Management Information from Data Bases

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To Marie-Anne

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Preface

This book is the product of many years of teaching management students about the role of the computer in supporting the function of management in both the public and private sectors. It assumes that its readers are, in the main, managers or management students. It is essential that managers become familiar with this growth area of management practice and participate in the making of any changes associated with the computer.

Although not necessarily computer experts, readers are assumed to be familiar with computers at least to the extent that they have completed a short 'introduction to computer data processing' course. The book should also be useful to data processing professionals and the material has been used in a B.Sc. Computer Science course because the systems development staff need to understand the overall problems and methodology of management information systems (MIS). For the purposes of computer scientists, however, it will need to be supplemented with a more technical text.

The book aims to be both practical and topical. It puts forward a methodology for the development and implementation of MIS. It presents the material in a way that is as non-theoretical as possible and many examples are discussed so as to emphasise the practical nature of its contents. This subject needs to be taught using case studies and a major case study is given in appendix A. Case histories, which are drawn from practical experience, are discussed in the body of the text. It is the authors' experience that students who follow the case study find that it supports the subject of the text by bringing out and reinforcing the major problems of developing a MIS.

Chapter 1 attempts to set the scene. It explores the involvement of management in guiding the rapid evolution of computer-based information systems so that the changeover will be smooth and the results serve the needs of managers and not those of the computer.

PREFACE

A methodology for the implementation of MIS is covered in chapters 2, 3, 4 and 5 together with a case study described in appendix A. The systems viewpoint is discussed in chapter 2 and to make a useful contribution to the methodology the practical aspects of systems theory are emphasised. Chapter 3 shows how a systems planning team can develop a strategy for design and take a view of data that will give management the information they want to control resources.

An overview of the methodology put forward in the book is introduced in chapter 4 and figure 4.1, which expresses this overall methodology, is likely to be referred to throughout the book. The chapter then looks at data analysis, which is part of this methodology. Data analysis will produce a data model of the organisation which will then become the data base from which the information requirements of the organisation can be satisfied. Chapter 5 shows how the MIS is developed and implemented. It discusses how the overall system may be conveniently broken up into interconnected parts called subsystems and how each of these is implemented. Analysing the requirements of the new subsystem, which will precede its implementation, is referred to as functional analysis.

The remaining chapters provide support material essential for an understanding of the implementation problems. Chapter 6 surveys recent technical developments that will have an impact on MIS. It concentrates on those developments that are particularly relevant to the manager; indeed, he will need to understand these aspects in order to use the MIS to his best advantage. Data bases are discussed in chapter 7, and emphasis is placed on the role of the data base administrator who will have overall responsibility for the management of the data base. Chapter 8 looks at the nature of data and its validation. The accuracy of the data in the data base is vital in an environment where each element of data may encounter many different users.

The difficult problem of the cost of information receives treatment in chapter 9. A balance is struck between an excessively quantitative approach and a 'laissez-faire' attitude towards the high costs involved in MIS development. Finally, human problems associated with change are discussed. If management fails to gain the cooperation of those involved, then the technology will also fail. These behavioural considerations are discussed in chapter 10 along with the wider social impact of MIS.

PREFACE

We would like to thank both staff and students of Thames Polytechnic and the University of Aston who have, knowingly or unknowingly, made a contribution to this book. Particular mention should be made of Trevor Wood-Harper, Christine Blundell and Colin Barrow who were helpful in their specialist fields. A grateful thanks to Graham Smith for his work in producing the diagrams and Stella Mayes Reed for the photographs.