Eighth Edition

# Production and Operations Management

Manufacturing and Services

> Chase Aquilano Jacobs

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# Production and Operations Management Manufacturing and Services

Eighth Edition

Richard B. Chase University of Southern California

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F. Robert Jacobs Indiana University



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To our wives
Harriet, Nina, and Jeanne
and to our children
Laurie, Andy, Glenn, and Rob
Don, Kara, and Mark
Jennifer and Suzy

### Preface

Operations Management (OM) has seen many innovations in recent years, becoming a topic of critical importance in business today. Demands for business reengineering, quality, time-based competition, value-adding processes, and a global view have demonstrated that superior management of the operations function is vital to the survival of the firm. An understanding of OM strategy and its function is a necessary part of any good business education.

Operations Management should appeal to individuals who want to be directly involved in making products or providing services. The entry-level operations specialist is the person who determines how best to design, supply, and run the processes. Senior operations managers are responsible for setting the strategic direction of the company from an operations standpoint, deciding what technologies should be used, where facilities should be located, and managing the facilities that make the products or provide the services. Operations Management is an interesting mix of managing people and applying sophisticated technology. The goal is to efficiently create wealth by supplying quality goods and services.

The field of operations management ranges from high-tech manufacturing to high-touch services, so we have tried to balance the treatment of the manufacturing and service aspects. Operations management now requires a global perspective for many of the topics. Operations management is best done with significant cross-functional integration. Accounting, finance, marketing, human resources management, purchasing, logistics, and engineering impact how firms are run operationally. To highlight our emphasis on services, globalization, and cross-functional integration, we've used the logos you see here in the text margin next to these discussions. In addition, many references to World Wide Web sites are indicated with this special Internet logo.

Features to aid in your understanding the material include the following:

- Solved problems at the end of chapters to serve as models that can be reviewed prior to attempting problems.
- · Checkmarks next to problems that have answers in Appendix H.
- Breakthrough Boxes to demonstrate leading-edge companies or practices that are innovative and trailblazing.
- Excel® spreadsheet templates and data sets, which are included on the CD-ROM packaged at the back of each text.

Our aim is to cover the latest and the most important issues facing OM managers, as well as the basic tools and techniques. We supply many examples of leading-edge companies and practices. We have done our best to make the book interesting reading. We hope you enjoy it.









### ACKNOWLEDGMENTS

It is with a great deal of pleasure that we welcome Bob Jacobs to the authorship team. After seven editions over 25 years you don't make such decisions lightly. We had our own "Star Search" involving discussions with colleagues around the country seeking out the best of potential co-authors. Our criteria were tough. He or she needed to be on top of developments in the field, be a leader in the discipline, and enjoy writing and teaching. Bob filled these criteria to a T. In addition, he has significant business and international experience and teaches at a top-notch university, with a large and highly successful program in operations management. We are confident that his work on this 8th edition will enhance your learning of this fascinating and important subject.

Several very talented scholars have made major contributions to specific chapters in the book. We are pleased to thank the following individuals:

Dan Heiser and Doug Blocher for their help with Quality Management.

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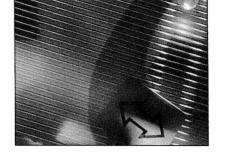
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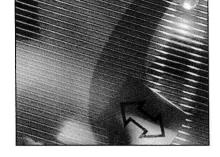
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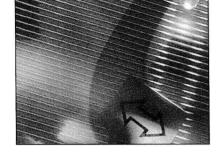
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