

"Filled with colorful characters
and inspiring lessons . . . *The
Idea Factory* explores one of
the most critical issues of our
time: What causes innovation?"

—Walter Isaacson,
The New York Times

THE IDEA FACTORY

Bell Labs

and the



Great Age of American

Innovation

Jon Gertner

A NEW YORK TIMES BESTSELLER

Praise for *The Idea Factory*

"One of the best innovation-focused books . . . a wide-ranging, detailed, and deeply fascinating look at the New Jersey lab which has been churning out useful discoveries since the early 1900s." —*The Boston Globe*

"*The Idea Factory* is an expansive treatment of the labs' history. . . . Gertner wisely chooses to focus his story on a handful of compelling narratives, such as the invention of the transistor. The tensions among the three nominal inventors, Walter Brattain, John Bardeen, and William Shockley, have been chronicled often. But Gertner's version is especially well told." —*Los Angeles Times*

"[A] wonderful history of the most influential corporate-research lab the world has seen . . . Gertner does a super job of making complex science intelligible to the lay reader. He frequently evokes a sense of awe at how this army of scientists made a reality of what even for them was often unthinkable." —*The Economist*

"Fascinating history . . . The research behind *The Idea Factory* is astonishing." —*Slate Book Review*

"An expansive new history . . . does an impressive job of illuminating many of Bell Labs' key technological triumphs." —*Wired.com*

"Gertner is an astute analyst who avoids whiz-bang conceptions of technological innovation. . . . At his best, Gertner captures the excitement of being around a place where new ideas are being forged." —*Foreign Policy*

"A paean to the unheralded men behind this bygone age of innovation." —*The Washington Post*

"Assured, hugely enjoyable . . . On these pages, Gertner makes the science engage, the politics bruise, the treachery shock, the failures sting. He is a gifted translator of the research; he welds a novelist's touch with character." —*The Cleveland Plain Dealer*

"Remarkably well-researched . . . lucidly written." —*The Seattle Times*

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Introduction

WICKED PROBLEMS

This book is about the origins of modern communications as seen through the adventures of several men who spent their careers working at Bell Telephone Laboratories. Even more, though, this book is about innovation—about how it happens, why it happens, and who makes it happen. It is likewise about why innovation matters, not just to scientists, engineers, and corporate executives but to all of us. That the story is about Bell Labs, and even more specifically about life at the Labs between the late 1930s and the mid-1970s, isn't a coincidence. In the decades before the country's best minds began migrating west to California's Silicon Valley, many of them came east to New Jersey, where they worked in capacious brick-and-glass buildings located on grassy campuses where deer would graze at twilight. At the peak of its reputation in the late 1960s, Bell Labs employed about fifteen thousand people, including some twelve hundred PhDs. Its ranks included the world's most brilliant (and eccentric) men and women. In a time before Google, the Labs sufficed as the country's intellectual utopia. It was where the future, which is what we now happen to call the present, was conceived and designed.

For a long stretch of the twentieth century, Bell Labs was the most