

# OPERATIONS STRATEGY

*Principles and Practice*



JAN A. VAN MIEGHEM

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*Waar een wil is, is een weg*  
Mama en Papa

To Shannon and our future:  
Maximiliaan, Katherine, Marcus and Karolien

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His research focuses on manufacturing, service and supply chain operations and studies both strategic questions as well as tactical execution. 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.

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# PREFACE

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.vanmieghem.us](http://www.vanmieghem.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 coherent 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 concepts, 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 operations strategy. Given these constraints, this book reflects my best effort to structure concepts and principles in a unified framework for operations strategy. Like any good operation, however, this really is a process of continuous improvement. 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*

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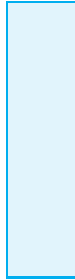
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Jan Van Mieghem



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