Chapter XII

Introducing Expert Systems at The Corporation*

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EXECUTIVE SUMMARY

This case study highlights the concept that the “management” of the technology is usually the limiting factor causing the demise of a project rather than the “technology” itself. This real case study involves creating an awareness of a new technology within the company (hereafter named “The Corporation”) and trying to start a (much needed) project using this technology. The technology in question here is “expert systems.” An expert system is a computer program that emulates the behavior of an expert in a well-defined domain of knowledge. At The Corporation, a few key top management executives thought that an expert system could be used to help The Corporation in configuring its minicomputer systems. The Corporation enlisted the help of a consultant to develop a feasibility study of using expert systems for configuration management at The Corporation. In doing so, an awareness of expert systems technology was created throughout the company in almost all divisions — customer service, sales, marketing, finance, information systems, manufacturing, etc. The hidden agenda of the consultant was to start an expert systems project for configuration management at The Corporation, if the feasibility study deemed it worthwhile. The case study describes many of the hurdles that had to be jumped, and shows the importance of understanding the corporate culture of the organization, especially in the difficult times of mergers and acquisitions, economic downturns, and tough competition. Let’s now see how the case unfolds.
BACKGROUND ON THE HISTORY OF THE ORGANIZATION

The Corporation (a pseudonym) is a manufacturer of minicomputer systems who acquired a larger company in the same line of business. The Corporation manufactures a variety of computer families for use in real time simulation, software development, computer architecture research, and a host of other applications. The Corporation, a $280 million company, has about 900 employees at its corporate headquarters and about 200 employees at its manufacturing plant.

Over recent years, downsizing and outsourcing have been dominant strategies used in The Corporation. A sense of uneasiness plagued many of the employees as they were unsure of whether their jobs were protected, as many of their colleagues were receiving pink slips. Those whose jobs were valued remained, but were troubled with large workloads due to the reduction in force.

A critical component of The Corporation’s operations is configuration management. Configuration management, or more appropriately configuration control, refers to configuring the hardware (and software) correctly for a customer’s order. The Corporation wanted to improve the number of times it took to correctly configure an order. About 90% of the computer configurations were done incorrectly the first time, and it would normally take about 12 times to correctly configure the order. The vice president of development (who was quickly let go after the acquisition) and the vice president/general manager of manufacturing and customer service wanted to explore the feasibility of developing a Configurator using expert systems technology. The Configurator would configure an order and provide a quotation correctly the first time.

By having such a system, it was thought that the amount of time spent in contracts/configuration control could be reduced, thereby freeing up time for manufacturing to build the customer’s system and ship within the delivery date. Additionally, an automated Configurator could facilitate the creation of forecasting reports, improve customer relations, and provide timely and accurate configuration information out into the field to the analysts and sales representatives. It was also felt that an expert system may be a good vehicle for building up the corporate memory of the firm so that valuable knowledge and experiential learning would not be lost.

In the following sections, a discussion of how an awareness of expert systems technology was created within The Corporation will be made. However, due to mainly organizational reasons, the development and implementation of an expert configuration system were never realized.

SETTING THE STAGE

Getting Started

The first step in getting an expert systems project started is to create an awareness of expert systems technology. Fortunately, at The Corporation, the vice president of development and the vice president/general manager of manufacturing and customer service had some familiarization with expert systems and they thought that it would be
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