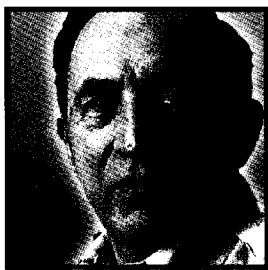


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THE REAL COSTS OF PCs



The average cost of ownership of a PC has finally made the headlines. Recently, *Fortune Magazine* quoted the annual cost of PC ownership at more than \$9,000, *The Economist* at \$6,400, *The New York Times* at \$13,000 and *BusinessWeek* at \$8,000.

The most frequent source of these numbers is Gartner Group, Inc., which will oblige with estimates that range from \$7,138 to \$13,000.

The sudden interest is because of the prospect of a \$500 network computer displacing a \$2,500 PC.

For senior executives contemplating network computers and PCs, these conflicting numbers are bound to cause confusion. A typical Fortune 1,000 corporation with an annual information technology budget of \$200 million is likely to have about 10,000 PCs.

If you take the highest Gartner numbers and the low-ball claims of \$2,500 for the cost of ownership of a network computer, you have a hypothetical cost reduction of \$105 million for that company.

If you prefer *The Economist*, you could argue that there is only \$34 million in savings.

Whatever number you choose, to deliver intranet-run network computers, this company would need, by my estimate, at least \$60 million worth of new development money to extricate itself from a fully implemented client/server architecture.

That represents a full year's development and maintenance cost.

Taking these average cost figures at face value can lead to fiscal disaster.

Concocting hypothetical savings based on mythical costs is a surefire way for network computer-minded chief information officers to get into real trouble.

The fact is that PC ownership costs are driven by how people work and how they are managed. These factors make "average cost of ownership" a meaningless abstraction.

I saw this in 1991 when I commissioned a study of 32 PC LANs while I was CIO of the U.S. Department of Defense. I found the "average cost" per LAN ranged from \$3,500 to more than \$60,000 per seat.

Clearly, there was no such thing as an average cost for personal computing.

INFLUENCES ON PC OWNERSHIP

There are two major influences that determine the cost of PC ownership: workload and management practices. Both are shaped by the customers, technology and applications.

Customers: The occupational profile of employees drives computing demand. Professionals devour computing capacity, whereas craft labor hardly uses any.

The penetration of computing will also vary. It's extremely high with engineers and the accounting types but much less with technicians and salespeople. Mobile workers require less computing than sedentary number crunchers. Computer literacy also matters.

Employee turnover places enormous burdens on support staffs for hand-holding, training, error correction and equipment relocation.

For instance, the Bank Administration Institute reports a

50% turnover rate among consumer credit officers. That staggering instability must surely increase the costs of all support.

Technology: Technology architecture and adherence to standards also influence costs. The choice of identical versions of applications and operating systems greatly simplifies diagnostics and network maintenance. Liberal Internet access is a killer, especially on network capacity. Without central configuration controls over equipment and software, one can easily double the staff at the help desks. Most importantly, there are enormous economies of scale in central network administration costs. The statistics of queuing theory will always favor large networks over small ones.

Applications: The failure of application software is perhaps the most severe cause of all customer dissatisfaction. Some of it comes from poor design, insufficient testing of maintenance and excessive permissiveness of local operators to fool around with features and options.

Removable disk drives that allow users to insert private software increase the workload for everyone. Strict enforcement of security procedures and controls may cost as much as \$1,000 per PC per year.

Although customer, technology and application characteristics can easily account for thousands of dollars of additional expense for a PC, poor management explains most of the difference between low and high costs. You don't need network computers to reduce desktop ownership costs. All it takes are users and technicians who are reasonably competent at what they do.

Sophisticated network management systems mean very little if nobody takes the time to assist a few chronically incompetent PC users. Tutoring and assistance are needed to reduce computing costs, not just technological fixes.

Making users, as well as IS, accountable for costs is essential to offer the right inducements for cost reduction and continuous quality improvement.

You can't manage PC costs by going after average costs. Average travel time doesn't tell much about traffic jams. Likewise, there's no such thing as an average cost benchmark for the cost of PC or network computer ownership.

The costs of PC networks will differ for every firm because personal computing reflects the unique characteristics of how a firm manages its computers. I've counted 30 possible PC expense drivers, each of which can increase ownership costs if managed poorly.

The only way to reduce costs is to uncover the primary causes of poor choices, neglectful practices and dysfunctional computing behavior.

Paul Strassmann (paul@strassmann.com) works on a PC he bought for \$2,356. At his consulting rates, the monthly cost for recovering from crashes, hanging on the phone with vendor help desks and deconflicting incompatible software exceeds the purchase cost.