

You can easily modify the database table to find and report your answers. Print your reports and results of queries.

Improving Decision Making: Using the Internet to Locate Jobs Requiring Information Systems Knowledge

Software skills: Internet-based software

Business skills: Job searching

- 1-10** Visit a job-posting Web site such as Monster.com. Spend some time at the site examining jobs for accounting, finance, sales, marketing, and human resources. Find two or three descriptions of jobs that require some information systems knowledge. What information systems knowledge do these jobs require? What do you need to do to prepare for these jobs? Write a one- to two-page report summarizing your findings.

Collaboration and Teamwork Project

- 1-11** In MyMISLab, you will find a Collaboration and Teamwork Project dealing with the concepts in this chapter. You will be able to use Google Drive, Google Docs, Google Sites, Google +, or other open-source collaboration tools to complete the assignment.

Home Depot Renovates Itself with New Systems and Ways of Working CASE STUDY

When embarking on household improvement projects, you might very well start at The Home Depot. This company is the world's largest home improvement specialty retailer, the fourth largest retailer in the U.S., and the fifth largest retailer in the world, operating 2,256 stores in the US, Canada, and Mexico, as well as an online business. It also has been the fastest-growing retailer in U.S. history. The Home Depot targets the do-it-yourself (DIY) and professional markets with its selection of some 40,000 items, including lumber, flooring, plumbing supplies, garden products, tools, paint, and appliances. Home Depot also offers installation services for carpeting, cabinetry, and other products.

The Home Depot was founded in 1978 by Bernie Marcus and Arthur Blank as a source of one-stop shopping for both do-it-yourself homeowners as well as contractors seeking hardware and home renovation materials. The first two Home Depot stores opened on June 22, 1979, in Atlanta, Georgia. At around 60,000 square feet each, these stores were

cavernous warehouses stocking 25,000 different products, much more than the average hardware store at that time. Empty boxes piled high on the shelves gave the illusion of even more product. The Home Depot dwarfed the competition.

From the start, trained Home Depot store associates were able to offer the best customer service in the industry, guiding customers through projects such as laying tile, changing a fill valve or handling a power tool. The Home Depot revolutionized the home improvement industry by bringing the know-how and the tools to consumers while saving them money.

The Home Depot's initial success was based on a decentralized business model, where stores were almost independently managed and filled with highly knowledgeable sales people who had backgrounds in various building trades. Regional and store-level managers made the decisions on what merchandise to carry in each store and how much of each item to keep in stock. Individual stores were large enough (around 100,000 square feet,

with annual revenues of \$60-\$80 million) to store huge inventories of building materials and supplies. Suppliers shipped merchandise directly to the Home Depot warehouse stores, which served as their own distribution centers.

During these early years, The Home Depot was very low-tech. Former Home Depot chief information officer (CIO) Bob DeRhodes observed that the company's most important piece of information technology was the No. 2 pencil. Every Monday morning, Home Depot department managers would mark up orders in an inventory list, then hand the list to a data entry staff member who would key the data into the computer. Even by 2000, The Home Depot lacked the hardware infrastructure for its CEO to send a companywide e-mail. Items were often out of out of stock because the inventory system was so poor.

This business model and information systems strategy served The Home Depot well up to a point. For its first 25 years, The Home Depot's management focused on growing the business, setting up as many stores as it could in prime locations. Eventually The Home Depot had saturated all the major metropolitan markets, and turned to secondary markets to continue its growth. The company began building smaller stores whose size was more appropriate for those markets. These smaller stores lacked the space to warehouse large inventories, which meant they didn't have all items in stock when customers wanted to purchase them. Trucks carrying supplies to each store often arrived half-empty. Store employees spent 60% of their work day on stocking, and just 40% helping customers. The Home Depot also had dozens of distribution centers for lumber, warehouses for storing imports, and "carton distribution centers" designed to handle bulky items such as lawn tractors. This was a very large and expensive logistics infrastructure to maintain for a company where 75 percent of deliveries went directly to individual stores.

When Marcus and Blank retired in 2000, they were succeeded by Robert Nardelli from GE, who became the company's chairman, president, and CEO. By the time Nardelli took over, The Home Depot had lost its competitive edge to Lowe's. Its stores looked too much like lumberyards, whereas Lowe's were more modern and inviting, carrying more upscale goods aimed at women. Nardelli pushed hard to make the company more efficient, instituting many metrics and centralizing operations, while cutting jobs to meet quarterly earnings targets.

Although these measures initially doubled earnings and reduced expenses, they alienated many of the store managers, rank and file sales staff and customers. Nardelli believed home improvement store-by-store sales were less important due to market saturation from competition such as Lowe's. He expected The Home Depot's fastest-growing area of business to be in-home installation services, Web retailing, sales to commercial contractors, and international operations.

The company's homegrown systems had become increasingly expensive to run and modify. Nardelli's information technology plans called for a "Large IT" approach. In 2002, The Home Depot invested \$1 billion in overhauling its IT infrastructure, including replacing point-of-sale (POS) systems, creating a huge data repository for accessing sales and labor management information, and implementing software from PeopleSoft and SAP to provide a standard enterprise software platform for all of the company's basic operations, from financial reporting to inventory tracking. The enterprise software was expected to enable sales associates to access details on products for sale, their features, and availability, and also find information about customers they were serving, including their past transaction history with the company. This software promised to determine the right mix of products for retail outlets, set regional prices, and track inventory from manufacturers' assembly lines to store cash registers. Nardelli believed self-checkout systems could replace all the store cashiers.

Nardelli started to centralize purchasing, merchandizing, store planning, and marketing to achieve economies of scale and he invested \$2 million in workload management software to make work activities more efficient. His primary goal was to lower the overall costs of operating the business and raise the returns to Home Depot shareholders. The self-service checkout aisles and these other measures produced some savings, but not enough. Under Nardelli's leadership, The Home Depot continued to lose ground to Lowe's, which paid much more attention to customers in its stores.

In January 2007, Nardelli was replaced by Frank Blake, who put more emphasis on serving and cultivating customers. Blake also began investing in information systems to help the company with competitive pricing. The Home Depot purchased BlackLocus, a provider of competitive price intelligence software, to help it find out how its prices compare with those of competitors and help it maintain its reputation for

having the lowest prices. BlackLocus provides automated and optimized pricing tools for mid-market and large online retailers, which are able to combine competitive pricing data from across the Web with customers' online store data.

Although Nardelli had made heavy investments in technology, Home Depot still had many outdated ways of working. In 2008, Home Depot hired CIO Matt Carey, who had been in charge of information systems at eBay and at Walmart before that. Carey said that when he arrived at Home Depot, the company's retail technology was comparable to what other chains possessed in 1990. To determine which products were out of stock, sales associates still had to physically inspect shelves. Mobile computing at Home Depots boiled down to a computer terminal atop a cart "powered by a boat battery," with a scanner attached. When merchandise was determined to be running low, the store's manager re-ordered the items himself — inventory replenishment was still not fully automated.

Carey worked with Mark Holifield, Home Depot's Senior Vice President of Supply Chain to make the process of managing suppliers more streamlined and efficient. Holifield turned the company's supply chain design on its head by calling for 75 percent of Home Depot inventory to move through regional distribution centers called rapid deployment centers (RDCs) that would take over inventory replenishment decisions formerly made by individual stores.

This plan called for The Home Depot to construct 24 RDCs strategically located in the United States where each could serve about 100 stores. The RDCs are flow-through distribution centers designed for swift cross-docking of large volumes of merchandise. In flow-through distribution, inbound shipments are organized so that they are typically sent out to their delivery destination within the same day, thereby eliminating the need to store them. Most products leave for stores within 24 hours of their arrival at the RDCs. About 75 percent of Home Depot merchandise is now centrally ordered through these centers. About 20 percent of items, such as products from regional suppliers or trees and live plants requiring special handling will ship directly from suppliers to the stores.

Inventory management became more automated, so that Home Depot could replenish items by predicting depletion of stock, rather than waiting for items to run out. The new improved inventory management system took day-to-day general stock level decisions out of the hands of local managers

and automated those orders, allowing the managers to concentrate more on purchases for special store displays or other areas that are specific to an individual location. One tool for helping Home Depot manage inventory is demand-planning software from Demand Foresight, which uses a state-of-the-art forecasting engine to help manufacturers and distributors reduce forecasting errors and increase profitability. The software targets specific, measurable improvements to customer service, inventory performance, working capital levels, and supply chain efficiency. The vendor actually backs the product with a money-back guarantee that clients will achieve at least a 25% reduction in forecasting error and increase pre-tax profitability by 5 percent or more. Demand Foresight software is able to work within existing IT environments.

As a result of all these organizational and technological changes, inventory forecasting errors have dropped significantly. The percentage of out-of-stock items has been cut in half, and customers are finding products available 98.8 percent of the time. For example, in the unusually harsh winter of 2010, Lowe's had run out inventory, but The Home Depot was able to respond immediately to an upsurge in demand for snow blowers, shovels, and other storm-related needs. Truck trips to make deliveries have been halved, and the job responsibilities of Home Depot store workers have shifted from the shipping docks to store aisles where they can help more customers. Savings on delivery, service, inventory, and transportation costs have increased Home Depot's annual cash flow by \$1 billion. By the autumn of 2012, Home Depot had recaptured its lead over Lowe's.

The Home Depot spent \$64 million to supply sales people with 30,000 Motorola handheld devices called First Phones. In addition to serving as phones and walkie-talkies, the handhelds allow sales associates to use scanners on the device to continuously update and review inventory levels. Associates have instant access to product information, making them more helpful to customers, who often need specific, technical information on tools and parts, and they are able to check on the spot to see if an item is in stock. The mobile devices also help speed checkout times, allowing employees to scan items for customers as they wait on line, instead of waiting until they reach the cashier. Management expected the mobile investment to pay for itself within a year by reducing labor costs, but its true value may be in enabling employees to serve customers better with real-time

information in store aisles. The helpful mobile technology could increase the amount customers spend on each trip to the store, as well as sales to new customers, an area of focus as the chain has slowed the opening of new stores.

The Home Depot has also redesigned its Web site to be more appealing, customer-friendly, and competitive. The company had initially operated the Web site as a separate business that sold items such as Xbox video games that were not carried in its retail stores. The Web site lacked capabilities for having customers order online and pick up merchandise in stores, as was possible at Lowe's. The Web site now sells what its stores do, allows in-store pickups, and features do-it-yourself videos to help customers with their home projects. It also offers many more items than a typical store—more than 600,000 items—compared with 35,000 in a typical store. Home Depot expects most Web site sales to consist of fast-moving smaller products like light fixtures and extension cords, as well as large bulky items like vanities and appliances that people don't want to maneuver out of the store themselves.

Sources: "An Update on Home Depot's Supply Chain Transformation Project," SupplyChainBrain, January 16, 2014; Shelly Banjo, "Home Depot Lumbers into E-Commerce," *Wall Street Journal*, April 16, 2014 and "Home Depot Looks to Offer Same-Day Shipping," *Wall Street Journal*, December 11, 2013; Paula Rosenbloom, "Home Depot's Resurrection: How One

Retailer Made Its Own Home Improvement," *Forbes*, August 21, 2013; Home Depot FORM 10-K Annual Report for the Fiscal Year ended February 3, 2013; Bob Ferrari, "Home Improvement Retailer Wars-August 2012 Update," *Supply Chain Matters*, August 28, 2012 and "Can Home Depot Close Its Supply Chain Gap?" *Supply Chain Matters*, March 1, 2010; Miguel Bustillo, "Home Depot Undergoes Renovation," *Wall Street Journal*, February 24, 2010; Adam Blair, "Home Depot's \$64 Million Mobile Investment Rolls Out to 1,970 Stores," *Retail Information Systems News*, December 7, 2010; Dan Gilmore, "Aggressive Supply Chain Transformation at Home Depot," *SupplyChainDigest*, June 11, 2009; and Charlie Russo, "SAP Nails Home Depot for SCM Software," *SearchSAP.com*, May 18, 2005.

CASE STUDY QUESTIONS

- 1-12** What problems and challenges did Home Depot experience?
- 1-13** Describe the relationship between management, organization, and technology at Home Depot. How did this relationship change over time?
- 1-14** How much was Home Depot's management responsible for its problems? What about the role of technology and organizational factors?
- 1-15** Mark Holifield, Home Depot's Vice President of Supply Chain, has noted that the company didn't have the most leading-edge technology but it was still able to make a major change in its supply chain. Discuss the implications of this statement.

MyMISLab

Go to **mymislab.com** for Auto-graded writing questions as well as the following Assisted-graded writing questions.

- 1-16** What are the strategic objectives that firms try to achieve by investing in information systems and technologies? For each strategic objective, give an example of how a firm could use information systems to achieve the objective.
- 1-17** Describe the complementary assets that firms need in order to optimize returns from their information system investments. For each type of complementary asset, give an example of a specific asset a firm should have.