

CHAPTER 2: PRODUCTIVITY PARADOX

“Always remember that someone, somewhere, is making a product that will make your product obsolete.”

– Georges Doriot

It may seem odd that we wait this long in the book to explain the theory on which it is based. You needed to understand some basics, before you can even glimpse the big picture.

TELL ME WHY . . .

I sometimes ask my students why they are taking my course. Some mumble something about it being required, or that it is a prerequisite for the course that they *really* wanted to take. Some take it for fun; others seem to be taking it for spiritual reasons. But when pressed, the masses converge on a shared mantra: “In today’s economy, you have to know computers, if you want to get a job, with good pay, and professional advancement . . .”

. . . to which I reply, “Balderdash!” or some equally colorful phrase. This common fallacy impedes your proper education.

Let’s get this straight, right now: You *will not* get hired because you understand computers. You *will not* get a raise because you understand computers. You *will not* get promoted because you understand computers.

You *will* get hired, you *will* get a raise, and you *will* get promoted because you are productive. Computers, and desktop applications in particular, are tools for increasing productivity—nothing more, nothing less.

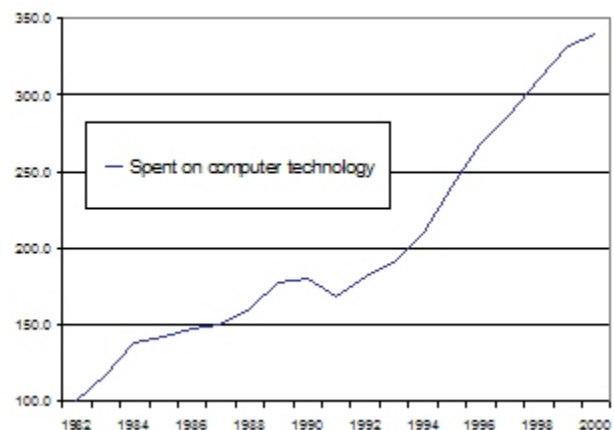
THE PROMISE

Maybe you got a computer to play games, or as a gift. Maybe you got one because everyone else had one. Businesses though, are another story. However many reasons people have to buy a computer, firms have only one: to increase the productivity of their workers. You can’t swing a cat without hitting a PC, because increasing productivity is one goal of every manager.

Desktop technology promises to increase productivity, not by 3 percent, not even by 30 percent, but by 300 percent—or more. That is an astonishing claim. It’s possible.

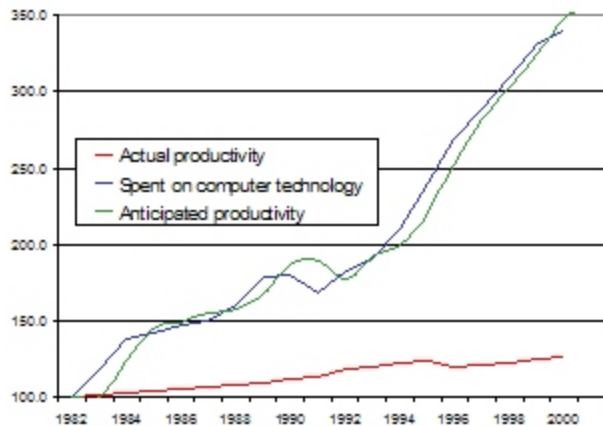
THE REALITY

If we were to graph the expenditures companies have made since 1982 on desktop computing—PCs, printers, mice, monitors, software, training, books, floppy disks, and so on—what would that graph look like?



THE PARADOX

Now, if corporate spending on computers is skyrocketing every year, and the only reason that they buy computers is to increase productivity, then productivity in America must be skyrocketing, too, right?



Whoops! But that's not all. If you examine the post-war era, productivity seemingly has been unaffected by the adoption of desktop technology. Even factoring in the size of the investment—only 3 to 5 percent of the nation's capital equipment—even if you discount the promises of triple-digit increases in productivity, something is clearly wrong. This gap between what clearly is and what should be is sometimes called the Productivity Paradox.

DEFINING PRODUCTIVITY

One problem is how one defines productivity. In economics:

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

Thus, if a firm produces 100 widgets one day, and the next day, it produces 200, we would say that productivity had doubled. Likewise, if one day it produced 100 widgets, and the next, it produced 100 widgets in only half of day, we would also say that productivity had doubled, *ceteris paribus*.

Unfortunately, this definition does not account for quality—making a better widget. In manufacturing, this is not usually an issue, because parts are done to specifications and quality is incremental.

Desktop technology, though, results in quality improvements that are neither. In our economy, where less than 20 percent of the GNP is generated by manufacturing, that matters.

Consider word processing. We know from numerous communications and marketing studies that document aesthetics plays an important role in the way text is read, recalled, and understood.

In its simplest form, word processing is merely an analogue for typing, producing documents that are essentially indistinguishable from those produced by a typewriter. In its most complex form, word processing can produce highly complicated documents, using desktop publishing techniques such as headers, footers, graphics, lines, paragraph formatting, exotic fonts, and so on. Obviously, it takes a lot more time, even for the very accomplished computer user, to design and compose an attractive document than it does for the typist to merely type the text.

If one person can type 30 documents per day, and another produces only ten, using desktop publishing, one might say that the first person was three times as productive as the second. Nonetheless, if the design significantly contributes to the degree that the text is read, understood, and recalled, what does this mean about productivity?

Technology can dramatically improve quality—which is particularly important in our service economy—but quality's effect on productivity is not easily reduced to a cost-benefit analysis. We risk confusing effectiveness with efficiency. Computer technology can improve effectiveness, it can improve efficiency, and it can do both simultaneously. Still, when effectiveness comes *at the expense of efficiency*, it appears that productivity suffers. We will return to this idea a little later.

CAUSES


There are many reasons for the Productivity Paradox. Some are complex, some aren't. Here are some that we will address in this book:

- lack of training or bad training;
- focus on keystrokes instead of systems;
- computer viruses;
- “ignorance of the possible”;
- computer and network crashes; and,
- computer-related health problems.

LACK OF TRAINING

Before Windows[®], PCs primarily used an operating system called Microsoft[®] Disk Operating System (MS-DOS[®]).

DOS programs were often excellent, but users required intense training to perform even simple tasks.

Already in your Windows® background, you know that clicking the  in a program's Title Bar will close that program. This works for all Windows® programs.

Before Windows®, there was no Common User Interface. You had to memorize instructions for each program. For example, to close Lotus® 1-2-3, v. 2.1, the premier DOS spreadsheet of its day, you had to type:



To exit WordPerfect 5.1, the leading DOS word processor, you tapped:



How would you know? How would you guess? You wouldn't. You had to memorize each command of each program separately.

And then came Windows®, which supposedly eliminated all that tedious memorization. Many companies saw Windows® as a way to drastically reduce—or even eliminate—computer training. Nothing could be more shortsighted! Without training, you can figure out how to do some basic things, but you are almost certainly not going to learn the most productive way. Although Windows® has greatly reduced rote memorization, there are a handful of things that must be memorized.

Second, the introduction of the mouse and the GUI was a breakthrough, but they resulted in many bad habits. Instead of sitting down and learning how to do something, people often just poke around the pull-down menus until they stumble upon what they are looking for. This is the antithesis of productivity!

COMPUTER VIRUSES

Computer viruses cost companies dearly. On average, six new computer viruses are introduced daily. Any one of them can be a killer. A virus attack can cost your firm thousands of dollars, plus uncountable hours of time spent in repairing their damage.

Even worse is the fact that companies and individuals spend a great amount of time dealing with virus hoaxes. We will address these issues in Chapter ?.

IGNORANCE OF THE POSSIBLE

Most users remain simply unaware that of most features, much less understand how and why to use them! Earlier we noted that productivity is not easily measured when we cannot quantify quality. One approach to this problem is to analyze the trade-offs between effectiveness and efficiency. This has a certain academic appeal, but it assumes that a trade-off exists.

That is not necessarily the case. Because most people are unaware of what is possible, they are unaware that existing desktop technology can create seemingly complex documents at least as efficiently as typing a simple document. Technology has changed the notion of complexity—but only for those who understand its possibilities.

COMPUTER CRASHES

Let's smash the myth that computer crashes of one kind or another are normal, an inevitable "cost of doing business." They are not! Computers are supposed run like your automobile—to work, to work reliably, and to work all the time, in widely varying circumstances. They are not supposed to crash.

But . . .

But, just as your car needs fuel, periodic oil changes, new tires and air filters, so your computer needs to be maintained and periodically tweaked to keep it in tip-top shape. Most people are oblivious to the proper methods for maintaining their system, backing up their data, and addressing the most likely causes of poor performance and system crashes. You needn't be an automotive engineer to maintain your car, and you needn't be a computer scientist to maintain your PC.

"Imagine if every Thursday your shoes exploded if you tied them the usual way. This happens to us all the time with computers, and nobody thinks of complaining."

- Jeff Raskin, Doctor Dobb's Journal

There are huge direct costs associated with computer failures, measured by the technical support and the lost time due to frittering away the hours—five minutes here, ten minutes there—trying, however futilely, to make the machines work. According to a 1997 survey of 400 PC

users in medium-sized and large companies in Europe by SCO and Harris Research, each user lost up to three weeks of working time a year tackling technology problems on his or her desktop, due to PC malfunction or misuse. On average, each employee surveyed wasted 100 minutes a week during the first month a new system is introduced.

There are also significant hidden costs, such as the sense of powerlessness, frustration, and stress that result from the inability to control one's working environment.

COMPUTER-RELATED HEALTH PROBLEMS

Stress isn't the only human component of the Productivity Paradox. According to the Bureau of Labor Statistics in 1997, computer-related maladies such as stress, Carpal Tunnel Syndrome, vision problems, and various musculo-skeletal ailments cost business \$30 *billion* per year in lost wages, lowered productivity, physical therapy, and medical bills. Most of these problems are cumulative. That is, the effects build up over time. The long-term consequences can be devastating!

Paradoxically, at a time when run-away health costs are giving corporate accountants angina, efforts to prevent computer-related health problems are almost non-existent in the workplace, even though they are cheap and easily implemented. We will examine these issues in Chapter 4.

THE TASK AT HAND

There are many ways to do things in Windows[®]. Beginners often assume that one way is as good as another. This is a fundamental error! How you do it *does* matter!

This book stresses a simple, but vital idea: For most common tasks, you must master two methods: one with your hands on the keyboard, and one with your hand on the mouse. Learning only the keyboard method or only the mouse method is foolish because it directly undermines productivity, and productivity is the very reason—the *only* reason—we do this.

A FINAL THOUGHT ON TOOLS

A saw is a tool, but owning one does not make you a carpenter. A hammer is a tool, but if you don't know about nails, it won't help you build a house.

**"An idiot with a computer is
a faster, better idiot."**

- Rich Julius

So it is with computers. If you don't know how to write, a wordprocessor will, at best, enable you to pour out drivel a little faster. If you are mathematically challenged, a spreadsheet will produce answers, all right, but they will be all wrong. If you don't know how to solve a problem, all the tools in the world won't help you.

Sadly, the usual methods used by schools to include technology in the curriculum often displaces other vital elements of the pedagogy, producing faster, better idiots.

NOTES