Staffing for Technical Support

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OVERVIEW

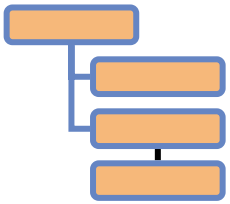
Technology staffing can be a challenge for nonprofits. You need technical services to support your mission, but technology is not often a core competency. As a result, your technology needs may be understaffed, inconsistently supported, or even overstaffed. This paper distills NPower NY's interactions with multiple organizations, large and small, and offers advice on key questions about technology staffing.

KEY QUESTIONS

1. HIRING - Should you hire someone dedicated to technical support? If so, for what tasks?
2. MANAGING - Do you need a manager or a technician? Can one person be both?
3. GROWING - When should you add to your existing technical staff?
4. COPING - Can your program staff help as "accidental techies?"
5. SOURCING - When might external suppliers be worth considering?
6. SPENDING - How much is reasonable to spend on technology support?

Several of these questions apply to all organizations, whether small, medium, or large. Others may or may not be applicable. Figure 1 will help you decide which questions are most pertinent for your organization.

Figure 1

						
	HIRING	**MANAGING**	**GROWING**	**COPING**	**SOURCING**	**SPENDING**
SMALL ORGANIZATIONS	**Your 1st Technical Hire**			**By Choice or by Default?**	**Alternatives to Hiring**	**Right-Sizing Your Technical Support**
MEDIUM ORGANIZATIONS		**Directing Technical Staff & Vendors**		**By Choice or by Default?**	**Alternatives to Hiring**	**Right-Sizing Your Technical Support**
LARGE ORGANIZATIONS			**Enterprise Technology Planning**	**By Choice or by Default?**	**Alternatives to Hiring**	**Right-Sizing Your Technical Support**

1 – HIRING

YOUR 1ST TECHNICAL HIRE

A small nonprofit may get technical support from a patchwork of arrangements: accidental techies[1] on the program staff, technically savvy volunteers, warranty support from hardware vendors, and free on-line training or phone-support from software companies. If your organization fits this description, how can you assess whether it would be beneficial to hire a full-time staff member dedicated to technical support? NPower NY recommends a three-step decision process.

Current Costs First, assess how much time the members of your program staff expend as accidental techies. (Appendix A has an example of a simple survey you could use.) Express the result as the number of full-time staff equivalents (FTE). For example, if each member of a ten-person staff spends five hours per week doing incidental technical support for themselves and others, then the total of 5 X 10 = 50 hours exceeds one FTE, assuming a 40-hour work-week.

Future Benefit Next, estimate the benefits of freeing your program staff from technical support. Staff members are usually more productive when they devote their time to program work. Moreover, when an expert supports your staff's technology needs, problems may be solved more quickly and your technologies may run more efficiently. Try to estimate these gains and calculate the total benefit in FTEs.

Decision As depicted in Figure 2, the possible outcomes are hiring dedicated technical support, contracting full-time or part-time support from a supplier, or continuing current arrangements. When making your decision, you may find it helpful to consider several options described in the section on Sourcing and example budgets in Appendix B. NPower NY has helped many non-profits negotiate these issues and can offer practical advice.

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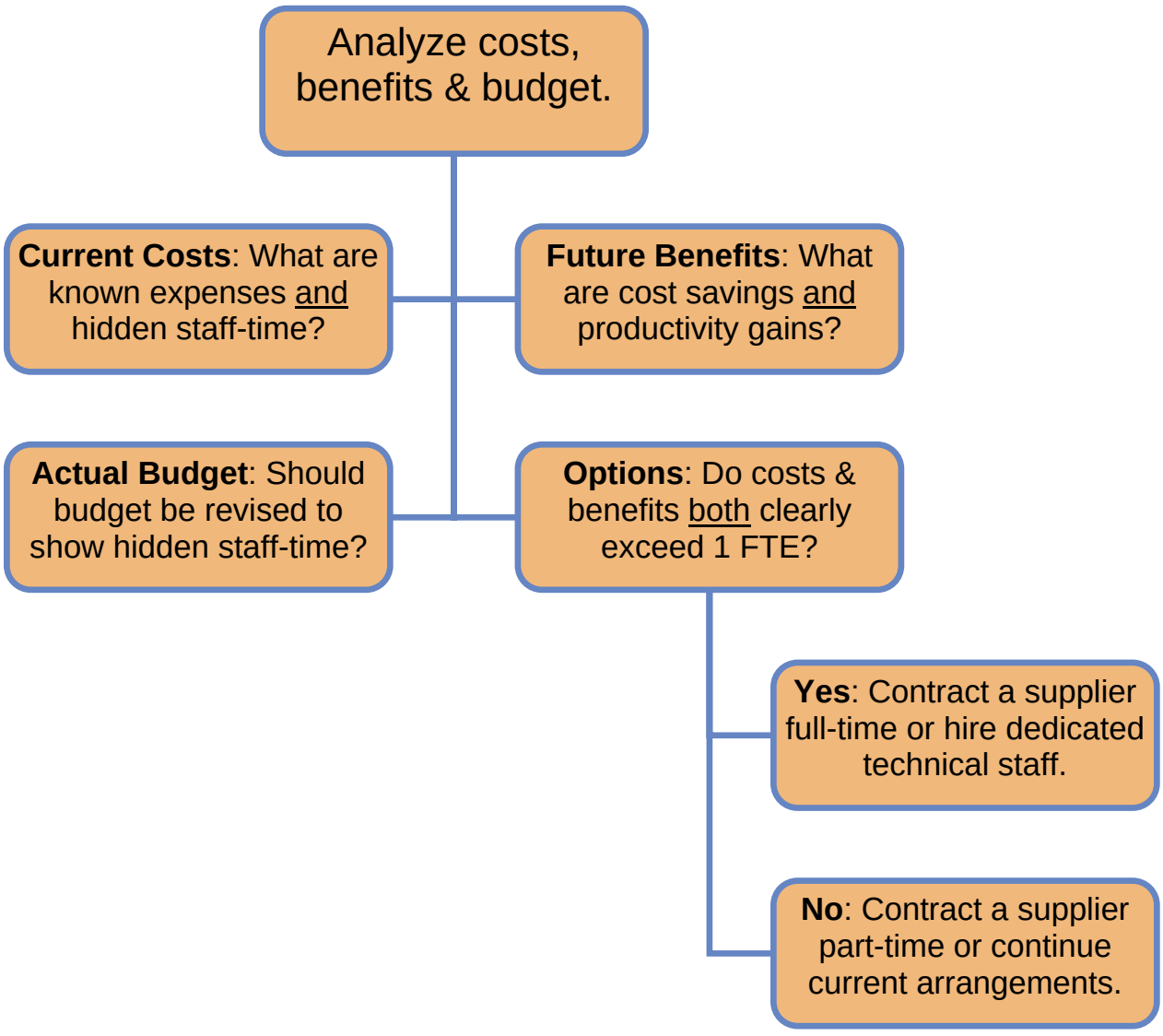
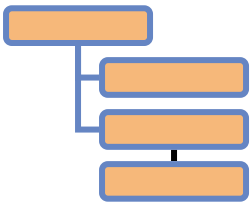
[1] An "accidental techie" is a member of the program staff who provides technical support in an area where she or he happens to have expertise, possibly gained on the job. See the section on Coping. The term was coined by: Bennett, S. *The Accidental Techie: Supporting, Managing, and Maximizing Your Nonprofit's Technology*. http://www.compasspoint.org.

Figure 2


Analyze costs, benefits & budget.
Current Costs: What are known expenses and hidden staff-time?
Future Benefits: What are cost savings and productivity gains?
Actual Budget: Should budget be revised to show hidden staff-time?
Options: Do costs & benefits both clearly exceed 1 FTE?
Yes: Contract a supplier full-time or hire dedicated technical staff.
No: Contract a supplier part-time or continue current arrangements.



2 – MANAGING

DIRECTING TECHNICAL STAFF & VENDORS

For a medium-sized organization or a small one that is growing, technical support may come from multiple sources, including full-time staff dedicated to technology, accidental techies on the program staff, and external vendors contracted to support particular applications or devices. The key question in this circumstance is how to direct the technical operations efficiently.

As a special case, some organizations hire a technical director with a dual role: the sole person dedicated to on-site technology support and the on-staff manager responsible for oversight of external technical vendors. This ambivalent assignment may have disappointing results.

NPower NY's experience suggests that in this medium range, organizations need to be aware of several options and pitfalls.

Managerial Skills Finding a person with a good blend of technical skills and managerial finesse can be hard. Some people with strong technical credentials make poor managers, if given responsibilities beyond the hands-on work. Others who are more technical can become good managers, if given suitable training. The chief mistake is to hire based on technical skills for a position that truly requires management of technical staff and external vendors. If the job is to oversee other staff or vendors, look for managerial skills first.

Technical Skills The technology field is awash with specialized applications, vendor-specific solutions, and professional certification programs. Which ones fit the needs of your organization? You, as a program leader, probably don't know the answer and would have great difficulty learning it. The good news is that you may not have to. Often, the best strategy for hiring technical staff is to seek people who love technology, are willing to learn, and are committed to your organization's mission. They will learn what's necessary, and enjoy doing so, even if they are new to your specific technologies on day one. Conversely, the chief mistake is to define a technical job narrowly and only seek someone with deep experience in that area. It may seem right, but it often doesn't last.

Career Paths If your organization hires full-time technical staff, it may be difficult to keep them. More generous salaries from commercial employers may become enticing, particularly if the technical assignments within your organization are stagnant. Most technical people appreciate the challenge of learning new skills; few enjoy the routine of fixing the same problems repeatedly. Thus, a way for your organization to improve the career paths of your technical staff – and their longevity in your service – is to afford them the training and opportunity to handle new applications and "next generation" technologies. Allowing them to take off-site training on new technical skills may boost their productivity within your organization and could be more cost-effective than having them learn on-site by trial-and-error. Older technologies and more routine tasks might be delegated effectively to external vendors or to junior staff such as recent graduates of NPower NY's Technology Service Corps.

Vendor Management Using external vendors to some extent can be advantageous for most nonprofits, particularly medium-sized organizations. Vendors can fill gaps in the technical expertise of your resident staff - they can manage tasks your own experts find uninteresting and they understand the specific skills necessary to support a particular technical niche. (See NPower NY's white paper, "Selecting the Right Technology Vendor," for additional advice.)

3 – GROWING

ENTERPRISE TECHNOLOGY PLANNING

For medium-to-large organizations, staffing is part of a more complex process of planning for efficient use of technologies. In contrast to smaller organizations, larger nonprofits are less likely to rely on accidental techies. They are more likely to have both managers and technical specialists on staff and to use multiple external technical vendors. Further, they may seek advice on technological strategy from established consulting firms. Those with the greatest technical maturity will weave technology decisions into the fabric of their organization's strategic planning. As medium-sized organizations grow, their technology planning should mature, incorporating processes such as the following.

Staffing Thresholds The size of an organization is typically correlated with the magnitude of its needs for technology support. For example, in an organization that averages two hours of technical support per desktop per month, each increment of 80 desktops is a threshold for adding an FTE of technical support. Other examples of staffing thresholds might be the number of network locations per network administrator or the number of clients served per database administrator. By periodically comparing actual support levels vs. planned thresholds, the organization can plan whether and when to add technical staff.

Unit Cost Management Suppose, at a threshold of 80 new desktops, your organization adds one person for desktop support. Your new costs for technology include much more than one FTE. You have also added 80 desktop computers, software on each computer, more networking, storage capacity for 80 employees' email and data, plus phones and possibly shared gear such as printers. Called direct costs, these tangible expenses show up as bills to be paid. One way to manage them is to calculate a unit cost. For example, employed staff could be the units. You would track the average unit cost of technology per employed staff member. It's simply the total of all direct costs for hardware, software, networking, technical support FTEs, phones, and shared gear, divided by the total number of staff. Depending on your organization's mission, you might prefer other units, such as the technology cost per client served or per dollar donated.

Application Focus As larger organizations evolve toward integrated computing applications, their technical staff focuses relatively more on applications to support the core mission and less on computers, printers, and phones for the local office. Examples of such applications might include integrated management of client and donor data, or enterprise software that merges accounting, human resources, and project tracking into one system. As the focus shifts to applications, the expertise of the technical staff must shift accordingly. Doing so may necessitate re-training current staff or hiring for new skills.

Technology Governance In an organization with multiple departments or multiple locations, different users will have different technology needs. Balancing these needs requires a governance process. What group prioritizes technical projects - deciding which projects to start and which to defer? Does the same group decide how the technical staff are allocated to projects and applications? Does it monitor unit costs, service quality, and project status? How often does the group meet? These questions are the province of technology governance. They highlight that in larger organizations, technical staffing is interlinked with other matters requiring systematic and collaborative oversight.

4 – COPING

BY CHOICE OR BY DEFAULT?

Most nonprofits, even large ones, may have some accidental techies – program staff who, perhaps without specific intentions, have acquired technical skills that enable them to support the organization's technological needs. While there are good reasons to value and even to encourage this kind of incidental technical support, there are also reasons to be cautious.

Potential Value Accidental techies can reduce an organization's needs for full-time technical staff, filling niches that might otherwise be neglected or expensive. What's more, because they are committed to the organization's mission, accidental techies may be skillful in perceiving and resolving the technical issues that matter the most. If they enjoy occasional technical challenges, their overall productivity, satisfaction, and creativity on the job may rise.

Reasons to Be Cautious Alternatively, if technical support becomes a burden or distraction for them, accidental techies may become less productive in their program work. Frictions may develop if non-technical staff have higher expectations for collegial technical support than the more technically inclined members of the group are able or willing to fulfill. Perhaps the most common problem occurs when primary program duties overwhelm secondary technical responsibilities. Technical support, half-done by a person with the best of intentions, is frustrating for everyone – the non-technical staff whose needs are unmet and the accidental techies who simply do not have enough time to do the job well enough to take pride in the outcome.

Advice A few simple steps can increase the benefits of incidental technical support, while reducing the potential pitfalls.

Involve everyone. Make it part of the organization's culture that everyone continuously improves their technical skills. For some, the challenge may be to learn how to fix a fussy printer or to use more features on a spreadsheet. For others, it may be to become adept in generating reports from a database or troubleshooting problems on a PC.

If everyone is committed to improve, the likelihood is reduced that one accidental techie will become overburdened.

Re-align job descriptions. For those who enjoy giving technical support, make it part of their job, officially. Consider giving them cross-functional job titles, encouraging them to take technical training, and rewarding them equally for their technical support and program contributions.

Track the time spent. For accidental techies, keeping records in some manner is important, lest the technical work grows beyond reasonable expectations. Doing spot checks of the incidental time spent on technology may reveal needs that justify hiring full-time technical staff. It may also indicate ways to economize. The method can be as simple as time-estimates given by each staff member every few months, coupled with brief descriptions of common or repetitive tasks.

ALTERNATIVES TO HIRING

It is tempting to assume that an organization's technology needs are best met by hiring full-time technical staff. While often appropriate, this solution is rarely the only option. Even if, when all is said and done, hiring is the solution of choice, NPower NY cautions against hiring by default. Here are some alternatives worth considering.

Part-Time & Cross-Functional Staff Organizations with modest technical needs could look to hire a part-time employee. Students, particularly ones studying IT or computer science, could be good candidates. A potential disadvantage is turnover, which can cause setbacks and rework, particularly projects are poorly documented. On ay technical project – and particularly one done by part-timers – it's crucially important to insist on thorough documentation of plans, designs, and work-status. A variant of part-time staffing is to hire for a cross-functional assignment that is part-time in technical support and part-time in another department. Such dual assignments need to be explicit, and the division of responsibilities clearly communicated.

Volunteers Cash-strapped organizations may turn to volunteers for technology projects. Volunteers are most effective when the timeframe for a technology project is flexible and the work is interesting to them. They are least effective for activities that require on-demand or routine presence at your office. It is also important to keep volunteer projects small, with well-defined near-term objectives. If necessary, break a bigger project into smaller ones and do them step-wise.

Interns A great resource for small, well-defined projects, interns require some guidance and support. Be cognizant of the hidden costs incurred when your full-time technical staff spends time supervising and assisting the interns. As with volunteers, small step-wise projects may be best.

Consultants & Specialists If your organization's specific technology need is a one time event requiring a highly specialized skill, then a consultant or specialist is likely the best option. However, be sure that the

consultants provide thorough documentation and training to your regular staff before you release them from their contractual commitments.

Vendors & Managed Services The vendor marketplace for nonprofits is fragmented, but there are good organizations that offer specific services. Many vendors, in addition to selling products, can also provide highly specialized consultants. Some firms will, for example, sell full email service, complete with collaborative calendaring and backups. Similar services are available for outsourcing entire network infrastructures. NPower NY recently launched a service called NPower Basic which allows small and mid-sized organizations to entirely outsource the management of their network and hardware infrastructure to NPower NY, which in turn will monitor and support it.

Offshoring This option can be effective for organizations that already have technical managers on staff and need software development. The catch with offshore development is that meticulous oversight by in-house experts is necessary to get offshore developers to deliver precisely what's required. That said, the price may be better than that for domestic contractors or full-time software engineers.

Purchasing Equipment Spending more on technology capital, in a well-planned manner, may reduce an organization's dependence on troubleshooting. Newer, better equipment may require significantly less technical support, thus reducing the need for on-site staff. Appendix B shows a worked example.

6 – SPENDING

RIGHT-SIZING YOUR TECHNICAL SUPPORT

Once you have staffed a technical support position, are you done? Of course not. With any method of technical support, you will need to monitor whether you are getting the expected results. Mid-course corrections may be needed. Furthermore, as your organization grows or technology advances, you will very likely confront similar decisions in the future, and will need ways to anticipate them. And for any technology, the Total Cost of Ownership (TCO), which encompasses initial investments and recurring expenses for people, services, and equipment, needs periodic scrutiny. Continued success in right-sizing your technology support will require a continuing process.

Threshold Events Knowing when to grow or shrink an organization's technical support requires attention to threshold events. The events could be based on supported desktops (e.g., add one technical FTE per 80 desktops) or the client base (e.g., one technical FTE per 500 clients) or overall funding (e.g., a penny for technology per dollar of funding). In using thresholds, three questions are key:

What exactly are the threshold events? They should be simple to understand, well documented, and updated as experience dictates.

Who monitors the threshold levels? In a small organization, it might be one person. In a larger one, it might be a committee of representatives from major departments.

When are the levels normally reviewed? High dependence on technology or large organizational size may dictate a monthly or quarterly review. Smaller organizations or ones with limited technical needs might do it once or twice yearly.

Budgetary Target According to a comprehensive survey by *Computer Economics*, most commercial firms and government agencies spend 1% to 3% of their total revenues or aggregate budget on technology services. For nonprofits, a similar target might be applied to total income from all sources (donations, grants, endowments, and fees). What, who, and when are again the critical questions.

What is the budgetary target? The exact percentage is less important than the discipline of measuring it, tracking it over time, and adjusting it as needed.

Who monitors the actual level? Unless someone is responsible to monitor it, the actual level may drift in the wrong direction.

When is the target normally reviewed? Possible answers include your organization's normal cycle of budgetary reviews or a schedule matching the one for checking threshold events.

Service Levels Getting what you pay for is obviously important. How can you know the level of service you are actually getting? If your organization contracts for managed services, as an alternative to hiring technical staff, your service contract should include measurable targets and financial penalties to the supplier if they miss the targets. If support comes from hired technical staff, they will need to know precisely what level of service the organization needs. Is a one-hour outage tolerable? What percentage of uptime is needed? Who checks the actual results, and how often? It comes back, again, to what, who, and when.

If service levels are worse than the organization requires, a different supplier or an increase in full-time technical staff may be needed. On the other hand, if service levels are above expectations, you may consider raising your hiring threshold or renegotiating a service contract.

APPENDIX A

ESTIMATING INDIRECT COSTS OF TECHNICAL SUPPORT

It is valuable for most nonprofits to estimate the amount of time and other resources they spend, indirectly and incidentally, on technical support. The costs in question are not the salaries of technology staff or bills to be paid for vendors, hardware, software, or technical training. They are the less tangible costs of time spent on technology support by program staff and resources diverted from your core mission to solve incidental technical problems.

One way to estimate these indirect costs is to conduct a simple, periodic survey of the program staff. The following table contains some recommended survey questions. They are framed in a manner that facilitates estimating the total hours per week spent by non-technical staff on technical tasks. This total may help you decide whether to hire technical staff or to contract support from a technology vendor, thus freeing your program staff to concentrate on their core assignments.

How much time do you spend …	**Hours per Week**
Fixing problems on your own computer, printer, or other technology?	
Helping others fix problems on their computers, printers, or other technology?	
Waiting for computer or technology problems to be fixed, before you can resume working?	
Redoing work that was lost because of computer or technology problems?	
Searching for information you need that's hard to find, the way our technology environment currently works?	
Teaching yourself how to do use computers, printers, software, or other technology?	
Teaching others how to do use computers, printers, software, or other technology?	
Of the time spent on the items above, what percent do you want to continue doing yourself? 0% means you want someone else to do it all. 100% means you enjoy doing it yourself and want to continue doing it all.	%

APPENDIX B A WORKED EXAMPLE OF COST ALTERNATIVES

Suppose your organization had 50 desktops supported by one technical person who is overwhelmed. You estimate that your threshold level is one FTE per 30 desktops. Should you hire a second person?

Presently, you think your organization is understaffed for desktop support, but if you hire another full-time person, you may be overstaffed. Neither alternative seems quite right.

On reflection, you find indirect costs of lost productivity from frequent computer breakdowns. The machines are 4 to 6 years old but are running newer software that overpowers the older equipment. You therefore analyze the costs of two alternatives, including what economists call the "opportunity costs" that may affect your fund-raising and reputation.

Option 1: Hire One Additional Technical FTE

Cost	Amount
Salary: Year 1	$ 40,000
Salary: Year 2	$ 41,500
Salary: Year 3	$ 43,000
Total Salary – 3 years	$ 124,500
Total Benefits – 3 Years @ 25%	$ 31,125
Indirect Gain in Service Level	70% reduction in outage time
Opportunity Cost of Old Technology	Small cost of staff morale & lost fund-raising, likely to persist
Total	$ 155,625 + 70% better service + persistent weak reputation

Option 2: Buy New Equipment, "Rent" 25% Technical Support

Cost	Amount
50 Midrange Desktops @$600 each	$ 30,000
New Network Server & Network Equipment	$ 7,000
Consultant: Install & Configure Equipment	$ 13,000
25% Consultant, 3 Years: Repair, Upgrade	$ 40,000
Total Costs – 3 Years	$ 90,000
Indirect Gain in Service Level	90% reduction in outage time
Opportunity Cost of Old Technology	Small cost of staff morale & lost fund-raising, likely to improve
Total	$ 90,000 + 90% better service + improved reputation

With Option 2, you would spend about $65K less over a three-year period, yet have bigger benefits on indirect and opportunity costs. The updated computing environment might enable you to raise your support threshold from 30 desktops per FTE to, say, 40. The 50-desktop environment could then be supported by your one existing technical staff plus a consultant on 25% time for equipment repairs, vacation coverage, and overload. This plan might make your office a more hospitable place for your existing staff to work, both technical staff and program staff, thus reducing the indirect costs of turnover.

As this example illustrates, a multifaceted analysis of costs and alternatives may show that reflex hiring of technical staff is not the best option.