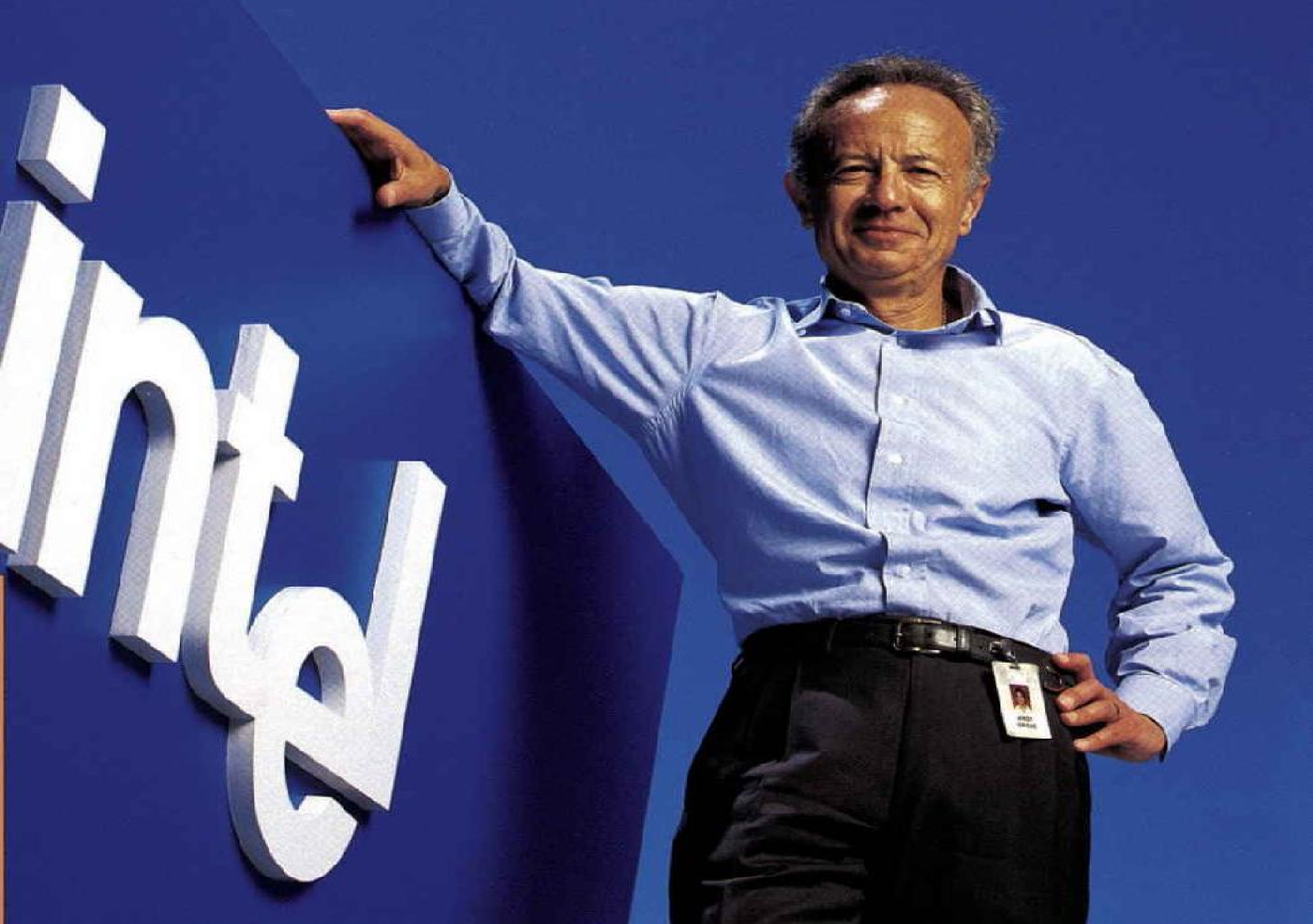
# HIGH OUTPUT MANAGEMENT

WITH A NEW FOREWORD BY BEN HOROWITZ




ANDREW S. GROVE

Former Chairman and CEO of Intel

"An organizational Baedeker for managers at all levels. . . . A highly credible handbook for organizing work and directing and developing employees."
—*The New York Times*

Andrew S. Grove

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Andrew S. Grove emigrated to the United States from Hungary in 1956. He participated in the founding of Intel, and became its president in 1979 and chief executive officer in 1987. He was chosen as *Time* magazine's Man of the Year in 1997. In 1998, he stepped down as CEO of Intel, and retired as chairman of the board in 2004. Grove taught at the Stanford University Graduate School of Business for twenty-four years. He lives in the San Francisco Bay Area.

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VINTAGE BOOKS
A Division of Penguin Random House LLC
New York

VINTAGE BOOKS EDITIONS, 1983, 1995, 2015



Grateful acknowledgment is made to *Fortune* magazine for permission to reprint "Why Training Is the Boss's Job," from the January 23, 1984, issue of *Fortune.*

The Library of Congress has cataloged the Random House edition as follows:
Grove, Andrew S.
High output management
Bibliography: p.
1. Industrial management. I. Title.
HD31.G764 1985 658.5 84-40529

Vintage Trade Paperback ISBN 9780679762881
eBook ISBN 9781101972366

www.vintagebooks.com

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# Acknowledgments

The ideas in this book are the result of a collective effort—my collaboration with many, many Intel managers over the years. I am very grateful to all of them, because I learned everything I know about how to manage from them. I am especially grateful to Gordon Moore, one of the founders of Intel, who recognized the budding manager under my engineer's skin long before I had any inkling myself.

Thanks are also due to a group of the company's middle managers who cheerfully accepted the role of guinea pig, who suffered through my first attempts to articulate these ideas, and who also generously provided me with experiences from their daily lives as managers. I've used their examples to illustrate certain points in the book. These managers are acknowledged by name in the Notes.

I owe special thanks to Grant Ujifusa, my Random House editor, who tirelessly hammered away at the rough edges of my ideas and prose and translated the latter into English—from the original engineeringese; to Pam Johnson, who ran the various revisions through the word processor; and most of all to Charlene King, my assistant, who not only helped to pull the whole project together, from capturing class discussions to gathering illustrations, but also made sure that I did my work of running Intel even as I was busily splitting infinitives.

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# Introduction

*I. What happened after 1983*

I wrote this book in 1983. It was the result of twenty years of managerial work during which I learned a variety of ways to make things take place more effectively. What I learned were the basics of managerial work, particularly as they pertained to middle managers. More than a decade has passed since, but I find that most of the things that were useful then are still useful now; the basics of management remain largely unaffected.

However, two critical events took place in the 1980s that altered the environment in which we managers do our work—and this made me realize that an updated Introduction to this book was necessary. Those events were the Japanese memory onslaught and e-mail.

Let me explain their implications.

By the mid-eighties, the Japanese producers of Dynamic Random Access Memories, or DRAMs for short—the most popular computer memory devices, used in computers of all kinds—had perfected their technological capability and honed their manufacturing prowess to the extent that they could take on the American producers (who had pioneered the market and totally dominated it for the first fifteen years of its existence). The mid-eighties were also when the personal computer revolution took place. And because personal computers require a lot of memory, the Japanese DRAM juggernaut had a ready market for its products centered in the United States. Everything was primed for an attack.

Intel, where I work, was one of the companies that got caught up in this assault. In fact, Intel was one of the early producers of DRAMs. More than that, in its earliest years, we had practically the whole market to ourselves. However, by the mid-eighties, competition both from the United States and, increasingly, from Japanese manufacturers whittled down our share of the market. Under the ferocious attack of aggressively priced, high-quality Japanese DRAMs, we were forced to retreat and cut prices to a level where being in the DRAM business brought us major losses. Ultimately, the losses forced us to do something extraordinarily difficult: to back out of the business that the company was founded upon, and to focus on another business that we thought we were best at—the microprocessor business.

While this adjustment sounds quite logical and straightforward in theory, in reality its implementation required us to move and redeploy a lot of our employees, let some of them go, and shutter a number of factories. We did all this because under this strong attack, we learned that we must lead with our strength. Being second best in a tough environment is just not good enough.

Ultimately, we—Intel and the U.S. semiconductor industry—prevailed over the onslaught of the Japanese manufacturers. Intel grew to become the largest semiconductor manufacturer in the world, and U.S. manufacturers recently surpassed their Japanese counterparts overall. Nevertheless, in retrospect it's clear that this assault was just one wave of a much larger tide —the tide of globalization.

Globalization simply means that business knows no national boundaries. Capital and work—your work and your counterparts' work—can go anywhere on earth and do a job.

Some of us are fortunate to be residents of a country, the United States, that enjoys one of the highest standards of living. The U.S. market for goods and services is the largest in the world. And until recently, it has been easier to supply that market from inside the United States than from abroad.

Today, many markets outside the United States are growing faster than markets inside the U.S. And the domestic market can be supplied from anywhere in the world. For example, I recently bought a Gore-tex jacket from Patagonia (the clothing manufacturer, not the region in South America), and I saw that it was made in China: American brand, American technology (the high-tech fabric was invented and made in the United States), and assembled to the specifications of the reseller (Patagonia) in a foreign country.

The consequence of all this is very simple. If the world operates as one big market, every employee will compete with every person anywhere in the world who is capable of doing the same job. There are a lot of them, and many of them are very hungry.

Another consequence also follows. When products and services become largely indistinguishable from each other, all there is by the way of competitive advantage is *time.* And that's where the second critical development of the eighties comes in—e-mail.

Just as the Japanese DRAM attack was the first wave of a much greater tide, e-mail is also the first manifestation of a *revolution in how information flows and how it is managed.*

The informed use of e-mail—short for computer-to-computer electronic messaging—results in two fundamentally simple but startling implications. It turns days into minutes, and the originator of a message can reach dozens or more of his or her co-workers with the same effort it takes to reach just one. As a result, if your organization uses e-mail, a lot more people know what's going on in your business than did before, and they know it a lot faster than they used to.

Let me interject a bit of irony. Back in the eighties, when the Japanese seemed invincible, one explanation advanced for their ability to act quickly and decisively was the way Japanese offices were set up. In a Japanese office, a manager and his subordinates all sit around a big long table. People work on their own assignments but when they need to exchange information, everybody they work with sits within speaking distance, right around the same table. So information is exchanged in minutes and everybody can be reached with the same effort. As a result, because of the ease with which Japanese office workers communicate, they have, in fact, been slow to embrace electronic mail.

But now the pendulum is swinging in the other direction. As businesses become more widely spread out around the globe and as time becomes the key competitive weapon, American organizations are often better positioned than their Japanese counterparts. Why? Because the same ease of communication that prevailed by natural means in the Japanese office now effectively travels around the world through electronic means.

And e-mail is only the first wave. Everything today is going to a digital format: sound, photos, movies, books, financial services. And everything