

Technology Strategies for Non-Profit Leaders

THE TCO COMPANION

Wondering what some of the input values on the TCO calculator mean? Let our companion guide walk you through each value step by step to ensure your result is as accurate as possible...

The purpose of this article, and the associated analysis tool, is to help you gain real knowledge of everything that goes into a TCO calculation and then help you analyze what the actual number is for your organization.

First, you have to take into account both DIRECT and INDIRECT costs. Some of the information may be difficult to find; we've provided some industry averages for those instances.

DIRECT costs are relatively easy to obtain. You should know from experience, or by talking with your accounting department, what your total salary costs are, and how much you spend buying hardware and software. Your accounting department will also have information on how much depreciation is being charged to your or your user departments on your IT capital items.

INDIRECT costs are always difficult to ascertain. It is virtually impossible to track how much time your end users spend fixing their computers in one way or another, unless you get everyone in the company to keep detailed timesheets (and that's counter productive in itself!). For your indirect cost calculations, you may need to rely on your best estimate, or use the sector averages that we provide.

Review the information below for details on what items are included in each calculation. Then, turn to the analysis tool on your resource disk to calculate the TCO for your organization.

ORGANIZATION STATISTICS

Before you start gathering detailed cost information, there are three simple pieces of information you need to know:

1. How many PERSONAL COMPUTERS (PCs) do you have in your company?

You should attempt to get this number with as much accuracy as possible. Take into account ONLY those computers that are accessed by end users, and do *not* include PCs that are functioning as servers of any kind. This number should include any laptops used by staff, as well as any PC equipment used by internal IT staff.

2. How many end users of PC's are there in the company?

This is not necessarily the same number as in question 1, as a computer may be shared between more than one end user *or* an end user may have more than one computer system.

3. What is the average PC end user's salary?

You'll almost certainly have to get this number from your accounting department. You want to know what is the average salary of everyone in the agency who uses a computer, including all the executives, all the managers and all the program staff. It's very unlikely that you have detailed salary information on all employees at your fingertips, so accounting will probably give you their estimate. As with all statistical information, this needs to be as accurate as possible, but not EXACT to the nearest cent.

HARDWARE AND SOFTWARE - DIRECT COSTS

Hardware and software costs are the annual expenditures associated with all purchases of client, server, network and peripheral devices and any related software products. This category is for hardware and software expenses only and does not include any labor fees. It is essential to involve accounting and purchasing in accumulating the information for this category.

4. How much do you spend on hardware expense purchases in an average year?

Use the past 12 months of expenses on hardware to give you a reasonable idea of what you spend. Remember, however, that most large hardware purchases are generally counted as capital rather than expenses, and this question should ONLY be answered with expense items. Capital items are included in line 6.

HARDWARE should include ALL (but not be limited to) of the following items:

- Desktop and laptop computers
- Servers
- Peripherals (scanners, printers, digital cameras, etc.)
- Network communications equipment (hubs, routers, bridges and switches, etc.)
- Memory (extra RAM purchased)
- Storage devices (i.e. Zip drives, tape drives, CD drives etc.)
- Uninterrupted Power Supply (UPS) devices (i.e. back-up power sources/batteries for your PC)
- 'Cards' of any kind (sound cards, video cards, network interface cards, etc.)
- Cabling (to connect to internet, to network computers)

5. How much do you spend on software expense purchases in an average year?

Use the past 12 months of expenses on software to give you a reasonable idea of what you spend. Remember, however, that most large software purchases may be counted as capital rather than expenses, and this question should ONLY be answered with expense items. Capital items are included in the depreciation line of question 6.

SOFTWARE should include ALL (but not be limited to) of the following items:

- New & upgraded software for client computers, servers, peripherals & communication devices
- Operating system software
- Off the shelf application software such as word processors, spreadsheets, etc. (*This should NOT include the costs for any internally developed software, as this is covered in a later calculation.*)

6. How much is your annual depreciation on hardware and software capital purchases?

Your accounting group will supply you with the depreciation charges for large hardware and software purchases. Depreciation typically uses a three-year, straight-line schedule for hardware and software. Occasionally, certain hardware items are depreciated over longer periods, but this should be checked with your internal accounting group.

7. How much do you spend annually on computer supplies?

Include the annualized expenses for all computer supplies used throughout the organization, such as diskettes, CD-ROMs, tapes for tape drives, print cartridges or toner, and other general disposable supplies.

8. What are your annual hardware and/or software lease costs?

This should include any lease fees for hardware, software or supplies, if applicable.

MANAGEMENT AND STAFF – DIRECT COSTS

Now it's time to figure out how much you spend on the people who manage your computer networks. The salary information should be as accurate as possible, and you should not worry about 'burdening' in overhead costs, as the analysis tool automatically calculates this. Just use total compensation, consisting of base pay plus any bonuses that employees may receive over the course of the year. If you expect to give raises during the year, include the appropriately prorated amount in the base salary.

9. What is the total salary for each of the following categories (including management staff)?

If you have multiple offices with remote employees, they should be included in these figures. Everyone who is part of the internal IT staff within your organization should be in one of the following groups. If there are people in other departments (such as program staff) who spend a percentage of their time working on IT issues, then their prorated salaries should also be included in the appropriate category.

Note that in the analysis tool, salaries are automatically increased by a 30% burden to cover insurance, benefits and accommodation costs.

Help Desk Personnel

This includes all the people who staff your help desk, and all associated managers.

Systems Administration Personnel

This includes all personnel involved in keeping your computer systems, applications & peripherals up & running.

Network Administration Personnel

This includes all personnel involved in keeping your networks up and running.

Internal Training Personnel

If you have dedicated internal training resources who allocate some or all of their time to providing IT training to in-house staff, they should be included in this category.

IT Purchasing Personnel

Most mid-sized agencies don't have dedicated purchasing agents, but you should include a proration for personnel who are involved in the acquisition of IT equipment.

General End-User Support Personnel

Include cost information for any administrative staff that is involved in IT Infrastructure support, such as a receptionist or secretarial staff.

Other Infrastructure-Related Personnel

Anyone who works for the IT Infrastructure group who doesn't fit easily in the above categories should be included here.

10. What are your annual travel costs for all of the above personnel?

If any of the IT Infrastructure personnel travel during the year for job-related reasons, include all travel and accommodation expenses in this category.

11. How much do you spend annually on consulting fees and/or professional service fees relative to infrastructure and operations?

A number of agencies use specialized consulting staffs for project or task-related reasons during the year. Any such expenditures should be grouped into this category.

12. How much do you spend annually on outsourcing any of your IT operations?

If you outsource any of your IT operations, such as using an Application Service Provider (ASP) to provide any of your IT services, use this category to record the costs.

13. How much do you spend annually on training for your IT Infrastructure personnel?

You have already accounted for any internal training staff activities in your response to question 9; do NOT include them in this category. However, if you send your personnel to external training, or if you use an external resource to develop or deliver training courses for ANY use within your personnel or end-user community, include the costs in this category.

14. How much do you spend annually on maintenance contracts for your PC equipment?

If you outsource the maintenance of any of your PC equipment, then you should include the annual fees in this category. If you pay these fees on a one-time basis for multiple years, you should amortize the one-time fee during the analysis period.

DEVELOPMENT – DIRECT COSTS

Since we have already covered hardware purchases in a previous section, development costs consist of the annual labor and fees for the production and maintenance of all applications (i.e. staff time spent customizing or developing software applications, website, database, etc.). There are two categories of applications to consider:

Business Applications

These programs are primarily used by end users conducting the main business of the organization. These typically include such applications as accounting, payroll, inventory, and human resources.

Infrastructure Applications

These programs don't directly impact the business of the agency, but support the system infrastructure. They include systems management, communications software, database software and office-productivity suites.

Note - Some personnel may fit into more than one of the categories. If so, prorate their time to each category.

15. How much do you spend annually on salaries in the following *new* application development areas?

Any entries in this category should include only those staff members who are working from scratch to design completely customized software applications or solutions tailored to your agency (i.e. a database creation). Don't include time spent customizing already existing applications as those will be accounted for in Question 16. Also, don't burden in overhead costs, as they're automatically calculated in the TCO tool. Just use total compensation. If you expect to give raises during the year, include the prorated amount in the base salary.

Design

Any staff member who gathers user requirements, defines specifications, & prototypes a project (i.e. functional design of a donor management database).

Development

The personnel involved in the production of the code for a project (i.e. the one who actually "builds" the database).

Testing

The personnel involved in the development of QA testing plans and the execution of the testing.

Documentation

The personnel involved in configuration control and technical writing for applications.

16. How much do you spend annually on salaries in the following existing application maintenance areas?

The categories here are identical to those in the 'new' application development in question 15. This category covers those personnel involved in the maintenance of existing applications, rather than the development of new ones (i.e. customization of an MS Access database).

17. How much do you spend on consulting fees and/or professional service fees for development efforts?

This category should include any fees paid to external organizations or individuals for any design, development, testing, or documentation work done in conjunction with new or existing projects (i.e. database consultation).

COMMUNICATIONS – DIRECT COSTS

This category covers all annual expenses for voice and data communications lines and usage.

18. How much do you spend annually on leased lines?

Simply put, how much do you spend on phone or dedicated Internet lines? This includes monthly, recurring costs for phone lines, DSL, or cable hookups related to your computing environment. Please note that this only includes the physical wiring & phone company costs, not the Internet Service Provider fees (we'll account for those in the next question).

19. How much do you spend annually on remote access communications?

In other words, what are your internet-related costs? These will likely include web-hosting fees, Internet Services Provider (ISP) fees, and remote access capability fees (so your staff can dial into your network from offsite).

20. What are your annual Wide Area Network costs?

This includes any long distance or monthly usage charges incurred in using your client/server network.

INDIRECT COSTS

Indirect costs are those IT-related expenses that are not budgeted and invariably are unaccounted for by most organizations. The largest area within this category is typically the self-support and peer support of end users. The activities performed by end users include debugging their own systems when errors occur, backup and restoration of valuable data files, file directory maintenance, casual computer learning during the work day, and end-user programming of minor (or major) applications.

There is no really accurate way to measure how much time end users spend on IT-related tasks without detailed timekeeping or statistically valid surveys. Since many of us don't have the time or resources to conduct lengthy in-house surveys, we have provided some industry standards as guidelines in the appropriate categories.

END-USER IT – INDIRECT COSTS

21. How many hours annually does the average PC user spend on computer-related training?

When introducing a new end user to the agency computer systems, there is often time spent on in-house training. Similarly, whenever a new application is introduced to the organization, all the end users need to go through some kind of training and familiarity program. These and other training times belong in this category.

Our research has indicated that 40 hours per year is a reasonable number to use if you are not sure, but this can be modified as required.

22. How many hours annually does the average PC user spend on local file maintenance, end-user self-support, and end-user scripting of applications?

Time booked in this category includes activities such as setting up an electronic file structure to organize files on a computer, troubleshooting questions on the computer, self-teaching, or doing end-user customizations of a program. Examples of end-user scripting include designing queries or reports in agency database software, recording macros to optimize work in desktop applications, setting up rules in an email inbox, and so on. This is the most difficult number to estimate without detailed studies and surveys. Our research has indicated that 40 hours per year is a reasonable number to use if you are not sure, but this can be modified as required.

DOWNTIME – INDIRECT COSTS

23. How many hours per month of end-user productivity do you lose due to planned or unplanned system and network downtime?

Downtime expenses are a measure of the annual losses in productivity when end users cannot perform their jobs as planned due to the unavailability of their computers. This can be for a variety of reasons, such as:

- Waiting for resolution of a help-desk problem
- A planned or unplanned system down event
- Unavailability of one or more programs
- Server problems causing denied access to necessary data

Our research has indicated that 2 hours per month is a reasonable number to use if you are not sure, but this can be modified as required.

Comparison

After you have answered each question on the following analysis tool with information about your organization, the annual Total Cost of Ownership for each of your PCs will be calculated and displayed. The current average is around \$10,000 per PC per year...how do YOU compare?