6.5 Hands-on MIS Projects

The projects in this section give you hands-on experience in analyzing data quality problems, establishing company-wide data standards, creating a database for inventory management, and using the Web to search online databases for overseas business resources.

Management Decision Problems

1. Emerson Process Management, a global supplier of measurement, analytical, and monitoring instruments and services based in Austin, Texas, had a new data warehouse designed for analyzing customer activity to improve service and marketing that was full of inaccurate and redundant data. The data in the warehouse came from numerous transaction processing systems in Europe, Asia, and other locations around the world. The team that designed the warehouse had assumed that sales groups in all these areas would enter customer names and addresses the same way, regardless of their location. In fact, cultural differences combined with complications from absorbing companies that Emerson had acquired led to multiple ways of entering quotes, billing, shipping, and other data. Assess the potential business impact of these data quality problems. What decisions have to be made and steps taken to reach a solution?
2. Your industrial supply company wants to create a data warehouse where management can obtain a single corporate-wide view of critical sales information to identify best-selling products in specific geographic areas, key customers, and sales trends. Your sales and product information are stored in several different systems: a divisional sales system running on a Unix server and a corporate sales system running on an IBM mainframe. You would like to create a single standard format that consolidates these data from both systems. The following format has been proposed.

PRODUCT _ID	PRODUCT_ DESCRIPTION	COST_PER_ UNIT	UNITS_ SOLD	SALES_REGION	DIVISION	CUSTOMER_ID

The following are sample files from the two systems that would supply the data for the data warehouse:

CORPORATE SALES SYSTEM

PRODUCT_ID	PRODUCT_ DESCRIPTION	UNIT_COST	UNITS_SOLD	SALES_TERRITORY	DIVISION
60231	Bearing, 4"	5.28	900,245	Northeast	Parts
85773	SS assembly unit	12.45	992,111	Midwest	Parts

MECHANICAL PARTS DIVISION SALES SYSTEM

PROD_NO	PRODUCT_ DESCRIPTION	COST_PER_UNIT	UNITS_SOLD	SALES_REGION	CUSTOMER_ID
60231	4" Steel bearing	5.28	900,245	N.E.	Anderson
85773	SS assembly unit	12.45	992,111	M.W.	Kelly Industries

- What business problems are created by not having these data in a single standard format?
- How easy would it be to create a database with a single standard format that could store the data from both systems? Identify the problems that would have to be addressed.
- Should the problems be solved by database specialists or general business managers? Explain.
- Who should have the authority to finalize a single company-wide format for this information in the data warehouse?

Achieving Operational Excellence: Building a Relational Database for Inventory Management

Software skills: Database design, querying, and reporting
Business skills: Inventory management

Businesses today depend on databases to provide reliable information about items in inventory, items that need restocking, and inventory costs. In this exercise, you'll use database software to design a database for managing inventory for a small business.

Sylvester's Bike Shop, located in San Francisco, California, sells road, mountain, hybrid, leisure, and children's bicycles. Currently, Sylvester's purchases bikes from three suppliers but plans to add new suppliers in the near future. This rapidly growing business needs a database system to manage this information.

Initially, the database should house information about suppliers and products. The database will contain two tables: a supplier table and a product table. The reorder level refers to the number of items in inventory that triggers a decision to order more items to prevent a stockout. (In other words, if the number of units of a particular item in inventory falls below the reorder level, the item should be reordered.) The user should be able to perform several queries and produce several managerial reports based on the data contained in the two tables.

Using the information found in the tables in MyMISLab, build a simple relational database for Sylvester's. Once you have built the database, perform the following activities:

- Prepare a report that identifies the five most expensive bicycles. The report should list the bicycles in descending order from most expensive to least expensive, the quantity on hand for each, and the markup percentage for each.
- Prepare a report that lists each supplier, its products, the quantities on hand, and associated reorder levels. The report should be sorted alphabetically by supplier. Within each supplier category, the products should be sorted alphabetically.
- Prepare a report listing only the bicycles that are low in stock and need to be reordered. The report should provide supplier information for the items identified.
- Write a brief description of how the database could be enhanced to further improve management of the business. What tables or fields should be added? What additional reports would be useful?