

CASES AND READINGS IN
PRODUCTION
AND
OPERATIONS
MANAGEMENT

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Cases and Readings in Production and Operations Management

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*To the memory of my parents,
Felix and Anna Latona
—Joseph C. Latona*

*To the memory of my parents,
M. L. and V. M. R.
—Jay Nathan*

Preface

The arguments about the most effective pedagogy for teaching theory or application are never ending. The real challenge has always been the actual application of production and operations management (P/OM) techniques to real-world problems. This book offers logical, case-oriented techniques for P/OM decision making and problem solving.

The cases and readings in this text embrace most of the major P/OM techniques. It is an integral part of Allyn and Bacon's operations management teaching/learning portfolio. The Introduction provides guidelines for students to analyze, prepare, and present their findings of quantitative cases. Following the Introduction are twenty-three cases and eight readings in the seventeen topic sections of this text. Each of the cases and readings is followed by discussion questions.

The cases describe real-world firms and situations utilizing various P/OM techniques to solve problems in all the functional areas of a business firm (i.e., management, production, marketing, finance, and accounting). The cases cover the major areas of P/OM; most are short (fewer than eight pages), and therefore provide the students with an opportunity to apply their knowledge of quantitative techniques in a climate of reasonable pace and positive reinforcement. All the cases are new to this book.

Applications of P/OM in both the private and public sectors are presented in the eight readings included in this text. These recent articles from academic journals represent applications of problems in P/OM ranging from flexible to traditional manufacturing. Many of the readings include complex topics that the authors worked on for a year or more to finalize the conclusions. The readings complement the case method in depicting how complex P/OM problems can be solved.

P/OM is a dynamic and exciting business tool that can be utilized in today's numerous opportunities in the business arena. This text provides the opportunity to use logic and rationality in making intelligent decisions in today's business climate.

JUST-IN-TIME CUSTOM PUBLISHING OPTION

All of the cases and readings in this volume are also available as part of the innovative Allyn and Bacon/Ginn Press Just-in-Time publishing program.

Through this program, instructors can create their own custom text by selecting chapters, cases, and/or readings from a database of Allyn and Bacon books, other published sources, and/or their own material. Contact your local Allyn and Bacon representative for details.

INSTRUCTOR'S MANUAL

Available to instructors who adopt this book is an Instructor's Manual, which provides solutions to the cases. Contact an Allyn and Bacon sales representative for details.

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J. C. L. and J. N.

Introduction

How to Analyze, Prepare, and Present a Case

While P/OM techniques have been implemented successfully many times, numerous projects have also ended in partial or complete failure. Several recurring problems that prevent success are (1) the inability to recognize the important problems, (2) difficulty in formulating the central problem, (3) the inability to visualize or understand the situation, (4) the inability to communicate with other managers and decision makers, (5) the failure to meet the assumptions of the quantitative techniques being used, (6) a lack of experience in working with “messy” data, and (7) a lack of experience in working in a complex organizational environment.

The case approach offers an excellent opportunity for students to employ P/OM in realistic situations. It also provides a number of advantages that are either impossible or difficult to realize using standard lectures alone. A few of the advantages of the case method are:

1. The chance to identify and isolate the real problem from symptoms and from trivial problems
2. Experience in developing one or more models that embody the essential elements of a particular situation or problem
3. Increased awareness of the organization and how it really functions
4. The ability to understand the impact of various environmental concerns—such as political, social, and legal systems—on the organization and the application of management science techniques
5. The opportunity to ask appropriate questions when formulating the problem and gathering relevant information
6. Experience in applying management science behavior
7. The ability to understand barriers that have blocked the successful application of quantitative techniques
8. The opportunity to identify and isolate qualitative factors that will have a significant impact on the application of quantitative analysis methods
9. The ability to think clearly in ambiguous and complex situations
10. The chance to develop recommendations and action plans that are consistent with the organization’s goals and creative in their problem-solving strategy
11. The opportunity to determine what information is required in applying one or more management science techniques in an actual setting

12. Practice in making verbal presentations and in discussing management science techniques in groups
13. Practice in writing formal reports that use management science to solve problems

ROLE OF STUDENT/ROLE OF INSTRUCTOR

In case analysis, the student is always the decision maker or the advisor. It is his or her responsibility to sift through the “givens,” make the necessary assumptions, and arrive at an acceptable set of alternative solutions. The instructor, on the other hand, usually serves only the role of monitor. Presumably, his or her background, experience, training—and access to the Instructor’s Manual—will enable him or her to guide the discussion to an appropriate conclusion. He or she also can provide a realistic appraisal of the suggested solutions.

THE CASE METHOD APPROACH

Almost any approach will work; for some, cases present little challenge or worry. For others, this will represent the most difficult part of business courses. A method of attack should evolve through class discussion and/or from the handouts on the format for writing up a case report.

Some Thoughts about the Case Method as a Teaching Method

1. The desired result of the case method is the ability to reason in dealing with problems in the area of the course. Thus, the stress is on the decision-making process and not on finding the “correct” solution, which is really nonexistent.

It cannot be overstressed that the decision-making *process*, not the *decision*, is the substance of the case method. In doing analysis for solving the case, one is not searching for the correct solution. Rather, the correctness of case analysis is only in its method of approach.

It is essential, therefore, that students—both in the preparation and through discussion—press to solve the problems posed by the case. Only when they do this will they develop their mental skills, which, like manual skills, improve with practice. An essential part of this process is to ask oneself pertinent questions.

Thus, “the maximum goal of the case method is the development of a mind which has superior ability to transfer its powers from familiar types of problems to new ones. Persons with such minds also need the power to explain to others what is going on, that is, to verbalize their thinking.”*

2. The cases used are *issue cases*, which call for a choice to be made among reasonable possible alternatives. It is necessary that cases of this type be used, as judgment is not needed unless a decision must be made. This decision-making process includes both the discovery and naming of the important considerations and the assignment of a weight to each consideration as to its significance in shaping the final decision. Through this process, we hope to prepare the student to accept responsibility for his or her actions and decisions, which usually involve other people.

*Raj Aggarwal, Mellon Chair, John Carroll University.

TO THE STUDENT

How to Analyze a Case

Each case is different, but you should begin to develop a method of analyzing a case that helps you analyze and reach a solution efficiently. The following generalized method is suggested as a starting point for you to develop your own.

1. Read the case rapidly to obtain an overall understanding of the situation. At this point, you may wish to note the key facts that appear to provide the context for the problem and possibly even to write an initial statement of what you believe the problem of the case to be.

2. Read the case more thoroughly, including a careful study of the exhibits and tables to identify the key facts in the case. These key facts should be listed in summary form as to their meaning. For example, "Retail margins are 18 percent" is a fact that conveys no meaning. If we add that "This represents a decrease in a margin from 25 percent, and as a result retailers are not providing much push," the fact of an 18 percent margin now has significance for our identification of the case problem and its solution.

3. State the central problem in the case. Frequently, additional sub-problems may need to be stated so that the scope and nature of the central problem is clearly identified. The definition of the problem is the most important step in the decision-making process; if you have not correctly identified the problem for the case, it will be impossible for you to solve it. There is considerable truth to the point that a problem well defined is more than half solved. You should continually review and restate, if necessary, the problem definition as you work on the subsequent steps of your case analysis.

In defining a problem, it's essential to distinguish between the symptoms of the problem and the problem itself. A common example used is the symptom of declining sales, which often is called the *problem*. The key facts you have obtained from a careful study of the case generally represent *symptoms*. Only rarely is the real problem stated in the case. Often an "erroneous" problem will be given, which, even if solved well, will not get the firm out of its difficulty. In fact, the firm may even be worse off, as attacking the real problem has been delayed.

Wasson, in his writing, urges that a distinction be made between the management action in question and the underlying issue that puts this action in question. A management-action question may be, Should management introduce its newly developed product? This question has no focus in that it does not help us decide what facts are needed. The underlying issue may be: Does this product offer consumers a significantly greater perceivable degree of satisfaction of some kind, at a price they consider fair? Now we have a direction as to what facts, concepts, and principles may have relevance to this issue.

At this and some later stages, you may want to go back to your notes and texts from the courses you have had in various functional areas. They will help you put the issues in focus.

4. Identify and state the alternative courses of action that are reasonable and feasible for this firm to consider as possible solutions for the problem. Usually, a firm may adopt several courses of action. It should be noted that one course of action may be to do nothing, that is, to make no changes from the present methods of operation.

5. Set forth the criteria you will use to evaluate the acceptability of these alternatives as solutions for the problem. This is very important.

6. Analyze each of the alternative courses of action, discussing the advantages and disadvantages of each with support.

In making your analysis, you may find it helpful to ask pertinent questions that will direct your investigation to the facts and information you need. Thus, you are forced to make certain assumptions. If you find that a course of action is crucial to your solution and that you have great uncertainty as to its validity, your recommendation may be that appropriate research be done to obtain the facts. If this is the case, you should be prepared to suggest what this research will cost and to defend the need for this expenditure. The comments in step 3 about supplementary reading apply here, too.

7. State your recommended solution, along with a well-organized defense of your selected alternative and the reasons for rejecting the other alternatives. Your analyses from step 6 should be most helpful in this presentation.*

How to Present a Case

After you analyze a case, you may be asked to present the case in a written report or verbally to the class. During your presentation, you have two overall objectives. First, you should inform your instructor and your classmates of the results of your case analysis. Here you will discuss the steps you completed during case analysis, including the formulation of the problem and the sub-problems, the identification of important variables, the objectives and the goals of the organization, constraints and restrictions to be considered, alternatives facing the organization, important assumptions, the quantitative technique or techniques employed, the input data for and solution from the quantitative techniques, how the solution was tested and analyzed, how the action plan was formulated, and suggestions for action plan implementation, evaluation, and maintenance.

Your second objective is to convince your instructor and classmates that your approach and action plan are the best. Here you will market and sell your ideas to others. You need to note other action plans you considered and reveal why yours is better and will help the organization discussed in the case to better obtain its goals and objectives while solving its inherent problems.

If you are preparing a written case, you should have a well-organized report. Although there is no one best way of organizing the written report, the following outline may be used as a model in preparing the major sections:

- I. Contents
- II. Summary of Findings
- III. Background Information
- IV. Problem Statement
- V. Analysis of Alternatives
- VI. Detailed Recommendations
- VII. Implementation and Evaluation
- VIII. Appendices

*Raj Aggarwal, Mellon Chair, John Carroll University.

In developing the written report, develop a draft and then revise it in producing the final written report. Before you write the draft, consider the level and needs of the reader, carefully organize and outline the report, and determine what you plan to say and how you will persuade others to accept your action plan.

When writing the draft, do the following: write quickly and without hesitation, not worrying about spelling or grammar; use paragraphs that contain only one or two major ideas; use familiar and simple words; support all statements with facts; and use forceful and convincing arguments. In revising the draft, check the organization of the paper to make sure it is logical and clear, correct and accurate, and free from grammatical errors and problems.

The same outline employed with the written report can be used for an oral presentation. When making an oral presentation, keep a number of points in mind:

1. Adequately prepare the case before class.
2. Keep an open mind.
3. Market and sell your ideas.
4. Incorporate outside experiences.
5. Listen to others.
6. Be brief.
7. Take an offensive position instead of a defensive position.
8. Listen to and learn from other students.
9. Be courteous and constructive.
10. Don't repeat yourself.
11. Don't repeat others.
12. Don't overemphasize one particular idea.
13. Avoid changing the topic suddenly.

By following these guidelines, you should have a successful experience with case analysis. You will also develop a set of problem-solving skills and communication techniques that will be valuable to you in any job. Good luck!

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