Managing the Data Center

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Preface

As a data center manager (DCM), you must keep a complex set of resources (namely, hardware, software, and people) in balance and justify the cost and performance of these resources to your organization's top management. At the same time, as the organization's dependence on its information resources increases, the users themselves become more aware of and more interested in data processing. These factors combine to make the DCM's job more visible within the organization; in fact, they require that you truly *manage* the center. *This book describes how to manage (rather than simply "operate") a data center, and it defines the tasks that every DCM must accomplish in order to manage well.*

Experienced data center managers know that there is rarely a single, right answer to a data center dilemma. Rather, what's usually needed is an ability to make a sound decision from among a group of alternatives. *The theme of this book is that the data center should be viewed as a business enterprise and that you should make decisions much as a rational businessperson—a type of entrepreneur—would make decisions about a business.*

This book is written for the data center manager, for the manager of the data center manager, or for the person who is in line for appointment as a data center manager. In other words, the book looks at the DCM's job from the perspective of data processing *management* rather than from a *technical* data processing point of view. Thus, the focus is on such concerns as cost/benefit relationships and the effective use of the resources that have been allocated to the DCM. You will also find here several variations on data center "models," and the various parts of these models are discussed in order to understand

why a data center works the way it does and to anticipate the parts of the model that are most likely to change over time.

Although this book contains a number of sample documents and forms, it is more than a simple "handbook." Rather, it provides a wide variety of recommendations and lists of specific things to do that will help you manage the data center better. The author's aim is to give you new insights into how the DCM's job can best be performed on a day-to-day basis and, in the larger sense, into what the DCM's responsibility is as a planner and leader of the data processing future of an organization.

Introduction

Defining the scope of the data center manager's job is an awesome task. Look, for example, at the following data processing trends that have emerged in recent years:

- Central processor capacity and power is increasing and increasing rapidly, even in what would have been considered a "small" installation just a few years ago.
- More on-line applications are being put into production.
- Distributed data processing is still a "young" concept, but the uncertainties surrounding it have not kept people from trying to implement it.
- Capacity allocation between central sites and distributed sites remains unsettled for the near term, but the trend toward distributed data processing will probably result in functional specialization among various processing locations.
- Data entry workloads are diminishing as a percentage of the total data center workload.

Each of these trends brings with it a set of changes with which a data center manager (DCM) must learn to deal.

In a recent conversation with a data center manager, the manager identified the following as areas that will change in the near future:

- Security and integrity of data will be improved.

- Production scheduling will be improved with the use of a job scheduler.
- Current CPUs will be replaced with larger, faster equipment since the growth of the company will create a larger volume of work than current CPU cycles can process effectively.
- Staffing characteristics will change (there will be less clerical effort, more emphasis on monitoring and control).
- The data center will be relocated because of insufficient space.

The startling thing about this list is not whether or not these changes will take place (they probably will), but the diversity of the events a data center manager is expected to manage.

If we reword the items in the above list to match terms traditionally used when a manufacturing process is revamped, the list would read something like this:

- Review personality profiles of all personnel; tighten access and availability to all facilities (local and remote).
- Study all work center loadings to determine optimum use of machine resources.
- Install totally new production line equipment.
- Retrain existing staff in needed new skills; hire specialists as needed.
- Move into a new production facility.
- Build additional plants, tying them into the main plant for operational purposes.

This is a formidable list of "things to do!" To deal with these tasks, the DCM must be a combination personnel director, industrial engineer, building services manager, production control manager, and computer guru. In other words, to be successful, a data center manager must tackle the job as though he or she were an entrepreneur striving to build a small company into an ever more efficient and cost-effective operation.

The major sections of this book are designed to help you develop this entrepreneurial attitude. Part I, "Managing," describes the dif-

ference between "managing" and "operating" a data center, defines the "total computer resource," and lays the groundwork for effective planning and measuring of the data center's growth.

Part II, "Organizing," describes the functions of every job in the data center and shows the relationship among these jobs. This section covers the importance of matching your employees' skills, backgrounds, and personalities to their positions and of providing realistic feedback on their performance.

Part III, "Getting Results—Managing the Information Factory," looks at the data center as a "factory" in order to show how to achieve the highest performance ratings from your "customers" (the users). The basic issues of production and inventory control, customer service, and optimal workflow are addressed in this section.

Part IV, "Handling the Business Details of Data Processing," gives specific practical advice on how to present the data center's budget, how to price data center services, and how to account for data center expenditures—all topics that must be handled well in order to obtain the support of upper management for the data center's activities.

Part V, "Living with Change," provides an overview of the issues that are becoming more and more important both as your own data center grows and as the industry as a whole becomes more complex. The concluding chapter (Chapter 22) provides a case study against which you can test your entrepreneurial skills, and the Summary provides a glimpse of the future from this author's point of view.

Throughout this book, the terms "data center" and "data center manager" are used as a matter of convenience to avoid ponderous lists of synonyms. These terms are meant to embrace all similar titles and designations, such as "operations center," "EDP center," "operations manager," "computer center manager," and the like. Likewise, terms such as "company" or "organization" are used in the generic sense and are intended to apply to a wide variety of business situations even though entities such as banks, hospitals, and nonprofit organizations may not usually refer to themselves as "companies."

The Selected Bibliography at the end of this book includes all the references cited in the text as well as books and articles related to data center management.

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