Exsys Case Study

Sensor Product Selection Assistant for Static Inventory

Applied Controls Inc.

The problem the system was built to handle:

Over time, distributors of industrial controls typically build up static inventories of saleable products due to cancelled orders, initial stocking requirements, and sales force speculation. When customers call in for assistance with component selection, many times it is easier for the sales force to recommend and order new product from the manufacturer to fulfill the customer's needs rather than take the time to evaluate the inventory for a solution.

This causes several problems:

- The customer is kept waiting while the solution is being researched
- Shipment is delayed by order fulfillment from the manufacturer
- The static inventory with its associated carrying costs continues to grow
- The sales person may not have the experience to ask all of the appropriate questions when assisting the customer with a solution

An expert system application was required that could capture the customer's requirements in a consistent manner and compare them against the specifications of inventory on hand. It needed to be easy to use, and recommend any products on hand that could satisfy the customer's application properly even if an exact match was not found.

Proposed Sales Support/Static Inventory Utilization Solution

The proposed solution entailed building an intelligent questionnaire type of expert system that would be used to acquire the customer's requirements by a sales agent during a telephone interview. Answers to the questions would be compared to the specifications of products in inventory to look for a possible match before researching and placing orders for new product from the factory.

Proximity sensors were chosen for the initial project because they have well defined attributes like sensing range, voltage, polarity, and mechanical configuration that could easily be searched using the customer's application criteria. Exsys software was used to build an intelligent questionnaire and search a data table of proximity sensors in inventory.

System Recommendations

Proximity sensors in static inventory with the best match to the customer's requirements are presented along with a detailed description, quantity on hand and current price on the sales person's computer screen. The sales person then describes the available sensors and the customer decides if they will accept product from inventory with some possible trade offs, or request product be ordered from the factory.

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How it Works with External Programs

The proximity sensor data table in the Exsys system is kept up to date by periodic synchronization with the company's main data processing and inventory control program through a small application written by the IT manager. Part number, quantity, price and a basic description is already entered in the system.

The batch application joins the current inventory data with a spreadsheet containing the associated technical specifications for each sensor part number. When new sensors are placed in inventory, a sales person simply enters the necessary technical specifications for the new part number into the data table. Synchronization of quantity and price is automatically updated by the batch application thereafter.

How the System is Deployed and Accessed

In a browser window on each sales person's PC screen, the application is deployed as a Java applet in a web page, and runs client-side via the Exsys Java applet runtime. It is accessed whenever they want to determine if items in the proximity sensor inventory might be applicable for customer orders. After answering about 13 questions related to proximity sensor selection criteria, the system takes about 10 seconds to analyze several hundred items in the data table, and then lists them in descending order of best fit along with a relative score.

Measurable savings/increase in profit

The main benefit of the system is improved customer service and more efficient use of sales staff time. What used to require several minutes on hold or a returned phone call after researching a possible solution, was reduced to less than 60 seconds including running the systems and getting recommendations.

The new system improved shipment from available static stock and was responsible for the sale of several thousands of dollars of sensors that would have typically been overlooked by a sales person.

Even employees with less technical training can field a customer inquiry using the questions built into the system, effectively increasing the number of available sales people.

How long did it take to build?

The prototype system took just under 40 hours to develop and test, including researching the best selection criteria using several competing proximity sensor vendor catalogs. Once the IT manager understood how easy Selector was to use, he took over the project, refined the question screens, the search criteria scoring and completed the data table update application in approximately 40 hours.

Company information

Applied Controls is a full service, full line distributor and Automation Technology Center providing premier factory automation products from today's leading manufacturers. Servicing Pennsylvania, New Jersey, Delaware, Maryland and the Mid-Atlantic Region for over 30 years, the company has always differentiated itself by helping its customers select and apply the latest technology to achieve the best return on their automation investments.