How Computers Affect Management

Other books by the same author:

MANAGEMENT SUCCESSION

THE REALITY OF MANAGEMENT

THE BOSS: THE LIFE AND TIMES OF THE
BRITISH BUSINESSMAN (*with Roy Lewis*)

MANAGERS AND THEIR JOBS

THE REALITY OF ORGANIZATIONS: A GUIDE
FOR MANAGERS

HOW COMPUTERS AFFECT MANAGEMENT

Rosemary Stewart

Macmillan Education

© Rosemary Stewart 1971
Softcover reprint of the hardcover 1st edition 1971
All rights reserved. No part of this publication
may be reproduced or transmitted, in any form
or by any means, without permission.

First published 1971 by
THE MACMILLAN PRESS LTD
London and Basingstoke
Associated companies in New York Toronto
Dublin Melbourne Johannesburg and Madras

ISBN 978-1-349-01109-4   ISBN 978-1-349-01107-0 (eBook)
DOI 10.1007/978-1-349-01107-0

Contents

LIST OF TABLES AND DIAGRAM	vi
ACKNOWLEDGEMENTS	vii
INTRODUCTION	ix
Part I: <i>Aims and Plan of Research</i>	
1 Aims and Methods of Research	3
2 Classifying Computer Effects	11
Part II: <i>The Case Studies</i>	
3 Clerical Procedures	29
Branch Banking	29
Oxford University Press	39
West Midlands Gas Board	46
4 Production Planning and Control	48
Introduction	48
Flowmix (Pseudonym)	50
Patulum (Pseudonym)	69
Hidcote (Pseudonym)	91
Hayward Tyler	108
Commentary	115
5 Investment Planning Models	128
British Petroleum	128
Gas Council	172
British Oxygen	181
Part III: <i>The Findings</i>	
6 Relations between Computer Staff and User Management	171
7 How Computers Affect Management	209
8 Managerial Understanding	229
9 Implications for Management	235
INDEX	239

List of Tables and Diagram

Table 1	Potential effects on management from different types of computer applications	20-3
2	Patulum: Hierarchy of factors attributed to the two problems of inaccuracy and lack of forward control over production	85-6
3	Patulum: Perception of problems by time periods	87
4	Potential effects on management from different types of computer applications compared with actual effects in case-study companies.	210-14
5	Impact on managers' jobs after implementation	217
6	Assessing the importance of the impact on managers' jobs	219
Diagram 1	The ways in which management is affected by the computer	24

Acknowledgements

THIS research was made possible by the generous co-operation of the organizations studied. I am especially grateful to the managements concerned for their forbearance when given the opportunity to criticize and amend the case studies. Almost invariably, they believed that research should be unedited, except for the correction of factual errors, and agreement for publication was given without any change of substance. I am particularly grateful to British Petroleum where the management gave such full co-operation in what proved to be an unusually interesting study. I am also very grateful to British Oxygen, the Gas Council, Hayward Tyler, the Oxford University Press and the West Midlands Gas Boards as well as to the other companies which prefer to remain anonymous.

I owe a considerable debt to the two main research workers, Michael White and Nicholas Woodward, without whom this book could not have been written. They both worked on the last two years of the project, while in the preliminary stages I was assisted by another research worker, Marcia Grant. Michael White collaborated with me on the research at British Petroleum and wrote the draft of this case study. He also did the field work in Flowmix, the Gas Council and British Oxygen and drafted the corresponding case studies. Nicholas Woodward did most of the field work in the Bank, and all of it in Hidcote, Oxford University Press and West Midlands Gas Board. He also wrote the draft case studies of these. Both men did the field work in Patulum and Michael White drafted the case history. Michael White is also co-author of an article which forms the basis of Chapter 2. I was exceptionally fortunate in the research workers, whose ideas and work have contributed much to this book.

The main part of the research, which lasted two years and nine months, was financed by the Social Science Research Council. I am most grateful to them and to the Oxford Centre for Management Studies for providing facilities and time for the research and writing.

ROSEMARY STEWART

*Oxford Centre for Management Studies,
30 December 1970*

Introduction

COMPUTERS will revolutionize management and the organizations within which management works. This prediction has been made by different writers for over ten years. True or not – and it certainly has not come true yet – the computer has both provided a major new tool for management and added a large new innovating group to the organization. What effects has this had on management? In what ways has it changed what managers do? What demands has it made upon them? Has it affected how they think about the problems of their business? Has it altered the structure of the organization? The author, with her assistants, has just completed a three-year research project aimed at answering these questions in the companies studied, which were chosen as specimens each with different types of computer applications.

This book is principally addressed to two groups of readers. First, it is addressed to managers who want to learn how to employ the computer, and computer specialists, more effectively, or who want to know how particular types of computer applications may affect them. Secondly, it is addressed to those computer specialists whose interests are wider than the technical aspects of their work. The book should also be of special interest to training officers who want to help managers to cope better with the demands of the computer facility, and to research workers and teachers in management studies.

GUIDE TO READING THIS BOOK

This is a longer book than the author would have wished, knowing how much there is to read and how little time most people, especially managers, have for doing so. The format is therefore designed to help the reader to decide which parts of the book are likely to be of chief interest to him. Probably Part III is of most general interest since it consists of a commentary upon the findings and lessons of the case studies. Each chapter in it has a summary at the end. The implications of the research for management are summarized in the last chapter. Part I consists of a description of the aims and methods of the research

and of the forms of classification used in analysing the case studies. Hard-pressed managers are advised at least to read the summaries of the two chapters, which comprise Part I and to look at the diagram on p. 24 which summarizes the different sources of effects of management from the computer. Part II contains the case studies which are grouped into chapters according to the type of computer application. Each case study starts with a summary of the main points of interest so that the reader can quickly tell whether it may be of interest to him. Each case study follows a standard format with background information first, followed by a history of the application studied and finally an interpretation of what happened, including an analysis of the effects on management.