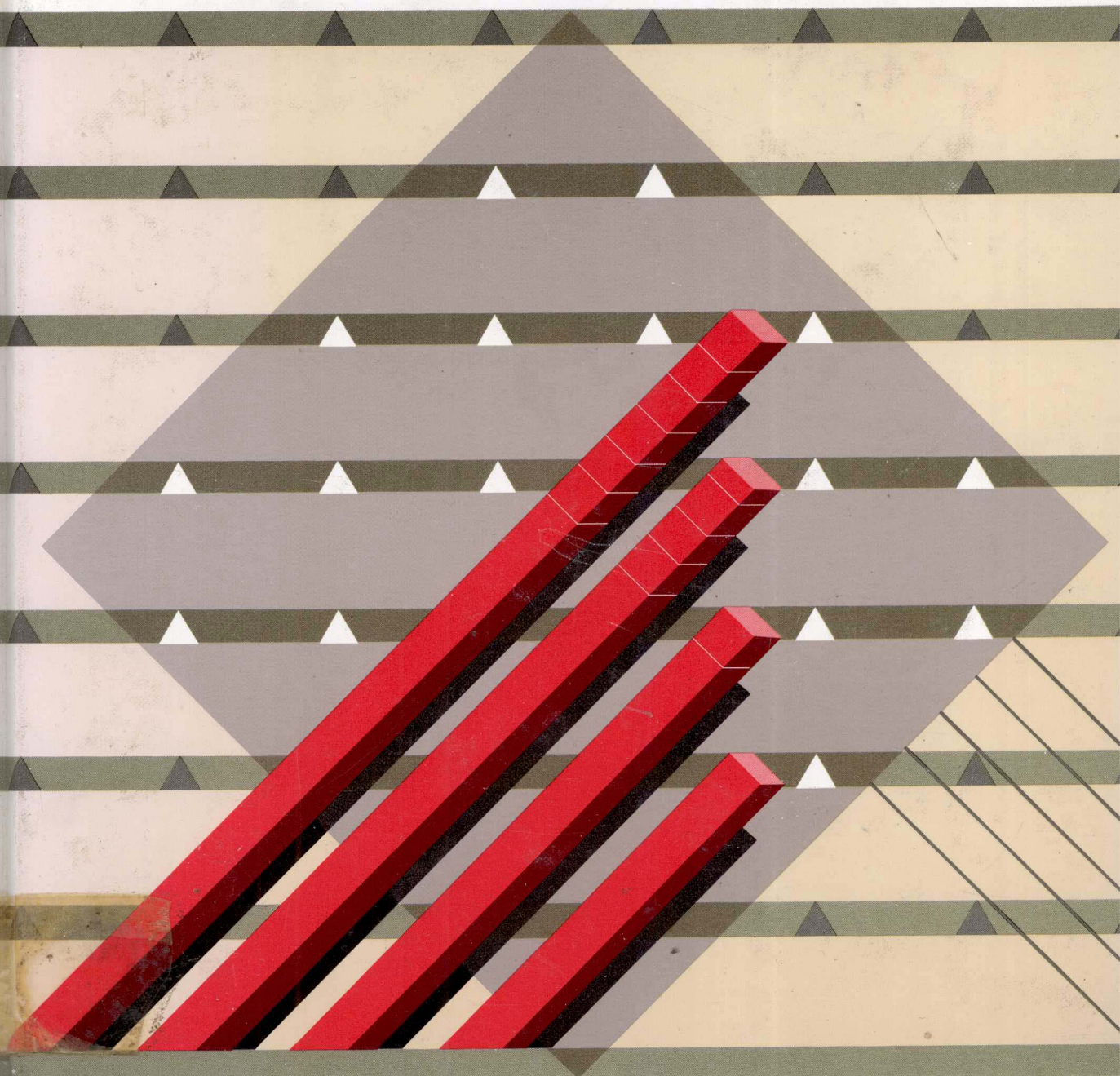


Harold Koontz / Cyril O'Donnell / Heinz Weihrich

E I G H T H E D I T I O N
MANAGEMENT



E I G H T H E D I T I O N

MANAGEMENT

Harold Koontz

University of California,
Los Angeles

Cyril O'Donnell

Deceased
University of California,
Los Angeles

Heinz Weihrich

University of San Francisco

McGraw-Hill Book Company

New York St. Louis San Francisco Auckland Bogotá Hamburg
Johannesburg London Madrid Mexico Montreal New Delhi
Panama Paris São Paulo Singapore Sydney Tokyo Toronto

MANAGEMENT

Copyright © 1984, 1980, 1976 by McGraw-Hill, Inc. All rights reserved.

Formerly published under the title of PRINCIPLES OF MANAGEMENT: AN ANALYSIS OF MANAGERIAL FUNCTIONS, copyright ©1972, 1968, 1964, 1959, 1955 by McGraw-Hill, Inc. All rights reserved. Copyright renewed 1983 by Harold D. Koontz. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

3 4 5 6 7 8 9 0 V N H V N H 8 9 8 7 6 5

ISBN 0-07-035487-1

This book was set in Times Roman by Black Dot, Inc. (ECU). The editors were John R. Meyer and Peggy Rehberger; the designer was Joseph Gillians; the production supervisor was Marietta Breitwieser. New drawings were done by J & R Services, Inc. The cover was designed by Jerry Wilke.

Von Hoffmann Press, Inc., was printer and binder.

Library of Congress Cataloging in Publication Data

Koontz, Harold, date
Management.

Includes indexes.

1. Industrial management. 2. Management.

I. O'Donnell, Cyril, date II. Weihrich, Heinz.

III. Title.

HD31.K6 1984 658.4 83-13558

ISBN 0-07-035487-1

ABOUT THE AUTHORS

HAROLD KOONTZ has been active as a business and government executive, university professor, company board chairman and director, management consultant, worldwide lecturer to top management groups, and author of many books and articles. Since 1950 he has been Professor of Management and since 1962 Mead Johnson Professor of Management at the University of California, Los Angeles, and from 1978 to 1982, was World Chancellor at The International Academy of Management. He is an author or coauthor of nineteen books and ninety journal articles, and his *Principles of Management* (now in the eighth edition as *Management*) has been translated into sixteen languages. His *Board of Directors and Effective Management* was given the Academy of Management Book Award in 1968. After taking his doctorate at Yale, Professor Koontz served as Assistant to the Trustees of the New Haven Railroad, Chief of the Traffic Branch of the War Production Board, Assistant to the Vice President of the Association of American Railroads, Assistant to the President of Trans World Airlines, and Director of Sales for Convair. He has acted as management consultant for, among others, Hughes Tool Company, Hughes Aircraft Company, Purex Corporation, KLM Royal Dutch Airlines, Metropolitan Life Insurance Company, Occidental Petroleum Corporation, and General Telephone Company. Professor Koontz's honors include being elected a Fellow of the American and the International Academies of Management, and serving as President of the American Academy of Management. He received the Mead Johnson Award in 1962 and the Society for Advancement of Management Taylor Key Award in 1974 and is listed in *Who's Who in America*, *Who's Who in Finance and Industry*, and *Who's Who in the World*.

The late CYRIL O'DONNELL was educated at the University of Alberta and University of Chicago, where he received a Ph.D. in management. His last position was Professor of Business Organization and Policy and Director, Case Development Program, at the Graduate School of Business Administration, University of California, Los Angeles. He was previously chairman of the Department of Economics at DePaul University. He had extensive business and professional experience, having been affiliated with the War Labor Board and private business enterprises. Professor O'Donnell was a consultant to several domestic and foreign firms and government agencies and was an active director of several business corporations. In addition to contributing to numerous professional journals, he was the author of *Business Management*, *Cases in General Management*, and *The Strategy of Corporate Research*.

HEINZ WEIHRICH received his Ph.D. from the University of California at Los Angeles. Currently Professor of Management at the University of San Francisco he has also taught at Arizona State University, the University of California at Los Angeles, at INSEAD—the European Institute of Business Administration in France, and at universities in Germany and Austria. His numerous articles on management and behavioral science topics have been published in the United States and abroad. Professor Weihrich conducted the first comprehensive research study of management by objectives (MBO) as a total system of managing and coauthored *Management: An MBO Approach*. In addition to pursuing his academic interests, Professor Weihrich is active in management consulting as well as in executive and organizational development in the United States and abroad. He has more than fourteen years of business and consulting experience in the United States and Europe, working with such companies as Volkswagen, Hughes Aircraft Company, and others.

TO MARY
AND URSULA

PREFACE

This book presents the basics of an operational theory and science of management. Although we deal with the subject thoroughly in Chapter 3, we would like to point out here that the operational approach to any science is one where the concepts, principles, and techniques are designed to be related to, and to underpin, the field of practice, in this case, managing. While we would not pretend to put in one volume all the knowledge that might be useful to a practicing manager, we hope to present the most important portions of this knowledge in an organized and useful way. In doing so, we emphasize the essentials of management that are pertinent to the effective work of practicing managers and show how in various areas these must be looked upon as a system. We demonstrate that managing itself is a part of a larger system interacting with a manager's total environment—economic, technological, social, political, and ethical. This book also stresses that what managers do in practice must both reflect and be modified by the actual situations in which they operate and the realities they face.

While long emphasizing concepts, theory, principles, and techniques of management, beginning with the first edition in 1955, we have taken the position that managing is an art. This means that to achieve the best kind of practice, managers must apply science—the underlying organized knowledge of management—to the realities of any situation. As every practicing manager knows, there is no universal “one best way” of doing things in all instances, and the practical application of management theory and science has always recognized the importance of the realities in a given situation. This is normal for all arts. Practicing engineers, for example, may use generally known and accepted knowledge of physics, electronics, hydraulics, or other sciences in their design of an instrument, a

piece of machinery, or a building. But the actual products of their design will differ in appearance and content depending on the situations they are intended to serve.

In developing a framework in which management knowledge can be organized in a useful and practical way, we have chosen, as a primary classification, to use the functions of managers—planning, organizing, staffing, leading, and controlling. Each function, in turn, is dealt with by further breakdowns of knowledge pertaining to it. Experience has proved that any new knowledge, whether from the behavioral or quantitative sciences or from the innovations of practice, can be placed within this framework. It is hoped in this way to make a start toward developing a true management science—organized knowledge—that puts new developments into a proper perspective and makes this science useful to those who must apply it, as practitioners, to realities.

In our attempt to develop classifications of knowledge, we recognize these classifications as being nonexclusive and as requiring a systems approach. The functions of managers represent an interlocking, interacting system. Each functional area has within it a number of systems and subsystems. With eclectic inclusion of pertinent knowledge and techniques from other areas of scientific inquiry, we likewise recognize the need for interconnecting elements between these and the task of the manager. Moreover, it should be strongly emphasized that this book does not look at any enterprise and the manager's role within it as a closed social system. Even though the primary stress of the text is on the role of managers in creating and maintaining an internal environment for performance, it would be foolish indeed for managers (or the authors) not to consider their need to interact with the entire external environment in which every manager operates.

As we did in previous editions, we would like again to make certain aspects of our position clear at the outset. While we recognize that managers seldom, if ever, spend all their time and talents in managing, it is our conviction that the functions of a manager, as manager, are essentially the same whether the person is a first-level supervisor or the top executive of an enterprise. You will therefore find no basic distinction made among managers, executives, administrators, or supervisors. To be sure, the environment of each may differ, the scope of authority held may vary, and the types of problems dealt with may be considerably different; a person in a managerial role may also act as a salesperson, an engineer, or a financier. But the fact remains that, as managers, all who obtain results by establishing an environment for effective and efficient performance of individuals operating in groups undertake the same basic functions.

Moreover, the fundamentals related to the task of managing apply to every kind of enterprise in every kind of culture. The purposes of different enterprises may vary, but all that are organized do rely on effective group operation for efficient attainment of whatever goals they may have. It is true that many of the case examples and techniques used in this book are drawn from actual business enterprises. However, we have no intention of overlooking the fact that the same fundamental truths are applicable elsewhere than in business.

In this edition, as in the seventh edition, we have dropped the term “principles” from the title, not because we believe that principles do not exist or are not important to management, but rather because some instructors and readers have erroneously gained the impression that the book is primarily an enumeration

of principles. This book has always been more, even though identification of principles has been, and still is, regarded as a means of abstracting certain truths from an immensely complicated body of knowledge. In this new edition, in order to make much clearer the treatment of a broad science and practice of management, attempts are made throughout to identify systems elements in the field and to relate the many techniques and elements of theory to a contingency, or situational, approach.

However, we would not wish you to lose sight of the importance of theory and principles. Principles are used here in the sense of fundamental truths applicable to a given set of circumstances that have value in predicting results. They are thus descriptive and predictive and not prescriptive as so many have erroneously believed. An attempt has been made to cast most of these fundamental truths in the form of propositions with independent and dependent variables. In a few cases, principles are very little more than concepts. In other instances, concepts and basic truths are introduced without being elevated to the status of major principles. In any event, however, an attempt has been made to recognize the indisputable fact that clear concepts are the initial requirement of science and understanding. The structure of major principles emphasized, to the extent that they reflect fundamentals in a given area, may be referred to as "theory"—a body of related principles dealing systematically with a subject. Even though principles and theory are referred to throughout the book, you must not gain the impression that they are impractical. If accurately formulated and properly used, principles and theory should be eminently practical. The real test of their validity is in the crucible of practice.

There are those who object to using the term "principles" for fundamental truths not supported by elaborate and complete verification of their validity. Such persons would prefer to see these principles characterized as hypotheses. Perhaps, strictly speaking, many are. However, even far more statistically verified principles in the so-called exact sciences are virtually always regarded as subjects for further verification. Moreover, we are completely aware that the formulation of many principles made here represents essentially a preliminary attempt to codify a number of basic truths and, by their being placed in a framework believed to be logical, an attempt to move toward a theory of management. Being preliminary, these summaries are not intended as a final scheme of a theory of management. But they are believed to be a convenient and useful way of packaging some of the major truths that experience and research have found to have a high degree of credibility and predictability.

In this eighth edition, as in those preceding it, attempts have been made to respond to several major influences. One is the continuing help from comprehensive surveys of teachers and scholars who have used past editions of this book at various levels of academic and practical management education in a wide variety of universities and operating enterprises. The input of those using the English version of the book has been supplemented by that of the many others who use its sixteen foreign-language editions. Another major influence to which we have attempted to respond is the burgeoning volume of research, new ideas, and advanced techniques, especially those being applied to management from the behavioral, social, and physical sciences.

In the revision for the 8th edition, considerable new material has been added. To produce an edition with fewer pages than the 7th edition, while adding these new concepts, thinking, and research results, we did a careful line-by-line pruning of the previous edition. Although not all the changes can be noted here, certain of the major revisions can be pointed out. These include: (1) a new chapter on "The External Managerial Environment: Domestic and International" which replaced two chapters in the 7th edition; (2) a largely rewritten chapter on "Strategies and Policies" in which we deal more thoroughly than before with the development of strategies and how to implement them in practice; (3) a new chapter on "Committees and Group Decision Making;" (4) a rewritten chapter on "Manager and Organization Development;" (5) a new chapter on "Managing and the Human Factor" that incorporates the latest behavioral science research findings; and (6) a new chapter on "Planning and Controlling Production and Operations Management" by which we bring into the area of managerial control a much recommended treatment of production management.

In addition to new or rewritten chapters, this edition provides a complete updating of management theory and introduces a number of new concepts, approaches, and techniques which have become important in recent years. Included among these are Theory Z and Japanese management, research and practice on Quality of Working Life, control circles, new experience in management practice in certain foreign countries such as France and Germany, strategic business units (SBU's), Alderfer's ERG theory of motivation, and the effect of managerial practice on enterprise productivity. In response to some confusion and criticism, we have also changed our thinking on direct and indirect control, using direct control to reflect the many control techniques applied to detect deviations from plans and correct activities and indirect control as the control provided by improving and maintaining the quality of managers.

To aid those who use this book as a means of learning about management theory and practice, we have introduced several features in this edition. Cases, formerly grouped in the major parts of the book are now assigned to individual chapters. Also, a number of new cases have been included. In addition, we show on the inside of the front and back covers a systems model of the field of management. In place of written major part introductions, we now show this model with the area covered by the part highlighted. We hope that this model will help you understand the field of management theory and policy as we perceive it.

As might be expected with a text of this kind, we are indebted to so many persons who have helped us over the three decades of the book's existence that a complete acknowledgment would be encyclopedic. Some scholars and managers are acknowledged in footnotes and other references to their contributions. Many managers with whom we have served in business, government, education, and other enterprises have contributed by word and deed. Thousands of managers at all levels in all kinds of enterprises in the United States and many countries throughout the world have allowed us to test ideas in executive training seminars and lectures. To the executives of various companies and other organizations with which we have been privileged to work as directors or consultants, we are grateful for the opportunities to continue the clinical practice of management. Nor should we

forget the searching questions and criticisms of many of our academic colleagues throughout the world who have helped us sharpen our thinking.

In previous editions, special appreciation was expressed to a number of individuals who contributed in many important ways to the content of the book. While they are not again named here, their contributions, by shaping many parts of earlier editions, have also been important to this edition. For this edition, in particular, we would like to express our great appreciation to certain individuals who went through the seventh edition in detail and made a number of very helpful suggestions. These are Professor Keith Davis of Arizona State University, Professor Fred Luthans of the University of Nebraska, Professor John D. Christesen of Westchester Community College, Professor Ted Helmer of the University of Hawaii, Professor Lawrence Huggins of Manhattan College, Professor Leroy Plumlee of Western Washington University, Professor Philip Quaglieri of Northern Illinois University, and Professor Stephen Spiegelglass of Manhattan College. The intelligent and helpful reviews and suggestions of these management professors have been carefully considered and most of the suggestions given have been adopted. In addition, we are happy to express our appreciation to Professor Louis E. Davis, Chairman of the Center for Quality of Working Life in the University of California, Los Angeles, and his associate Dr. Joel A. Fadem, for their contribution of material on the Quality of Working Life programs and to Dean Bernard L. Martin and Associate Dean James Weber, both of the University of San Francisco, for their support.

We are indebted to John F. Halff, Chief Financial Officer of Tylan, for preparing and letting us use Case 27-2 "Manufacturing Requirements Planning—MRP."

We also wish to thank Ms. Carol Pincus for her conscientious and intelligent work in preparing the manuscript of this edition for publication and Ms. Lou Martin for typing several chapters of the manuscript.

Although he passed away in February, 1976, we have continued to carry Dr. Cyril O'Donnell's name on the book as a token of our appreciation for the contributions he made in its early editions.

Harold Koontz
Heinz Weihrich

CONTENTS

Preface

xvii

PART 1 THE BASIS OF MANAGEMENT THEORY AND SCIENCE

CHAPTER 1 MANAGEMENT: THEORY, SCIENCE, AND PRACTICE 3

Why Management? **5** / Is Managing a Science or an Art? **6** / The Need for Theory and Techniques of Management **10** / Contingency, or Situational, Management **12** / Management Theory and Science Never Advocate the One Best Way **13** / Managing Requires a Systems Approach **14** / The Systems Approach to Operational Management **18** / For Discussion **21** / Cases **22**

CHAPTER 2 THE EMERGENCE OF MANAGEMENT THOUGHT 24

Early Contributions to Management **25** / Precursors to Taylor and Scientific Management **27** / Frederick Taylor and Scientific Management **30** / Fayol: Father of Modern Operational-Management Theory **34** / The Emergence of the Behavioral Sciences **37** / Chester Barnard and Systems Theory **40** / Criticisms and Misunderstandings of the Classicists **42** / The Emergence of Modern Management Thought **43** / For Discussion **49** / Cases **50**

CHAPTER 3 PATTERNS OF MANAGEMENT ANALYSIS 52

The Various Approaches to Management **53** / Implementing the Operational Approach **63** / Functions of Managers **64** / The Management Theory Jungle: Positive Tendencies toward Convergence of Theory Approaches **66** / For Discussion **70** / Cases **71**

CHAPTER 4	THE EXTERNAL MANAGERIAL ENVIRONMENT: DOMESTIC AND INTERNATIONAL	73
	Managers in Their Environments 74 / Comparative Management 80 / Environmental Impact and Managing in Selected Countries—Theory Z 86 / International Management and Multinational Corporations 92 / For Discussion 96 / Cases 97	
PART 2	PLANNING	
CHAPTER 5	THE NATURE AND PURPOSE OF PLANNING	101
	The Nature of Planning 102 / Types of Plans 105 / Steps in Planning 113 / The Planning Process: Rational Approach 117 / The Planning Period: Long-Range Planning 118 / Planning Involves an Open-System Approach 123 / For Discussion 124 / Cases 125	
CHAPTER 6	OBJECTIVES	127
	The Nature of Objectives 127 / Evolving Concepts in Managing by Objectives 131 / The Process of MBO 134 / How to Set Objectives in Different Environments 137 / Benefits and Weaknesses of MBO and Some Recommendations 139 / For Discussion 143 / Cases 143	
CHAPTER 7	STRATEGIES AND POLICIES	145
	Sources of Strategies and Policies 146 / Strategies and Policies Give Direction to Plans 148 / The Special Importance of Strategies 150 / Requirements for Developing Strategies 150 / Developing Major Strategies 153 / Implementing Strategies Effectively 163 / For Discussion 165 / Cases 165	
CHAPTER 8	PREMISING: ESSENTIAL STEP IN PLANNING	168
	Premising: The Environment of Plans 169 / Types of Premises 170 / Environmental Forecasting: Key to Premising 171 / The Sales Forecast: Key Plan and Premise 175 / Making Premising Effective 180 / For Discussion 182 / Cases 183	
CHAPTER 9	DECISION MAKING	184
	Decision Making as a Key Step in Planning 185 / Developing Alternatives 186 / The Principle of the Limiting Factor 186 / The Basic Process of Evaluation 187 / Bases for Selection from among Alternatives 190 / Operations Research and Planning 191 / Modern Approaches to Decision Making under Uncertainty 201 / Evaluating the Importance of the Decision 207 / The Systems Approach and Decision Making 208 / For Discussion 208 / Cases 209	
CHAPTER 10	MAKING PLANNING EFFECTIVE	212
	Why People Fail in Planning 213 / Limits to Planning 215 / Establishing an Environment for Effective Planning 219 / Summary of Major Principles for Part 2: Planning 223 / For Discussion 225 / Cases 226	

PART 3 ORGANIZING

CHAPTER 11	NATURE AND PURPOSE OF ORGANIZING	229
	Formal and Informal Organization 230 / The Term “Department” 233 / Organizing as a Process 234 / Organizing Must Be Based on Contingencies and Situations 234 / Basic Organization Questions 236 / Organization Levels and the Span of Management 236 / Factors Determining an Effective Span 240 / Wide versus Narrow Spans 243 / Operational Application of Underlying—Variables Approach 246 / The Need for More Research 249 / The Need for Balance 249 / For Discussion 250 / Cases 251	
CHAPTER 12	BASIC DEPARTMENTATION	253
	Departmentation by Simple Numbers 254 / Departmentation by Time 254 / Departmentation by Enterprise Function 254 / Departmentation by Territory 257 / Departmentation by Product 260 / Customer Departmentation 263 / Market-Oriented Departmentation 265 / Process or Equipment Departmentation 267 / Service Departments 267 / Matrix Organization 270 / What Is the Best Pattern of Departmentation? 278 / For Discussion 280 / Cases 281	
CHAPTER 13	LINE AND STAFF AUTHORITY RELATIONSHIPS	283
	Authority and Power 284 / Line and Staff Concepts 284 / Functional Authority 290 / Line and Staff in Practice 296 / Benefits in Using Staff 297 / Limitations in Using Staff 298 / Making Staff Work Effectively 299 / For Discussion 301 / Cases 302	
CHAPTER 14	DECENTRALIZATION OF AUTHORITY	304
	Delegation of Authority 306 / Principles of Delegation 308 / The Art of Delegation 312 / Factors Determining the Degree of Decentralization of Authority 314 / Recentralization of Authority 321 / Obtaining the Desired Degree of Decentralization 321 / Clarifying Decentralization 323 / Balance: The Key to Decentralization 328 / For Discussion 329 / Cases 330	
CHAPTER 15	COMMITTEES AND GROUP DECISION MAKING	333
	The Nature of Committees 334 / Reasons for Using Committees 337 / Disadvantages of Committees 340 / The Plural Executive 342 / Plural versus Individual Executive 343 / Misuse of Committees 345 / Successful Operation of Committees 346 / Other Groups in Managing 349 / For Discussion 351 / Cases 352 /	
CHAPTER 16	MAKING ORGANIZING EFFECTIVE	355
	Some Mistakes in Organizing 355 / Avoiding Mistakes by Planning 360 / Avoiding Organizational Inflexibility 361 / Avoiding Conflict by Clarification 362 / Ensuring Understanding of Organizing 365 / Summary of Major Principles for Part 3: Organizing 367 / For Discussion 370 / Cases 372	

PART 4 STAFFING

CHAPTER 17 NATURE AND PURPOSE OF STAFFING **377**

The Importance of Staffing **378** / What Does It Mean to Be a Manager? **379** / Rewards of Managing **379** / The Systems Approach to Staffing: An Overview of the Staffing Function **380** / Situational Factors Affecting Staffing **387** / For Discussion **392** / Cases **393**

CHAPTER 18 SELECTION: MATCHING THE PERSON WITH THE JOB **395**

Systems Approach to the Selection of Managers **396** / Position Requirements and Job Design **397** / Evaluating Managerial Positions **400** / Skills and Personal Characteristics Needed by Managers **402** / Matching Manager Qualifications with Position Requirements **404** / The Selection Process **407** / Orienting and Socializing the New Manager **411** / For Discussion **412** / Cases **413**

CHAPTER 19 APPRAISAL OF MANAGERS **416**

The Problem of Management Appraisal **417** / What Should Be Measured? **418** / Traditional Trait Appraisals **419** / Appraising Managers against Verifiable Objectives **423** / Appraising Managers as Managers **425** / Toward More Effective Appraisals **428** / For Discussion **429** / Cases **429**

CHAPTER 20 MANAGER AND ORGANIZATIONAL DEVELOPMENT **435**

The Need for Effective Manager Development **436** / Manager Development Process and Training **438** / Approaches to Manager Development: On-the-Job Training **440** / Approaches to Manager Development: Internal and External Training **442** / Organizational Conflict **444** / Organization Development **446** / Summary of Major Principles for Part 4: Staffing **451** / For Discussion **449** / Cases **453**

PART 5 LEADING

CHAPTER 21 MANAGING AND THE HUMAN FACTOR **459**

The Human Factor in Enterprises **460** / Models of People **461** / Creativity and Innovation **470** / Harmonizing Objectives: The Key to Leading **474** / For Discussion **474** / Cases **475**

CHAPTER 22 MOTIVATION

477

The Need for Recognizing Motivating Factors **478** / Motivation and Motivators **478** / Motivation: The Carrot and the Stick **481** / The Hierarchy of Needs Theory **481** / Alderfer's ERG Theory of Needs **483** / The Motivator-Hygiene Approach to Motivation **484** / Expectancy Theory of Motivation **486** / McClelland's Needs Theory of Motivation **488** / Patton's Identification of Managerial Motivators **490** / Special Motivational Techniques **491** / Job Enrichment **493** / A Systems and Contingency Approach to Motivation **498** / For Discussion **501** / Cases **502**

CHAPTER 23 LEADERSHIP

505

Leadership Defined **506** / Ingredients of Leadership **506** / Trait Approaches to Leadership **508** / Leadership Behavior and Styles **508** / Situational, or Contingency, Approaches to Leadership **515** / Leadership and Managing **522** / For Discussion **523** / Cases **523**

CHAPTER 24 COMMUNICATION

525

The Communication Function in an Organization **526** / The Communication Process **528** / Communication in the Organization **529** / Barriers and Breakdowns in Communication **537** / Toward Effective Communication **539** / Summary of Major Principles for Part 5: Leading **542** / For Discussion **544** / Cases **545**

PART 6 CONTROLLING

CHAPTER 25 THE SYSTEM AND PROCESS OF CONTROLLING

549

Two Prerequisites of Control Systems **550** / The Basic Control Process **551** / Control as a Cybernetic Technique **553** / Control as a Feedback System **554** / Real-Time Information and Control **554** / Feedforward Control **555** / Requirements for Adequate Controls **561** / Critical Control Points and Standards **563** / For Discussion **567** / Cases **568**

CHAPTER 26 CONTROL TECHNIQUES

570

Traditional Control Technique: The Budget **571** / Program Budgeting **577** / Making Traditional Budgetary Control Work **579** / Traditional Nonbudgetary Control Devices **580** / Improved Information Technology **584** / Procedures Planning and Control **589** / Time-Event Network Analyses **592** / For Discussion **597** / Cases **598**

CHAPTER 27 PLANNING AND CONTROLLING PRODUCTION AND OPERATIONS MANAGEMENT

600

Production and Operations Management **601** / Operations Management Systems **601** / Special Techniques Useful for Planning and Controlling Operations **606** / The Future of Operations Management **612** / For Discussion **613** / Cases **614**

CHAPTER 28	CONTROL OF OVERALL PERFORMANCE	616
	Budget Summaries and Reports 617 / Profit and Loss Control 618 / Control through Return on Investment 620 / Measuring and Controlling the Human Organization 625 / For Discussion 630 / Cases 630	
CHAPTER 29	INDIRECT CONTROL: ENSURING EFFECTIVE MANAGING	634
	Direct Control 635 / The Principle of Indirect Control 637 / Management Audit and Enterprise Self-Audit 639 / Management Audit 640 / The Enterprise Self-Audit 642 / The Challenging Task of the Manager 643 / Developing More Effective Managers 646 / Summary of Major Principles for Part 6: Controlling 650 / For Discussion 653	
	Glossary	654
	Indexes	669
	Name Index	
	Subject Index	