Total Cost of Ownership(TCO)

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Introduction

The materials presented here on Total Cost of Ownership are clippings from the links listed at the bottom of this page. For more on this topic, check out any of these sites.

Defining TCO:

Total Cost of Ownership (TCO) is defined as all of the possible costs incurred in the life cycle of a workstation, from acquisition to disposal. There are direct cost and indirect cost.

The cost of ownership of networked workstations is an important issue facing many organisations which have extensive networks and a large number of personal computers. For many years, the focus has been on the purchase price/performance of personal computers. However various surveys by major consulting groups such as the Gartner and Forrester Group indicate that the initial purchase price represents only between 20 and 25% of the total cost associated with owning a PC over its lifetime.

Direct Cost
For the direct cost, there are seven key cost components that contribute to the TCO:

- **Hardware Acquisition** - purchase of user's computer equipment
- **Software Acquisition** - purchase or license of software for each user
- **Installation** - cost borne by owner or charged by the vendor to install computers
- **Training** - cost borne by owner or charged by the vendor to provide training to users, including a portion of the user's time spent in training
- **Support** - cost borne by Information Systems Department support areas, Help Desk, and Distributed Systems
- **Maintenance** - costs to replace or upgrade user's computer equipment, vendor's maintenance contracts, supplies, Disaster Recovery
  costs — the average life of even the most advanced system is just five years.
- **Infrastructure** - costs to acquire, maintain and support the Local Area Network environment and specialized equipment shared
  by department staff

HARDWARE should include (but not be limited to) Desktops and mobile computers, Servers , Peripherals, Network communications equipment (hubs, routers, bridges and switches, etc.), Memory, Storage devices, CDROM drives, UPS devices, 'Cards' of any kind, Cabling

SOFTWARE should include (but not be limited to) new and upgraded software for any client computers, servers, peripherals and communication devices, operating systems, and off the shelf application software such as word processors, spreadsheets, etc.

Indirect Cost

Indirect cost includes the following:

- Downtime
- The futz factor .... Read More
- Retrofitting. If you are building a new network, keep in mind the costs of upgrading electrical systems, cooling systems, and ventilation.
- Overhead

TOC Breakdown

A "typical" set of ratios of costs for 5 years for networked workstations is:

- Capital Costs 21%
- Technical Support 21%
- Administration Costs 13%
- End User Support 45%

Below is a graphic representation of the Gartner group and the Forrester Research reports on Total Cost of Ownsership:
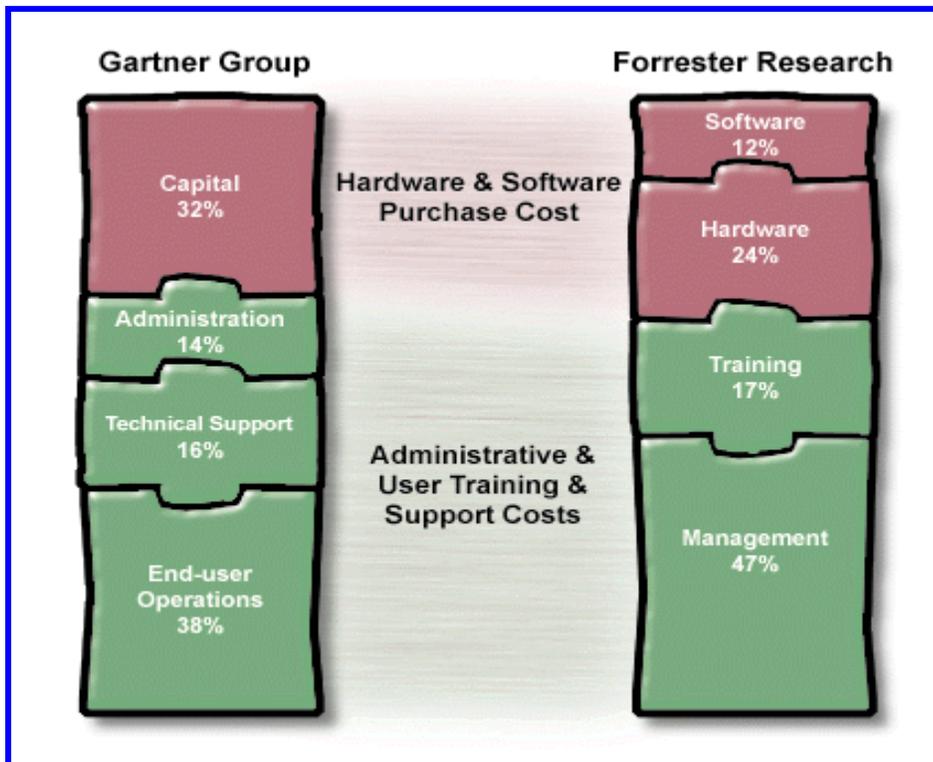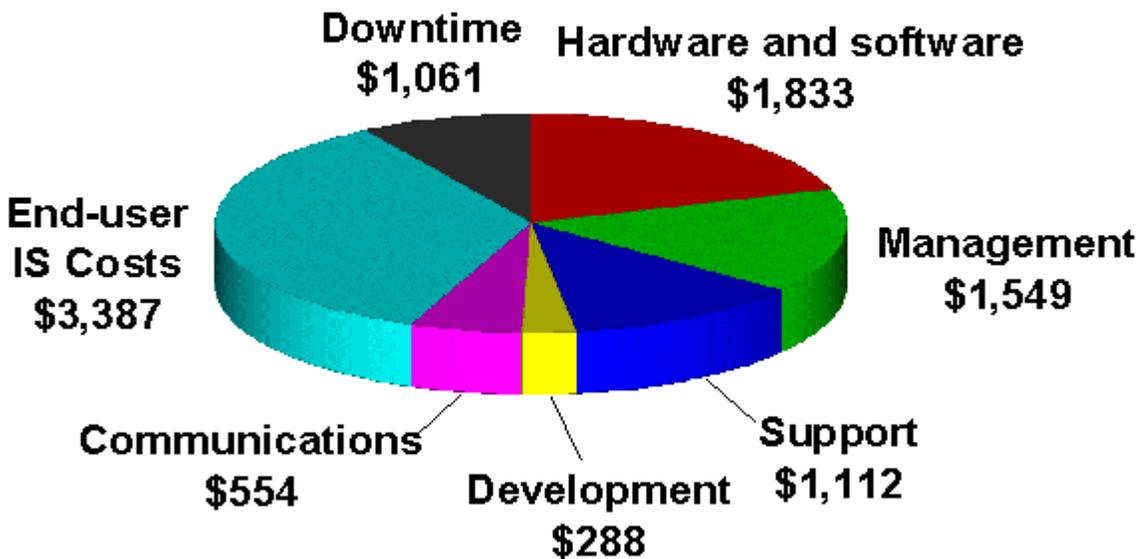

The following chart also gives the dollar breakdown of TOC. The cost given below is for a typical window 3.1. network with 2,770 desktop clients, 350 labtops, 50 Netware, 3 servers, 613 printers, 180 hubs, and 32 routers. The current average is around $10,000 per PC per year (... read more), as the breakdown below shows:

Typical Cost Allocation
Total: $9,748 Per Year

Downtime $1,061

Hardware and software $1,833

End-user IS Costs $3,387

Management $1,549

Communications $554

Development $288

Support $1,112

Typical Windows 3.1 network with 2,770 desktop clients, 350 laptops, 50 NetWare 3 servers, 613 printers, 180 hubs and 32 routers

Federal Technology Service

Many of the costs discussed in this paper are intangible; you don't see the money in your checkbook ledger. But they are real. Corporations use averages from $5,000 to over $10,000 per PC per year when they analyze their TCO for bottom line calculations. As explained by the Fujitsu Computers Ltd, the Gartner Group has stated that a typical enterprise with 2,000 PC's currently spends an average of $19M per annum in direct and hidden costs for computing - that is $9,500 per PC. Smaller firms may have an on-site technician or administrator full-time, at an average cost of $50,000 per year, or may have part-time or service company techs available. In another TCO estimate for firms of less than 50 users, the average for a PC is $2,000 per year. Thus a 15-user network costs, on the average, $30,000 per annum, including all the factors listed above.

Conclusion

Total Cost of Ownership should be calculated by all institutions, both educational and commercial. Even a single PC has cost factors associated with it and one must be aware of the effect of purchasing on the total cost of ownership. At the very least, using an average cost per computer, like $2,000 per year, will give a manager the means to plan for expenses and allow comparisons in the decision-making process.

Useful Links to TOC materials

http://gartner11.gartnerweb.com/public/static/software/rn/00031136.html

http://ids.csom.umn.edu/faculty/kauffman/courses/8420s98/Project/TCO/TCO_top.htm

http://www.alpinecsi.com/Home98.nsf/unIDs/JWAK-3WCLQT

http://www.utopiaplace.com/research/whitepapers/total_cost.html

http://www.ncs.com/ncscorp/network/owner.htm

http://www.worldpointinc.com/articles/tco.htm

http://www.computerworld.com/cwi/story/0,1199,NAV47-68-85-1942-1966_STO42717,00.html

http://www.itworld.com/Man/2817/ITW3487/

http://www.jaekel.com/white3.html

http://am.net/amcomput/tco.htm