Chapter 1

Managing the Data Resource

Effective management of organizations, both private and public, depends on information concerning the firm’s operations, finances, and the allocation of its resources. With such information management can control costs and maximize profits (private industry) or operational efficiency (public institutions). Such information also provides a basis for planning for future developments, i.e., new products, new services, improved operations.

Since the first nonscientific use of the computer in 1953, organizations have relied increasingly on the use of computers to store and manipulate this information (see Figure 1.1). Today certain industries, e.g., banking and insurance, are virtually dependent on computers. The information explosion of the 1960s and 1970s has made computer data processing a cost-effective operational tool for organizations of almost every type. Recent technological advances, resulting in the availability of low-cost data processing systems, are extending this trend to organizations of almost every size.

To make proper use of these technological tools, the firm must capture data on operations, finances, and resources and convert the data to computer-readable form. The data must be stored, processed, and made available as needed to management. The accuracy and timeliness of the data must be carefully controlled and the processing continually refined to meet new needs. In essence, the data need to be managed.

J.-L. Weldon, *Data Base Administration*
1. THE TRADITIONAL APPROACH TO DATA MANAGEMENT

1.1. Specialization by Application

Anthony has classified management decision making into three categories: operational, tactical, and strategic (see Figure 1.2). Operational decisions govern the day-to-day activities of the firm. The alternatives and decision rules for each are well defined. They also focus on specific functions or events. Tactical decisions are concerned with the allocation of resources and planning. These decisions are more complex and often involve estimates or probabilities in addition to factual information. The highest level of decision making, strategic decisions, is concerned with long-range planning and policymaking. Information for strategic decisions must be gathered from areas both inside and outside the firm.

Data processing (or information) systems can be similarly classified according to the level of decision making that they support. Initially most data process-