Operations Strategy
Principles and Practice

Second Edition

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Dr. Van Mieghem is the Harold L. Stuart Distinguished Professor of Managerial Economics and Professor of Operations Management at the Kellogg School of Management of Northwestern University. He serves as the Academic Director of the Executive MBA Program. Previously he served as Senior Associate Dean of the Kellogg School and as chairman of the Managerial Economics and Decision Sciences department. He teaches courses in operations management and operations strategy in MBA, Ph.D. and executive programs and advises firms on those topics.

His research focuses on manufacturing, service and supply chain operations. His articles have appeared in leading journals, including *Annals of Applied Probability, Journal of Economic Theory, Management Science, Manufacturing and Service Operations Management* and *Operations Research*. He is past editor of the operations and supply chain area of *Operations Research* and has served on the editorial board of several journals.

Professor Van Mieghem is the co-author of the MBA textbook *Managing Business Process Flows: Principles of Operations Management*. He received his Ph.D. from the Graduate School of Business at Stanford University in 1995. Born in Belgium, he currently lives in Evanston, Illinois, with his wife and four children.

Gad Allon

Dr. Gad Allon is Professor of Managerial Economics, Decision Science, and Operations Management at the Kellogg School of Management at Northwestern University. He received his PhD in Management Science from Columbia Business School in New York and holds a Bachelor and a Master degree from the Israeli Institute of Technology.

His research interests include operations management in general, and service operations and operations strategy in particular. His articles have appeared in leading journals, including *Management Science, Manufacturing and Service Operations Management* and *Operations Research*. Professor Allon won the 2011 Wickham Skinner Early-Career Research Award of the Production and Operations Management Society. He is the Operations Management Department Editor of *Management Science* and serves on the editorial board of several journals.

Professor Allon teaches courses in operations management and operations strategy in MBA and executive programs. Professor Allon won the 2009 Outstanding Professor of the Year Award at Kellogg, the 2014 Alumni Professor of the year, and was recently named among the Worlds Top 40 B-School professors under the age of 40. Professor Allon regularly consults firms both on service strategy and operations strategy.
This book explains the principles of operations strategy and describes how companies can apply these principles in practice to increase value. Designing and implementing a successful operations strategy require judgment, experience, creativity, and luck, all of which cannot be taught. What can be taught, however, are the concepts, principles, and tools to help you in that process—and therein lies the purpose of this book.

“Principles and practice” is my guiding motto throughout this book. Going beyond telling war-stories, my goal is thus to describe the practice of operations strategy while revealing its driving principles in a structured manner. I am writing under the assumption that we—which in this book means you, the reader and I, the writer—seek to build sound intuition for designing, assessing, and improving operations strategies. I believe that sound intuition results from a journey of logical analysis that culminates in a theory. Good theory gives you intuition into the familiar, and beyond.

Each chapter opens with a description of how a real company practices some aspect of operations strategy and then reviews the concepts behind that practice. Tools are provided to analyze the concepts, distill their principles, and suggest guidelines for implementation and improvement. When appropriate, state-of-the-art research findings are integrated in the discussion. Each chapter closes with a mini-case that asks you to explore how you would apply the principles and tools in practice. The last part of the book contains a set of “full-blown” cases to integrate the chapters and emphasize the relevance of our topic to practice.

To increase accessibility, most analysis is described in words and is exhibited with minimal notation and mathematics. For example, equations are stated only if they capture a relationship better than words alone can. To increase usefulness and illustrate implementation, a particular example of each analysis is worked out in a spreadsheet (all spreadsheets can be downloaded from www.vannieghem.us). More advanced analysis or spreadsheet implementations are relegated to appendices for those who are interested.

Though we are interested in designing good operations strategies, strategy evaluation is as much art as it is science. We will adopt a dual perspective that combines qualitative analysis with a financial evaluation of the value created by the operations strategy. Throughout this book, value will thus be our yardstick and our guide to assess and improve operations strategy. Merging the strategic and financial perspective should be natural to the intended reader:

I have written this book with a specific focus on MBA and engineering management students, and on their instructors. I hope that the structured approach
of using analysis to build intuition and reveal improvement levers within a co-
herent framework facilitates learning and instruction. While the book naturally
follows a core course in operations and supply chain management and adopts
basic financial evaluation, all concepts are explained “from scratch” to make the
book accessible to every business or engineering management student. The book
should also be of interest to consultants and practitioners as a reference for con-
cepts, principles, and tools.

According to Francis Bacon, “writing makes an exact man.” While a valiant
goal, operations strategy is not an exact science. Nor is there an agreed-upon
paradigm for its study, let alone agreement on what exactly “is part” of opera-
tions strategy. Given these constraints, this book reflects my best effort to struc-
ture concepts and principles in a unified framework for operations strategy. Like
any good operation, however, this really is a process of continuous improve-
ment. It never ends, as better ways always exist. If you have any suggestions for
improvement, I welcome hearing about them.

Jan Van Mieghem (Jan@VanMieghem.us)
July 13, 2007

CHANGES IN THE SECOND EDITION

This second edition contains changes along various dimensions. First, Pro-
fessor Allon has joined this ongoing book project as second author. In 2010, Gad
started teaching the MBA elective course, Operations Strategy, that Jan began de-
signing and teaching in 1998. Second, while the first edition followed a “leading
strategy,” in the sense that it contained material that hadn’t been taught yet, this
second edition reflects how our MBA elective course has evolved over the last 7
years. It thus contains “class-room tested content.” These two changes led to a
new chapter 2; majorly revised chapters 1, 3, 4, 5, 6, and 7 and appendix A; and
minor revisions of the remaining chapters.

While we believe significant progress has been made, this book project re-
mains a process of continuous improvement. It never ends, as better ways al-
ways exist. If you have any suggestions for improvement, we welcome hearing
about them.

Jan Van Mieghem and Gad Allon
July 11, 2014
ACKNOWLEDGMENTS

This book results from the MBA elective course, *Operations Strategy*, that I began designing and teaching in 1998. It reflects the experience and knowledge of the colleagues, teachers, and managers that I have worked with. I have also benefited greatly from the experience, suggestions, and questions of the many MBA and executive students that I have interacted with; while I was teaching, I was learning even more.

Many people have helped me while writing this book. I would especially like to acknowledge the following people:

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I am particularly indebted to the organization that has graced my business card for the last 12 years—after all, this book would have never seen the light of day without the Kellogg School of Management. I am also thankful for the hospitality of the Katholieke Universiteit Leuven during my sabbatical in 2005, when half this book was written.

Finally, and most importantly, I would like to thank my lovely wife, Shannon Cahill, for her unwavering support during this project and so many others. She managed the family with a smile, even during my extensive absence during the last months of this project. It is done at last!

Jan Van Mieghem (jan@VanMieghem.us)
July 13, 2007

SECOND EDITION: ADDITIONAL ACKNOWLEDGMENTS

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Jan Van Mieghem and Gad Allon
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# Capabilities, Competition and Operations

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One of the Community's priorities in its future operation strategy with Angola is therefore to assist in the improvement of the management of public finances. The EU institutions should also develop a clear operation strategy with the SECI European Centre for Combating Transborder Crime (located in Bucharest), and more important support should be given to the development of state border and state customer services.