

## Retail and B-2-B e-Commerce System

*Extensive Multi-Manufacturer On-Line Catalog*

### BUSINESS NEED

An established, regional distributor of electric motors, components and repair services decided to expand their market coverage and provide enhanced customer service through the creation and management of an on-line e-commerce site. The product lines represented by the company were quite extensive, and most items available on the site needed detailed technical specifications and/or drawings so the customer could make the proper buying decision.

The site needed to serve two distinct groups of customers; retail customers who occasionally purchased products and business customers who bought more frequently and/or in larger volumes. Other important characteristics included the ability to search for a product in multiple ways, on-line inventory by warehouse location, and purchase by credit card or company charge.

### PRIMARY FUNCTIONALITY

The web site design was based on a commercially available e-commerce software package customized to meet the client's business needs. A commercial package was desirable to minimize development time and enhance supportability. The selection of this package was driven by the nature of the products to be sold. Electric motors and accessories have detailed technical specifications that are vital to the customer's buying decision. Special product attributes, not normally supported in commercial e-commerce software, needed to be linked into the product catalogs, and accessible through special search functionality.

A flexible directory of site users was implemented. The directory stores user information entered during the self-registration process plus data added by back-office personnel, such as market information and contract terms. User information drives functional, product and promotional content displayed during user visits. It also provides the structure for user management of orders, targeted (opt-in) e-mail marketing and other site activities.

Locating products on the site can be accomplished through use of a common e-commerce site navigation scheme. However, due to the nature and variety of the products, several special search functions were implemented to make product location significantly easier.

Concepts like "search by name plate data", "cross-reference tables" and "product use by application" were developed that aided the customer with selecting the correct product variant.

Payment and product pricing options were integrated into the site to support varying types of customers. Real-time credit card processing was setup through CyberCash® (now PayFlow Pro<sup>SM</sup> by Verisign, Inc.). Customers could also be pre-approved to charge to a company account. Attributes in the user directory controlled company charge authorizations, account number, credit limits, order limits, and credit hold. Product prices were also controlled by attributes in the user directory, allowing certain customers to receive client-specific and product-specific discounts if approved by the business managers. This scenario was important for attracting volume buyers.



## **WORKFLOW AND COMMERCE SITE MANAGEMENT**

The order processing workflow is managed through a second web site exposed only on the company intranet. When an order is placed, the order logic includes transmission of e-Mail notifications. e-Mail is directed at the customer (order confirmation) and to pre-defined employees responsible for following up each order. The management web site allows the employees to review the order and alter it if necessary. Another e-Mail is sent to the customer when the order is shipped, and includes tracking information. Customers have the ability to re-visit the e-commerce site at any time and view their order history.

A key management requirement is the ability to observe site usage and activity. The selected e-commerce package included capabilities for capturing site activity and producing custom reports. These reports are part of normal site management review, showing specific activity as well as trends.

## **INTEGRATING BACK-OFFICE SYSTEMS**

Locating the web and database servers at the corporate office allowed the necessary integration with the back-office system. The network design, and the installation of a firewall, ensured proper security. Queries were developed to extract and display product inventory status. Authorized users are able to view the inventory status by warehouse location. Another key feature was added recently to allow client partners to review motor repair status information by extracting data from the back-office system.

## **EXTENDING SITE CAPABILITIES**

The client cultivated various business relationships with several B2B exchange sites. As part of the business arrangement, the products available on the primary e-commerce site were made available to the B2B site through the use of XML technology following the Commerce XML (cXML) standard. Customers on the B2B exchange could browse and buy product from our client without leaving the exchange. This capability provided significant opportunities to extend market coverage.

## **CHARTWELL I/T ROLE**

Chartwell I/T was the technical lead on the project from the beginning, and continues to support and enhance the systems. Chartwell I/T filled the project management, system and software architect, and software developer roles. Chartwell I/T also coordinated the loading of catalog content and provided search engine positioning services.

The e-Commerce site was only one aspect of the overall project. The other aspects of the project included the deployment of a LAN at the corporate site (including T1 Internet access), rollout an e-Mail server (MS-Exchange) and deployment of a CRM system. Chartwell I/T's project management duties covered these aspects of the project, including costing of components and services, and managing the selected vendors during implementation.

Besides Chartwell I/T's participation, the initial project team consisted of client resources to fill the roles of system manager, and marketing, business and subject matter experts. Following the rollout and initial enhancement period, the client added a web development resource to assist in the on-going enhancement and support tasks.

## **TECHNOLOGY**

The system uses Microsoft® Site Server 3.0, Commerce Edition™ (SSCE). SSCE is a middleware product that provides the core functionality for customer management, catalog structure, order handling and site usage analysis. SSCE runs on top of Windows NT® running IIS 4.0. Profiles and other controlling parameters are stored in the SSCE Membership Directory, an LDAP-compliant data store. SSL encryption technology is also implemented.

Microsoft® SQL Server Database Management System is the primary database for the site.

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