

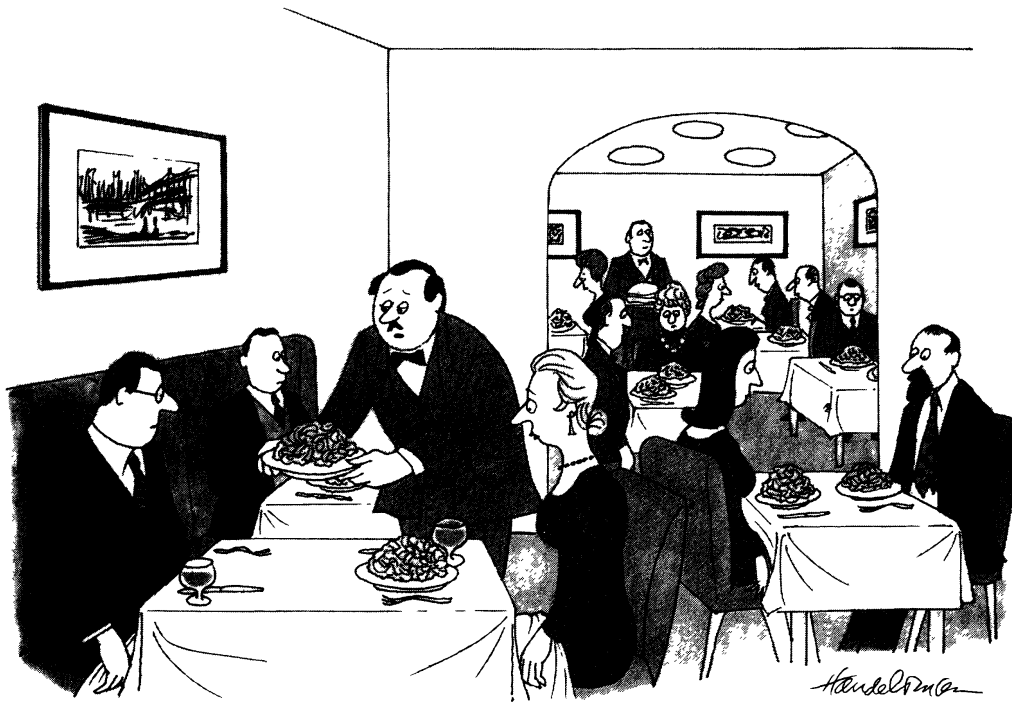


The Trouble *Computers*

*Usefulness,
Usability,
and
Productivity*

Thomas K. Landauer

The Trouble with Computers



“Sorry, folks—it’s not what you ordered, but everyone is getting fettuccine until we fix the computer.”

Drawing by Handelsman; © 1993 The New Yorker Magazine, Inc.

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Thomas K. Landauer

A Bradford Book
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For Lynn and Libby

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Preface

We see computers everywhere but in the productivity statistics.

Attributed to Robert Solow

I started doing research and prototype development with computers about fifteen years ago at Bell Laboratories. Before that, I'd done psychological research on human learning, memory, and thinking. I belonged to a department called Human Information Processing Research. Along with many others, I was captivated by the idea that computers offered a technology that could finally underwrite the kinds of power tools for human minds that motors have provided for our hands. It seemed but a matter of doing it to turn the extraordinary advances in computer hardware and software into devices that would help people think, remember, plan, communicate, express themselves.

Although I'm still at it, two things led me to a rather different view of the venture and to this book. First, my colleagues and I found it much harder to make computer aids that were significantly helpful than we had anticipated. For example, when we tested our first invention, a computerized reference manual that was obviously marvelous, we found that students did better with the original paper book. Second, a talk by sociologist Paul Attewell of NYU alerted me to the disappointing news that economists were having trouble showing that information technology contributed positively to productivity.

It seemed these two things might be related.

Around the same time, the late 1980s, I was a member of the Committee on Human Factors of the National Research Council and of a working group that was looking into the contributions that human factors