, Inventory Management and Order Fulfillment System.

Figure 3: Architectural Overview of the Edgewater Networks CRM and Inventory Management System



An added benefit of the project is that, since it was developed in-house, Edgewater is able to quickly change, modify, or fix the implementation as conditions dictate. Andy continues: "These applications have been extremely well received by Edgewater's management team. They leverage the abilities of the Salesforce hosted model to support more of our overall business processes. This has only been possible because of the ease and speed with which we can create and manipulate custom objects using the DreamFactory rich client."



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