

Welcome to the Telephone Issue of the LStechie!

I'm excited to present this edition's LStechie e-Journal topic: The Telephone, which includes call centers, phone systems, vendors, and terminology.

We consider it the Cinderella of technologies within legal services: she works the hardest on our behalf, and she is the most oft overlooked. But this edition returns her favored status, and strives to provide information for managers, technologists, and directors. Our feature articles discuss:

- **Telephone Technology 101 for Managers – p. 2.** Featuring what planning and other management decisions do you need to make before determining appropriate telephone technology for your program. It covers basics on telephone functionality, and how to maximize the telephone technology to improve services.
- **Telephone Technology 301 – p. 5.** An in-depth article on phone centers, vendors, services, and terminologies; and a discussion about outsourcing your phone system.
- **Telephone Vendor and Resource List – p. 4.** A full resource list to articles, sites, and information on telephone and phone systems technology.
- **Working With Vendors – p. 9.** An article featuring Northwest Justice Project's experience with vendors, including a list of questions to ask vendors.
- **A Viewpoint on Budgeting – p. 11.** Featuring a quick overview on how to understand technology budgeting as it relates to the telephone.

Also in this edition, we have our favorite stand-by: Ask Ms. Techie. This section is for our Computer Responsible Persons (CRP) audience. In this edition, she helps CRPs trouble-shoot computer problems.

We'd like to thank Tad Bohlsen, Joan Kleinberg, Sue Encherman, and Mary Lou Seymour for contributions. Enjoy!

Gabrielle Hammond
Co-Editor

Why is an E-Journal Printed on Paper?

No, we're not just looking to kill a few trees. This convenient, portable version of the LStechie is a good introduction for people unfamiliar with our online journal, and a nice piece of extra reading for people who can't sit and read at their computers.

To see the full LStechie online, as well as some other links and useful tools, check out <http://lstech.org/news/journal>. You can also access the May issue of the LStechie, which investigates the pros and cons of using open source software in your workplace.



A Little About the Organizations Behind LStechie: Lstech.org and NTAP

LStech.org is a web portal designed to provide specially-tailored services and information on technology and legal services. We hope this resource enables nonprofit poverty law providers to use technology to serve low-income and senior clients more effectively and efficiently. We want to be a resource for information on virtually every aspect of technology and legal services. We also want to provide some unique web services, like on-line workgroups, tech projects directory and the LStech.org news service.

LStech.org is funded by a 2001 Legal Services Corporation Technology Initiative Grant and is a partnership of the University of Michigan Law School, Legal Services of South Central Michigan, National Legal Aid and Defender Association and the National Technology Assistance Project.

LStech.org and NTAP share an advisory board, made up mostly of our constituency, to help keep us on track. The advisory board provides editorial direction for the LStechie and content development, and will help in the evaluation of our projects.

The National Technology Assistance Project is funded by the Legal Services Corporation through the Legal Aid Society of Orange County. NTAP's mission is to provide technology and management assistance to legal services program, particularly TIG recipients, who are in the process of implementing a technology initiative that benefits clients.

NTAP has a consortium of technology and management "experts" that can provide assistance to programs for free on specific technology issues. We can provide:

- one-on-one services, consultations, or conference calls over the telephone or web conferencing
- trainings to programs or groups of programs
- written material or sample material
- on-site assistance (programs must pay for travel expenses)
- on-going assistance or check-in

If you know what kind of assistance you want, simply fill out the on-line request form at <http://ntap.lstech.org/>.

What Every Manager Needs to Know About Telephones and Call Centers: Telephone Tech 101

– Gabrielle Hammond, Project Director, NTAP

Regardless of the emergence of more advanced technologies, the telephone remains singly the most widely used tool by our clients to access legal help. Over the last seven years, the legal services community has expanded beyond the staple uses of the telephone to more effectively meet client needs. Centralized intake and delivery systems have brought more clients into legal aid offices. Advanced features have promoted the off-site use of pro bono attorneys and provided informational-recorded scripts to clients in cue.

Yet, despite its position as a fulcrum-point technology for legal services, most managers still know little about the telephone or how to maximize its existing/future technology for our staff and clients. This article provides introductory information every legal services manager should know about telephones, and the services a program can expect to offer clients when it uses its technology to the fullest. It is a prelude to a more in-depth discussive article featured this month by Tad Bohlsen.

Before We Talk Technology

Let's face it: Technology of any sort may be challenging to implement, but many times it is scapegoated as difficult on behalf of unaddressed management and operational issues. So, before we talk technology of phone systems, we have outlined some management basics for call centers, intake delivery systems, or hotline development. By answering these questions and preparing this foundation, any implementation of appropriate telephone technology will be much easier and more likely to meet your program or clients' needs. (We have not gone in-depth on the management or design of call centers / intake systems here, but please look for relevant articles which will be posted to hotline listservs and on www.istech.org in the fall 2002.)

1. Know what you want, what you need, and where you want your program to go.

In day-to-day operations, it might be tricky to keep abreast of larger trends. We suggest that the first step here, however, is to understand national and programmatic trends, and then decide if or where your program/state will be within that trend.

For example, technologically, we are bit-by-bit subscribing to three main technologies that act as a tripod for our delivery systems for effective advocacy for clients:

- A centralized intake system (which ranges in scope from a telephone intake system to a call center hotline),
- A shared database and case management system, and
- A statewide website which promotes the work of advocates and clients.

These three technologies are becoming essential to delivering quality services to clients. If your program hasn't adopted one of these three systems, first decide if these technologies are applicable now, or if they will be in the future, for your clients and service area. If so, the decisions you are making with your phone system will have to take into account future possibilities of integrating your phone system with a centralized case management system and/or a website. Whether now or in the future, your program may have to consider different

configurations beyond the basics.

2. Have a basic understanding of the features and services you need to provide for your clients and within your service area.

To determine the functionality you need from your telephone technology, you'll need to review what services are essential for your delivery system. The following questions serve as a guide to help that assessment.

Does your program provide centralized access to intake, advice, or referral?

As such, will your program coordinate intake for many programs by handling calls centrally, or will clients instead call an 800-number that will route him/her accordingly to an appropriate office based on area code?

With shrinking budgets and mergers, programs have entered into collaborative projects with other legal services or social services. Normally, these projects focus on computer/data sharing, but ignore the key element of phone connectivity between programs. Transfer capabilities are critical to such projects. (For example, when transferring calls, depending on the configuration or option selected, one or two lines may be tied up by your organization even after you've transferred the call. "Hook-Flash" transfer is an example of one option that releases your organization's line and directly hooks the other two parties.)

Centralized intake usually requires a program to consider (1) offering an 800 number for clients, (2) using phone company technology to route callers by area code to appropriate offices if staffing is not centralized, and (3) determining associated long distance charges that might be, or is, incurred to assess if other technologies (i.e. Voice Over IP) might be a more appropriate investment to reduce or eliminate long distance charges. Verifying who foots the bill for transferred calls will be important, especially with 800-number calls.

Will staffing for intake or a centralized hotline be in one location, across several office locations, or inclusive of pro bono or volunteer staff working remotely off-site?

Staffing in one location only might suggest a telephone system that automatically answers the call (Automated Call Distribution), routes intake calls into a cue, and allows advocates who have logged into the system to receive the next caller at their desk once they have completed the previous call. Staffing across more than one location, especially in using pro bono attorneys who generally are better utilized when they can participate from their home or office, might suggest considering features such as remote routing. This feature enables volunteers or remote staff to log into the phone system and take the next call in cue from their location. (Generally, this would also suggest, for purposes of quality control, that they can access the intake database program and conflict checks via a secured website.)

Will staffing consist of staff with expertise in one or two areas of law, or with experience in most areas of law acting as generalists handling any call in cue?

Does your client community have large percentages that speak languages other than English?

What Every Manager Needs to Know About Telephones and Call Centers: Telephone Tech 101 – continued

Over the past seven years, programs have greatly expanded their funder portfolio. This has resulted in project-based funding, which often increases the demands on an intake system to screen for specific clients or legal matters. While many intake systems train staff to be generalists to answer calls as they come in, several programs in the country are experimenting with technologies that enable them to recruit and train staff or pro bono attorneys who are specialized by language or by subject matter. *Skills-based routing* is a telephone feature that asks callers to self-select their language or legal need. These calls are then only routed to specific advocates. This feature helps retain quality of the intake system and better meets the client needs.

Does your current intake system field many calls in one or more legal areas that your program does not necessarily provide in-depth service on (i.e. worker's compensation, wrongful termination, small claims court disputes)?

Does your intake staff mail out pamphlets or brochures to callers as necessary to follow up on counsel and advice provided?

Interactive Voice Response (IVR) is a function that allows programs to provide general routine information using 24-hour recorded scripts. Available off hours and to clients waiting in cue, these scripts can provide general information on legal matters that are typically not handled in-depth. These scripts can also provide information that is menu-driven by the caller on legal issues that could be accessed off-hours. IVR functions also allow callers to receive mailings of selected pamphlets and brochures as needed.

Are the MAJORITY of your client community seniors, disabled persons, or otherwise unfamiliar or unable to handle complex telephone technologies, including menu-driven options?

Senior hotlines or intake programs handling severely disabled individuals usually require telephone menu-driven options to be simple or non-existent. Additionally, the availability of a receptionist (either initially or as one of the options offered) is usually a necessity. Senior hotlines often respond well with voice mail where messages can be left as an option. Programs servicing homeless clients however may not have an option for voice mail.

Will your intake staff be inputting the collected data on a centralized case management system that is housed on a secure website?

These configuration decisions will affect the amount of bandwidth your program may need to access or transfer data and voice, and will affect the configuration of how your voice information will be relayed (i.e. Phone lines vs. T-1 lines vs. DSL).

Telephone Technology 101 for Managers

Clearly, telephone systems retain their enigma status because few people save some engineers can articulate how a phone even works. It's okay; you don't have to be an engineer to implement a working telephone system. But, you should know

some basics. And, if you are the person in your program who will be managing the intake and telephone piece, likely you'll have to develop a more in-depth understanding about this technology over time in order to maintain your system. Luckily, others have paved the way for you. After all, if lawyers can also become managers, why can't they also become phone experts? Many choose to have someone else, a consultant, office manager, or techie, manage their phones. There are many options. But no matter what option you choose, take some time to learn from the experience of others and get a thumbnail sketch of the basics.

As a shortcut, we've provided 10 essentials for knowing or deciding.

Ten Essentials For Managers to Know

1. How the Phone Works. Reduced to simplest terms, phone systems are simply hardware (telephones, servers, and computers) that communicates using specialized software. See Tad's article for more information.

2. Configuration Options and Terms: Build or Buy? In setting up a phone system, you have two main options. You can build, own, and buy all the equipment. Or, you can lease it from a vendor. Each option has pros and cons for staffing, management, costs, flexibility, and client accessibility. A large part of Tad's article is devoted to this issue.

3. Features. Regardless of whether you own the phone system or you lease it, the features and reporting systems of the phone system will be critical to helping your program provide efficient and effective service. Below, we have outlined basic features and terminology at-a-glance. Be aware that phones come with many features, and you can be led to think they are standard. They are not. You pay for them. We've divided the features into two categories: Basic and Advanced. Basic features likely most office managers are familiar with. Advanced features are common among most intake delivery systems, and a few are recent advances. Below is a thumbnail sketch to get novice managers introduced to the topic. Again, see Tad's article for further explanation.

4. Basic Telephone Features and Terminology: Generally, if you are buying phone equipment, almost all of these features are built into the hardware.

- **Speaker phone / Hands free**
- **Hold**
- **Redial Last Number**
- **Call Forwarding** forwards a call from one extension to another number or extension (for staff who work split between offices and/or remotely).
- **Call Transfer** transfers a caller to another extension with the ability to speak to the transferee prior to transfer.
- **Call Conferencing** allows the ability to talk to more than one other person at once.
- **Ring Again:** If a line is busy, your phone will keep trying and ring you when it gets through. This can be applied to external and/or internal calls.

What Every Manager Needs to Know About Telephones and Call Centers: Telephone Tech 101 – continued

- **Intercom:** Consider the safety implications for isolated staff.
- **Speed Dial and System-Wide Speed Dial** allows you to program common numbers of partner programs or other offices.
- **Voice Mail** allows staff to receive and check their “mailboxes” as separate extensions, and reduces the demand on receptionists.
- **Night Answer** allows a different message to play to callers after-hours or on holidays.

5. Advanced Features that Improve Capacity

- **Automated Call Distribution (ACD)** is a software application that routes incoming calls on a first-come first-serve basis. Put simply, it means a computer answers your phone and keeps people holding in a line until the next advocate is open. Usually a receptionist can be contacted by pressing 0 or if no selection is entered. ACD software also provide management tools for intake systems, by allowing managers to track hold times, length of calls, advocate response, call volume and spikes. Announcements can be played while on hold.
- **Interactive Voice Response (IVR)** generally describes a system that requests caller input. Used in legal services, this feature allows applicants to request forms or materials to be mailed to them directly. It also allows programs to develop and offer 24-hour recorded scripts on common legal matters, available while applicants are waiting in cue or after hours.
- **Skill-based Routing** allows intake systems to query applicants about their language preference, age, legal matter, or other query. Their answer better forwards them to an advocate who is trained in that area of law or has capacity in that language.
- **Remote Access** is usually a function that is a part of the IVR package. Washington and Ohio are experimenting with using it to use staff attorneys who work remotely to provide intake assistance from their own office or home. It is also being used to integrate pro bono attorneys who might be better recruited in one location but not available to come into the hub office.

6. Integrating Your System with Case Management Systems and Websites. The configuration of how you transfer data in your organization and how you transfer voice data will largely depend on the services available in your area, your budget, the volume of calls and lines needed to support them, whether or not your case management system receives information over a protected website, and whether or not your intake system is integrated with your website. There are several ways to

configure a system (see other article on building or buying), but the lines will be either regular phone lines, ADSL, or T-1 (whole or fractional). See Tad’s article for explanation and definition.

7. Working with Vendors. Understanding best strategies for selecting vendors, negotiating with vendors, and managing vendors are essential skills a legal services manager should be aware of. Here are some quick tips.

8. Selecting a Vendor: We have provided a resource list of phone vendors to help you research from whom you would like to solicit proposals. Generally, we recommend drafting a Request for Proposal that outlines the goals and specific components of your intended project and what you’d like the vendor to do during installation and as a part of maintenance. It helps you articulate what you want and solicit bids to compare. For help on preparing RFPs or reviewing them, contact NTAP.

9. Negotiating with Vendors: Vendors and phone companies don’t know everything. And while one person within a company might, they may not always talk to other people within the same company with whom you are negotiating.

In working with vendors, know what questions you need to ask. Please see our article which lists basic questions to pose to vendors and provides an inside view from Washington’s experience (“Working With Vendors”)

Lastly, in negotiating costs with a vendor, make sure you tout your non-profit status and, if necessary, play one vendor off against another, to reduce costs. Also, try to avoid upfront nonrecurring charges (installation fees, charges for equipment such as routers, CSU DSU, DSL modems, etc.) Just as the cable company will give you a \$200 set-top box for free to get a monthly revenue stream, most phone companies will waive almost all initial installation and set-up fees, to get you “signed up.”

It is also a good idea to have a consultant work with you, if you need support in meeting with a vendor or designing the best configuration. (A consultant often used in legal services is Steve Green, who understands phone systems so well, he often designs more cost effective solutions than even the vendors.)

10. How to Ask for Help. Start with National Technology Assistance Project. We are funded to provide tech assistance to managers and programs on exactly these types of issues so that your delivery systems are more effective and clients are benefited rather than just vendors. We’ve taken the time to pool the experts in this area from Washington to DC. Call or email Gabrielle Hammond at 310-917-4492, g.hammond@verizon.net.

Telephone Vendor Resource List

<http://www.virtualpbx.com/>

<http://www.avaya.com/> (Lucent)

<http://www.worldcom.com/>

<http://interintelli.com/>

<http://www.3com.com/>

<http://www.ineto.com/>

<http://www.telephonyatwork.com/>

<http://www.cisco.com/>

<http://www.whitepj.com/>

<http://www.artisoft.com/>

<http://www.nortelnetworks.com/>

<http://www.inter-tel.com/>

<http://www.att.com/>

Telephone Technology: An In-Depth View

– Tad Bohlsen, Indiana Legal Services, Consultant for NTAP

In this article we will be looking at voice communications technology, and in particular what makes up a basic workplace phone system, with a brief "sneak peek" at a new type of communications technology which, in acronym-ville is referred to as VOIP (Voice Over Internet Protocol - an acronym that still doesn't make sense even when spelled out). The purpose of this article is to provide an in-depth look at telephone technology, and how your choices affect staff, clients, and integration with other systems (case management and Internet tools) your program uses.

We will start with a "non-financial" return (at least on the surface) that a working phone system can offer -- happy staff.

Phone vs. Contact Center

For most staff, phones are currently providing a few key features beyond what would be found on a normal residential phone. These features usually are 1) multiple line appearances, 2) call hold, call transfer, and conference calling and 3) auto attendant functionality to answer incoming calls and to route them to the appropriate staff person (this assumes most residential phones now have voice mail). Many organizations with more than 10 staff people would be well served to consider providing at least this level of functionality, as phone systems capable of performing these functions can be purchased and installed for well under \$5000 (depending on the number of phones necessary).

However, due to the implosion of the telecommunications industry, the dot.com crash, and the recent recession, as well as advances in communications technology, it might make sense to consider acquiring additional voice communications functionality. For instance, these types of initiatives, while largely beyond the scope of this article, are worth investigating:

1. Turning your phone system into a contact center connected to a computerized database, which can store information, route calls, and even answer some calls automatically (touched on briefly in the section on PC-based phone systems below).
2. Increasing the ability of staff and others to mentor, consult and communicate by networking multiple locations for voice communications (mentioned in the VOIP section).
3. Considering implementing a hotline or call center, which could take referrals from other hotlines and/or call centers and make referrals to other agencies, as well as process clients for the organization (see LSC Program Letter 02-4 for more on LSC's recommendations on Telephone Intake, Advice and Referral Systems).

While these may be long-range goals, they can be built on top of a more basic phone system that still provides a valuable level of voice communications for our organizations and staff.

Basic Voice Communications – What You Need to Buy

Unless you will be connecting your incoming phone lines directly into phones, you'll need to consider providing some type of a phone system. There are literally thousands of different kinds of phone systems, and even these days there are multitudes of phone system vendors. In the face of all this choice, there are several things that remain fairly constant

regardless of the type of phone system purchased (including a phone system which is "outsourced", and/or off-site).

- **Incoming Lines & Line Handling Equipment** (Line handling equipment is needed if you purchase phone lines which are not capable of connecting directly with your phone system.)
- **Phone System** (Unless you go with a completely outsourced solution, such as a Centrex product, you'll probably require some minimal phone system on-premises. Without such a system, you'll need one incoming line for each phone on the premises, an equation which can quickly become much more expensive than purchasing a low-end phone system.)
- **Internal Lines**
- **Phones**

Additionally, there are several choices that require some basic background knowledge:

- **Outsourcing Your Phone System v. In-House Phone System**
- **Voice Over IP (VOIP) Technology**

The rest of this article provides information on each of these bullet points in order to arm each manager with information necessary for making best decisions.

Incoming Lines (Analog and Digital) & Line Handling Equipment

While phone companies market lines with an increasingly dizzying array of brand names since the AT&T Divestiture of 1984 and the Telecom Act of 1996, they fall into two basic categories -- analog and digital.

First, some more acronyms: At our houses, and in some of our workplaces, most of us have POTS_(Plain Old Telephone Service), which is an analog connection across a pair of copper wires to the phone company's CO_(Central Office), where there will usually be a device called a class 5 switch. This switch is a part of the PSTN_(Public Switched Telephone Network), which is the network that allows telephone calls to be completed across the country, and beyond.

In the 1960s and '70s, the Bell companies began introducing digital signaling in the PSTN, and many commercial establishments now purchase phone service over "the last mile" this way (almost all of the PSTN "backbone" – the network of phone company switch to phone company switch connections - is now digital).

So in order for our staff to have their phones function, we will need to purchase a type of service like the following (and this list is not exhaustive):

Analog (Voice Lines)

Centrex is usually sold by telephone companies and their resellers, and generally requires the purchase of a minimum quantity of lines. It offers some of the features also available from a key system or PBX (see below for more on these terms), and in some unique cases can actually eliminate the need to purchase a key system or PBX. Often, Centrex lines are cheaper than regular phone lines (because they are purchased in bulk), so it can be more cost effective to purchase Centrex lines even if you have a key system or PBX.

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Flat Business/POTS lines are simply regular phone lines sold to commercial (as opposed to residential) establishments, typically at a price premium above residential line prices, which connect directly into an analog phone (from Radio Shack, Wal-Mart, etc.). Various phone companies have different terms for these types of lines; as always, it might be they would offer reduced line rates for non-profits and charitable organizations.

Digital (Voice and/or Data lines)

T1 (Trunk Level 1) is a type of digital phone service, which is more often used for data communications than voice, which can be thought of as a collection of 24 phone lines. These phone lines, however, use digital rather than analog signaling. So, if you purchase a T1 and need to use it with an analog phone and/or phone system you need a CSU/DSU.

CSU/DSU (Channel Service Unit/Data Service Unit). Because a T1 is a collection of 24 phone lines, if your phone system is not capable of handling this type of a connection, you'll need to break those 24 phone lines back into single phone lines so they can be "plugged-in" to your phone/and/or phone system. The technical term for breaking these lines apart is "channelizing", thus the need for a channel service unit (the data service unit is used to connect PCs and other data processing equipment to the T1).

PRI ISDN (Primary Rate Interface Integrated Services Digital Network) ISDN was developed by phone companies long before the Internet was anything other than a small network connecting universities. It was designed to be an all-digital product, as opposed to the PSTN, where almost always the last mile utilizes an analog connection. A PRI ISDN is similar to a T1, except it offers more features than a standard T-1, and is more expensive (one proposed definition for the acronym ISDN is "I Smell Dollars Now"). To utilize a PRI line, your phone or phone system needs to be able to handle the incoming digital connection. A PRI ISDN line consists of 23 data and/or voice lines, with one line reserved for the phone company's signaling (this signaling is what provides many of the features available on a PRI line). BRI ISDN is a less expensive, smaller version comprised of 2 data and/or voice lines with one small signaling line. BRI ISDN is useful for data/Internet connections in locations where other higher bandwidth solutions (DSL, Cable, etc.) are not available, or possibly in a small office/home office environment where one line can be used for voice when necessary, and both lines can be used for data to when there's no voice traffic. PRI ISDN is useful in larger locations and/or call centers because of the types of features it offers, and its higher price.

Phone Systems – Features and Configurations

The phone system industry is in the middle of a significant change. Since the days in the 1960s when AT&T sold almost all phone systems, phone systems have been proprietary, meaning it is difficult or impossible to interconnect to different types of traditional phone systems, or to connect a phone system to another information technology device. This approach has run headfirst into the approach popularized by the personal computer industry, which involves setting nearly universal standards to allow an extremely high level of interoperability between different types of personal computer systems. The major proprietary phone system vendors these days, including Avaya, Nortel, Siemens, NEC, Alcatel, Fujitsu, Panasonic, etc. are being forced to "open" their systems up to increase interoperability. This is

not simply because they are "looking bad" in comparison to the personal computer industry; it is because products from the personal computer industry are invading their markets, and threatening to reduce their revenues. A number of companies, including Altigen, Artisoft, Telephony@Work, and Interactive Intelligence among others, now make phone systems that run on standard PC-based computer systems. Additionally, along the lines of the old Centrex product, which could imitate many of the functions of an on-site phone system, a number of companies, running the gamut from surviving dot.coms like White Pajama, Ineto, and Terverse to WorldCom and AT&T (the wheel has come full circle?) are offering "outsourced" phone systems and/or phone system functionality.

This high degree of flux has made purchasing decisions more confusing and time-consuming, but also potentially more rewarding. In order to evaluate the potential Rate Of Investment (ROI) on a phone system investment, it is important to identify the key features almost any phone system would need to be able to provide. (I would note, however, that with newer kinds of phone systems, it sometimes doesn't make sense to force them to conform to this list, which is based on the features available in the proprietary phone systems developed in the '70s '80s and early '90s. In fact, these "new school" types of phone systems may enable larger, well-funded organizations to re-think exactly what they need phone systems to do, and to re-design them to do it, rather than simply "accepting" a phone system will only do the following.)

Basic "old-school" features to look for:

- Auto Attendant
- Dial by Extension
- Voicemail
- Speakerphone/Pager
- Intercom
- Redial/Ring Again
- Speed Dial
- Call Forward
- Caller ID/ANI
- DNIS/DID
- Hold/Conference/Transfer

Types of Phone Systems and Configurations: Key System, PBX, PC-Based

Key System is simply a smaller phone system, capable of supporting 20 to 40 incoming phone company lines maximum, and 50-200 internal phones maximum. They are often appropriate for smaller locations with staff levels of 5 to 15, and most will offer almost all of the basic features listed above. Often they're not highly expandable or configurable.

PBX (Private Branch Exchange). The major technical difference between a PBX and its smaller cousin, the key system is this: PBXs are capable of acting as a true "phone switch." A true PBX can automatically select an unused outgoing line from a pool of lines when a staff person picks up the phone and dials "9", whereas a key system cannot. (With a key system, the person must press a button "hard-wired" to an outgoing line or group of outgoing lines, and visually determine by a checking a "line in use" lamp that the line is available).

UnPBX or PC-Based Phone System These are the "new school" systems, which are just a standard Windows, Unix, or

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Linux-based computer that can connect to the PSTN through analog or digital phone lines, and function as a Key System or PBX. However, because these types of systems can interface with computers on a LAN, WAN, or over the web, they can handle a variety of communications, including email, voicemail, fax, standard voice communications, etc. (unified messaging).

Internal Lines

When you order phone lines, the company will bring the physical lines to a place in or near your premises call the "demarc." In order to use those lines, you will need to connect any internal phone equipment to the phone company lines (often called trunk lines) at the demarc. This aspect of evaluating and purchasing phone systems is often overlooked, but it is important to make sure your wiring and network infrastructure is well-planned. There are several options, driven by price and by the needs of your phones and/or phone systems.

CAT 3, CAT 5, and CAT 6 These are CATegories (or types) of cabling, and without going into detail, the higher the number, the better and more expensive the cabling system. For traditional phones and phone systems, CAT 3 cable is still used in many cases, but it might make sense to spend extra dollars to install CAT 5 or, (my recommendation), CAT 6 cabling, which can support 100 Megabit and 1 Gigabit Ethernet speeds, respectively, as well as basic voice connectivity. VOIP (see below) and some UnPBX's or PC-based phone systems offer the advantage of not requiring companies to run one cable to a staff desktop for voice communications, and a second cable for data, greatly reducing wiring expense, and reducing overall Total Cost of Ownship (TCO) for an organization's physical network (including hubs, switches, patch panels, personnel, etc.).

A Note on Power Protection of Phone Lines

It is generally a good idea to surge protect all phone lines, and to use a quality UPS for in-house voice communications equipment. Phone lines are often not protected against surges (lightening strikes, etc.), and because organizations connect phone and other equipment, unprotected phone lines can result in very expensive damage.

Phones

The selection of phones is usually driven by the type of phone system used; most traditional phone systems require the use of their own make of proprietary phones (ie, Nortel w/Nortel, Fujitsu w/Fujitsu, etc.); newer UnPBX's and VOIP systems often offer value by enabling the use of less expensive phones, and/or a wider variety of makes and models of phones, depending on the need of the staffer. (A phone at a volunteer's desk may not need to be as sophisticated as the phone at a receptionist's desk.) Phones need to provide a quality experience for staff - skimping in this area can doom the best of projects, so make sure to have prospective phones evaluated by at least a few staff people before purchasing in bulk.

Phone Systems: Outsourcing / On-site v. Off-site Equipment

What is Outsourcing?

Outsourcing is a fancy word for renting; what exactly can be rented varies. It is possible to "rent" a phone system placed on-site, which is different than leasing or renting to own. The key

advantages to renting or outsourcing a phone system are similar to those of renting cars: you only pay for what you use, and someone else is responsible for service, maintenance and upgrades.

Main Advantage of Outsourcing

Outsourcing your phone system can allow organizations to "rent" a better phone system than they could buy because they are sharing it with other "renters." Total costs to maintain and purchase the system may be less, especially initially. The quality of your experience with the system will not be dependent on your staff's knowledge of the phone system, but instead more related to the expertise of the company with whom you contract. Your staff may be relieved of becoming telephone experts on top of other job titles, and/or you will not have to hire or assign someone on staff to maintain/understand the system. You may be able to opt for many features, including integrating your phone system with a database intake system (provided by some vendors who cater to legal services), or other telephone features that improve hotline or call center functioning.

Disadvantages of Outsourcing

Of course, there are downsides; the "rented" phone system could become over-utilized (by other "renters"), causing poor performance and service disruptions. Because you have to rent a package with a vendor, the availability of phone options and features, including the ability to integrate with existing technology configurations, may be limited or non-existent. Flexibility is reduced, which may be problematic for bigger call center programs that service a state or large area, or that need many varying features to accommodate volunteer remote advocates. Unlike in-house phone systems which can bank on "soft" costs (often, for example, by training existing staff to understand the phone system and maintain it), outsourcing involves hard costs going to a vendor. For some programs who want to institutionalize their technology expertise, this is not favorable. Lastly, if the company you select folds, you are without any maintenance or option; you can do due diligence on (always try to talk to the CFO), and negotiate terms providing you with some advance notice of a deteriorating financial condition.

Things to Keep in Mind on Outsourcing

With any purchase in a legal services program, a comparison should be drawn to assess how an option will affect: staff, clients, maintenance, and other technology decisions. Outsourcing the phone system is no different. Each program, in doing this review, will have different criteria which may render one option better than another. For more help on discerning this for your program, feel free to contact National Technology Assistance Project, which can also help route you to others who have chosen in-house or outsourced systems to learn from their experience.

Also consider that when renting or outsourcing, it is important to negotiate contractual obligations with penalties stiff enough to insure such problems will most likely be kept to a minimum (see SLA and Maintenance Contracts in Resources). Often, the fee to outsource maintenance will be lower than the expense required to allocate internal staff resources to maintaining the system (this is not exclusive to "rented" systems, you can also sign service contracts with vendors to support phone systems you purchase, as well). You can also outsource all or just parts of your overall voice communications solution. For example, if

Telephone Technology: An In-Depth View – continued

you were going to completely outsource everything, including your on-site equipment, you could rent all hardware, sign a service contract, and rent call center or ACD software through an ASP (Application Service Provider). If you were going to outsource discrete components, you could purchase onsite equipment (like a small key system and phones), or you could purchase a phone system co-located and maintained by an MSP (Managed Service Provider), and then in both cases you could rent PBX and/or call center software through an ASP which would route calls to your onsite or off-site "owned" phone system.

On-site vs. off-site

Outsourced phone systems can be placed off-site, as can owned phone systems (for instance, an organization might purchase a large server-based phone system for several locations in a major metro area, and house the system at a data center with redundant power, incoming phone company trunk lines, network and security systems, and then purchase connectivity from each location to the phone system in the data center). For more on vendors providing various outsourcing and off-site options, see the Resources section.

VOIP

I have mentioned cabling and network maintenance as an oft-overlooked component of phone system TCO. One solution that helps in this area is VOIP (Voice Over Internet Protocol, or Internet (or IP) Telephony). This may seem like an unglamorous way to introduce a product that has been gaining a great deal of notoriety in the press; however, it appears that perhaps the main advantage VOIP is the reduction of costs associated with maintaining two separate networks, one for voice and one for data (convergence). Initially, VOIP was marketed as a tool to reduce long distance charges between locations, and for calls made from one location to another location's local calling area (LATA). However, with the tremendous reduction in long distance rates seen over the last five years, the anticipated savings from this category alone are generally not enough to justify a VOIP solution. Also, the ability to reduce or eliminate long distance costs by connecting the phone systems in physically disparate locations is not limited to VOIP. For instance, Advocates for Basic Legal Equality, Inc. (ABLE) in Ohio has been working toward a system to network various locations on a voice WAN using traditional phone systems.

VOIP comes in many flavors, but at its most basic it offers the ability to use an IP-based network, like a LAN, WAN, and/or the Internet, to carry voice traffic which would otherwise be carried by the PSTN and/or a traditional PBX or key system. Currently, two of the hottest of these flavors are VoDSL and VoCable (voice over DSL, and voice over cable), and some have joked soon we will see VoE (voice over everything – car transmissions, sewer systems, etc.).

One of the most important acronyms in the VOIP arena is MOS (mean opinion score). Most VOIP solutions provide sound quality slightly below to well below the sound quality of calls made across the PSTN. I call this the revenge of the PSTN. While I have mentioned before how traditional phone vendors have faced increasing competition from companies with products based on open-architecture, PC-based solutions, the traditional PSTN has a record for reliability and uptime, which almost no other existing industry can match (with the possible exception of commercial aviation industry). Some of

you may have heard the retort made by someone in the auto industry to a Microsoft statement that, "if cars had seen price reductions and product improvements similar to those seen in Microsoft software over 20 years, automobiles would cost \$500" (or some ridiculously low amount). The auto industry's retort was along the lines of, 'yes, and they would break down every day and require the constant attention of a full-time mechanic'.

The PSTN provides, purportedly, 99.999% ("five nines") uptime, and most of its equipment has a very long mean-time between failure rating. This means the average PSTN customer experiences less than 6 minutes of downtime a year. And not only was the PSTN designed for extremely high levels of reliability, it was designed to provide high call quality, as perceived by PSTN customers. Most PSTN calls receive a MOS of four or better ("toll quality") on a scale of one (the worst) to 5 (the best). Most VOIP calls, even on well-designed networks, score lower. However, for many uses, an MOS of 3.5-4.0 is acceptable (many cell phone calls receive MOS scores lower than 3.5, as do many cordless phone calls). But this statistic points out the real challenge of VOIP: matching the quality of the PSTN. In general this involves focusing on two areas: 1) overall bandwidth on the network across which VOIP will run, and 2) prioritization of voice traffic over other types of IP traffic. These necessary modifications to IP have spawned the proverbial alphabet soup of acronyms (Quality of Service, Real Time Transport Protocol, Resource Reservation Protocol, Differentiated Services, Multi Protocol Label Switching, 801.p, and so forth), indicating the difficulty involved in matching PSTN quality on IP networks.

Without wasting space on an in-depth explanation, which others have done an excellent job of providing elsewhere, VOIP works by compressing and decompressing audio signals using a "codec" (compressor/decompressor, or coder/decoder), converting the audio signals to IP packets. Because the original signal is compressed, audio quality is reduced; without this compression it would be difficult for voice traffic to coexist with data on an IP network. Even with this compression, because IP by its nature is not a "real-time" transmission protocol (i.e., data sent using basic IP is not guaranteed to arrive within a certain length of time), it requires additional tweaking to transmit real-time voice. Obviously, if voice cannot be transmitted in real-time, conversation becomes impossible (other aspects of IP communications can affect voice quality, for instance, jitter, packet delay, and packet loss). So, to provide real-time data flow, and to run VOIP, networks generally to be prepared in advance to provide high throughput and low response times.

Aside from the advantages of reducing maintenance, cabling, line charges, long distance, staff hours, and other expenses, VOIP does offer the "thrill" of the new. Because VOIP phones are internet devices, they can combine different kinds of IP-based information to let staff do things standard phones cannot. For instance, a new type of IP-based communications protocol, SIP, offers the hope of making it simple to let devices be connected whether they are on the PSTN or an IP network (older VOIP equipment used a more expensive, less flexible protocol, H.323). SIP phones are multifunction devices, made for the web. They can be programmed much as a PC, yet still function as phones. This area of potentially new features and functionality, coming as a result of the "blending" of the PSTN and IP networks, offers promise; however, it would be difficult

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for nonprofits to devote the resources to develop features to fulfill this promise from scratch.

What is possible for non-profits, and what I would recommend, is to try a limited test of VOIP, maybe on a LAN in one location, or as a way to link a few locations together (eg., see this article describing the use of VOIP in a smaller enterprise). In the legal services community, several programs are implementing VOIP solutions, including Legal Services of New Jersey, which is looking to complete a small VOIP project by the end of this year.

The resources section lists more ways to “kick the tires” of VOIP, and while a number of traditional telecom and datacom

companies make VOIP equipment, two in particular, Polycom and Pingtel, make affordable, high-quality IP video-conferencing devices and VOIP phones. Purchasing one for a test at a remote location would be a very low risk way to test the VOIP waters. Even less expensively, Windows XP supports SIP; so with a sound card, microphone and speakers, it allows for VOIP experiments. Finally, your local telephone company(ies) may have VOIP solutions, and they may offer deep discounts to “early adopters”, which could allow for VOIP piloting in a remote location.

For more information on any of this information or our resources, please check the LStech website at www.lstech.org. Or, call National Technology Assistance Project (310-319-2084).

Working With Telephone Equipment Vendors

– Joan Kleinberg and Sue Enchermer, Northwest Justice Project

No legal services program can survive without vendors. We have become fairly savvy about using them for items such as office supplies, office equipment and books. We are in more dangerous territory when purchasing items with which we have less comfort and familiarity. While we at Northwest Justice Project are not in a position to write the authoritative legal services article on the use of vendors, we can share our recent experience purchasing sophisticated software for our telephone system, with the hope that other programs may learn from our experience.

Our telephone purchasing experience began in 1997 when we shopped for a more robust telephone system to support our statewide telephonic intake, advice brief service delivery system. We had been working with our existing system for a year and a half and had identified features that we wanted in the new system. We also knew there were features we had not even dreamed of that might be useful to us. We contacted several companies and invited them to tell us how their product might meet our needs. After ruling out some of the companies because of cost or because the product did not meet our needs, we focused on two major vendors – NEC and Lucent. We met repeatedly with sales reps from these companies to gain a very clear understanding of what the systems included. References were obtained and checked. After we had worked out detailed bids with both companies we called in a telephone consultant with whom we had worked previously and had him review the bids to help us understand the differences between them. We preferred the Lucent system, however, it was quite a bit more expensive than the NEC system. We asked Lucent for a donation and instead they offered a significant discount that made the two systems competitive in cost. Ultimately we chose the Lucent system and we have been very pleased with its performance.

As we continued to work with this new system, we identified additional features that would support our work and obtained a TIG grant to purchase two additional software packages. One allows remote access to the system (hoping to make volunteering more appealing to the private bar) and the other

(an interactive voice response unit) allows the use of voice commands and 24-hour access to recorded legal information and publication requests. What follows is a list of questions we asked at some time during the purchasing process. Many of these questions should be equally useful in other situations.

1. **What will the system do that your system does not currently do?**

Ask the vendor to go over **all** the features of the new item, not just the ones that were on your list of needed items. There may be features that will be very helpful that you had not anticipated. Those features may change the comparative desirability of various products.

2. **Will the system perform each of the functions your current system performs that you want to keep?**

Don't assume that just because it's a newer, bigger or more powerful system it will do every function your existing system does. Make a list of the important features you currently have and then go over them with the vendor to make sure your new system will have each of those features.

3. **What are the costs, including:**

- a. **Hardware**
- b. **Software**
- c. **Preparation to meet system requirements**
- d. **Installation**
- e. **Maintenance**
- f. **Training**
- g. **Staff time including IT, implementation, user**
- h. **Consultant time**

The cost of purchasing the item is not the only expense incurred in purchasing, installing and running new technology. We have found that bringing in new technology requires a significant amount of time from our network engineer and a lot of time for training and set-up. Sometimes changes need to be made to your existing configuration prior to installation of the new technology. All of these costs are part of the equation.

Working With Telephone Equipment Vendors – continued

4. **What are the system requirements? If you are adding to an existing system, what version of the system software do you need to be running to support the new system?**

- a. **Will you need to upgrade the software on the system before an expansion/addition can occur?**
- b. **Is your computer network configured properly to accept the new telephony? Have your system technician talk with the phone vendor's technician before you buy.**

Make sure the sales rep is knowledgeable about the network configuration needed for the product. Grill him or her mercilessly.

5. **How are upgrades to the system handled? What are the costs involved?**

Technology is very dynamic. Over time there will be upgrades to the system you are running. Ask how you will be notified of upgrades and the cost of implementing them.

6. **If employing telephony: What are the effects on the network? Will you need to breach firewalls?**

When venturing into computer telephony, remember that the computer network part is as important as the telephone part. Have your IT staff person or consultant meet with the vendor to discuss how the new product will interface with your existing network.

7. **Will a new computer terminal be added to the system? Must it be dedicated? Is it included in the cost?**

These are all questions that will affect the total cost of the project. There may be space considerations if more equipment is being added to the room or rack.

8. **What is a reasonable estimate of the need for tech consultant or IT staff time at your end?**

We use a consultant for network engineering, so there is a very real cost associated with time spent implementing technologies that impact the network. Even if you have in-house information technology staff, there will be a need for his or her time. It's best to have an estimate of that time as you plan the project and include it in a grant, if applicable.

9. **What training is available? What is the cost? What will the training cover?**

New technology generally requires new training. Find out who will have to be trained and how training will occur. Lucent provides costly training at its training centers. We found it less expensive to bring a professional services person to our office to work with two people rather than send them both to the training.

10. **Is technical support/maintenance included in the sale price? If so, what's included? What's the cost of maintenance if it's not included or after the maintenance contract expires?**

11. **What are the possibilities for expansion? How many**

users will the system support without upgrade? What is the cost of upgrade for expansion beyond the current capability of the system?

When making a big investment in technology you want it to have the flexibility to meet your program's needs over time. Thus, it is important to learn the costs of expansion and upgrade for both hardware and software. For example, to implement upgraded software you may need an additional processing card for the computer that runs the software. If it is a system with announcements, mailboxes or actual telephones, you will need to know how much announcement time there is, how many mailboxes or telephones there are and what it will cost to increase the amount.

12. **Get the names and numbers of some current users of the system being purchased (references) and call them.**

13. **What are the reporting capabilities?**

Figure out what information you will want to extract from the system and find out how you get the reporting capability to get that information. There may be different levels of reporting available (with differing costs associated). You should know which level gives you the desired data.

14. **What do callers on hold/in queue hear? What other options are available?**

If callers will spend time in queue you will want to make sure they hear something appropriate. If you use a music source, ask what the playing time is. The loop should be long enough that most callers won't have to hear a repetition. You may want the ability to play different music sources on different lines/queues, for example, to serve a culturally distinct population.

15. **What is involved in changing the way calls are processed? Can you change/program yourself or are professional services required? If the latter, what is cost? Availability?**

As your system increases in sophistication, the range of possibilities expands. You will want to determine what is involved in changing the way calls are processed and decide whether it is a task you will learn to do in-house or whether you will use the vendor's professional services to make the changes. The cost of training or professional services should be included when you evaluate the cost of the purchase and in any grant proposal to cover the costs of the project.

At Northwest Justice Project we are what one staff member calls "phone empowered." Your phone empowerment should start with the work you do with vendors to lead you to the system that is most appropriate for your program.

Technology Decisions in Your Legal Aid Program: A Perspective on Budgeting

– Tad Bohlsen, Indiana Legal Services, Consultant for NTAP

In the difficult environment nonprofit administrators will usually face, it is easy to treat information and communications technology as a kind of "black box" budget item. That is, because of its complicated nature, frustrating lack of reliability, confusing price structure, and proprietary lingo it is easy to simply allocate a certain number of dollars to several technology-related line items every year, hope this is enough to keep things turned on and working, and to focus on other management areas which are more directly rewarding (e.g., recruiting and retaining quality staff, managing people, exploring important emerging issues facing your client population, etc.).

Unfortunately for those of us who might prefer this approach, technology is important for nonprofit administrators to understand, despite the fact it is currently too complicated and too cumbersome to be "rewarding". In particular, technology is important because it can, if used well, add resources, sometimes significant resources, to an organization. Despite the high complexity and low reliability of word processor software, for instance, almost no organization would be better off returning to the typewriters which computerized word processing software replaced.

A Resource or a Resource Drain?

Aside from the obvious ways technology can add resources, which were trumpeted in the press in the not too distant dot.com era, technology can add resources to nonprofits in some unique ways. For instance, although technology funding in the private sector has become difficult to acquire, technology funding in the public sector remains comparatively freely available, and this availability is likely to continue for the next year or two at least. Most of us understand one reason for this, which is that often technology is viewed as a capital expenditure, which grantors

like to fund, as opposed to an operating expense, which many grantors are more reluctant to fund. Of course, this funding categorization ignores the fact that, because technology is labor-intensive to utilize and to maintain, usually the capital expenditure involved in any technology initiative is the tip of the initiative's resource iceberg. Nonetheless, I have found nonprofits are willing to "grin and bear" the additional technology problems they incur, due to a lack of sufficient operating funds, in order to acquire technology through a capital expenditures grant.

Investments v. Costs

This willingness to incur operating expenses to avoid capital expenditures brings us to a concept that many of you may be familiar with, and which will lead us into the area of technology referred to in this article as "acronym-ville". This first acronym is TCO (Total Cost of Ownership). The term refers to all anticipated (or realized) expenditures relating to a technology good, service, or project (see the resources section for more on calculating TCO for various technology items). TCO is important in calculating ROI (Return on Investment), which is supposed to be (but not always) a useful yardstick in determining the viability/desirability of a project (technology or otherwise). I mention these because it is a good place to start when mentioning technology; information and communications technology which does not justify its own existence in some ROI calculator is draining resources, often precious resources. This is not to say that ROI is strictly a financial calculation (although it is usually treated this way). As nonprofit managers understand, often there are non-financial returns which are as important as financial ones, and which need to be considered. It is to say, though, that at the very least nonprofit administrators should know the anticipated ROI for proposed projects, and the actual ROI for completed and/or ongoing projects to help them manage their organizations.

Resources for Executive Directors and Fiscal Managers

For the latest on various ROI evaluation approaches for IT (discusses TCO among others):
<http://www.cio.com/archive/071502/value.html>

For practical financial management, this is a good site that offers free spreadsheets:
http://www.exinfm.com/free_spreadsheets.html

One of the sample spreadsheets showing the calculation of Present Value and Internal Rate of Return, and typical ROI measurements can be found here:
http://www.exinfm.com/excel%20files/npv_irr.xls

For an article discussing some drawbacks to use of specific functions in

Excel, which can be used to calculate ROI for projects, and for sample spreadsheet downloads:
<http://maxvalue.com/tip064.htm>

An opinion piece outlining weaknesses in TCO and ROI approach ("life is messy and non-calculable")
<http://www.nwfusion.com/columnists/2001/0507gibbs.html>

A how-to piece on calculating desktop PC TCO with spreadsheet:
http://www.utopiaplace.com/research/whitpapers/total_cost.html

Article on cost-savings, with sections on negotiating, weighted RFP's, TCO, etc:
<http://www.networkmagazine.com/article/NMG20020803S0002>

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Ask Ms. Techie: Questions, Questions, Questions

– Mary Lou Seymour, South Carolina Centers for Equal Justice

Dear Ms. Techie:

As the computer responsible person in the office, I get a lot of questions about “How come my computer won’t work?” or “How do I…” or “My screen is blank.” How do I handle them most effectively to produce best results and keep my sanity?

Dear Computer Responsible Person:

We’ve all heard the expression “there are no stupid questions.” But some days, when you get a litany of questions on computer operations, well, I don’t know about the rest of you, but sometimes I wish computers had never been invented and I could just go back to answering questions about Social Security and food stamps. The goal, of course, is to make the questioner feel comfortable asking you any question (no matter how “dumb”), confident that you are giving correct information, to understand what you are saying, and to be able to use the answer you give to not only solve this problem, but learn how to “think through” the problem and solve it on their own next time.

Let’s share some strategies for dealing with questions, finding answers, and helping your users get back to work.

Take a deep breath. Unclench your jaw. Realize that, to most folks, computers seem to be not just a machine, but an alien intelligence angry about being locked in a metal box and intent on taking out that anger on the computer user. So, first, assure your user that it’s just a machine. It can’t outsmart us. We’re the ones who think.

Questions can be roughly divided into two categories: Troubleshooting (i.e. “My computer won’t work…The screen is blue”, etc.) and Training (“How do I do something?”).

Troubleshooting

Problems like these can be either caused by either hardware or software, or user error. You may or may not be able to “solve” the problem. Your goal is to figure out what the problem is, whether it’s hardware, software, or user error, and, determine if it’s an “easy fix,” or whether you need to <horrors> call your computer support company (or program IT staff).

First, ask the user to tell you **exactly** what they did before the computer “wouldn’t work”. Be patient. This, for some reason isn’t easy, even for folks in the legal profession, who have spent years getting facts from their clients, but can totally forget their training when confronted with a computer that is misbehaving and not be able to give you a single fact about what they were doing before the computer “wouldn’t work”. (Note: the most valuable “computer training” that you can give your users is to train your users to give you useful information, instead of just saying “My computer won’t work.”)

If your user hasn’t got a clue about what caused their computer not to work, try to get them to physically duplicate exactly what they were doing. (This could start with “I came into my office and turned on the computer.” And then what happened? Did the computer turn on? (Note: leading questions are fine here, we’re

not in court). If the answer is “no,” you’ve got your first clue. Tell them to check the power cord. (Yes, that has happened to a person I was helping once. The computer didn’t work, because the cleaning crew had dislodged the power cord. Yeah, we had a good laugh over that one, plus, we didn’t have to call support and get billed \$125.00 hour.)

Don’t hurry. Make sure the user shows you exactly what they did, to rule out the possibility of “user error.” If you do find it was “user error,” be gentle. The goal is to show the user the correct way to deal with the situation, without intimidating or scaring them. However, this is a double-edged sword. You don’t want your users to become “overconfident” to the extent that they start randomly trying to “fix” the problem, often making it worse. You want them to learn the right thing to do instead of adding error to error. (A perfect example of this is the quite common tendency for Word Perfect users to “disconnect” themselves from the network, since the geniuses at Corel put the “network disconnect” icon right next to the “cut and paste” icons. If the user then clicks on “next,” voila, they’re disconnected from the network ... at which point they should call YOU, not try to re-map the network drive.)

Do NOT use even vaguely “technical terms” unless you are absolutely sure your user understands them. Note above, I asked “Did the computer turn on”, not “did the computer boot up.” Using techie language to non-techies has the exact same effect as lawyers using legalese to their clients. It makes the user or client feel stupid, which is the last thing you want to happen. You want to not only answer your user’s questions, but you also want to empower them (and give them a feeling that you’re working together to solve the problem). Feeling stupid definitely gets in the way of empowerment.

I often try to introduce techie terms to users the same way I introduce “legalese” to clients: I use the term AND it’s translation. For example, I might say, “Did your computer boot up (that means turn on)?” just like I might say to a client “And now I’m going to file your answer, that means I’m going to take the papers I just wrote up to the clerk of court.”

After you’ve duplicated the actions the user took, if you can’t address the problem, make sure that YOU write down the actions that led to the problem, and go on to the “I’m stumped” section.

Training: The “How do I do that” type of question

Common How To’s: How to use email, how to do things like “copy and paste” a URL (when it’s a long one & the email splits it), how to use Word Perfect (how do I make a file, how do I save without overwriting, how do I do a merge letter).

The first thing you MUST do is familiarize yourself with every software program installed on your users’ computers which they are expected to use. (All units should have the same software and no user should install or download any other software unless approved.) You’re their in-house expert. You should be able to answer the most basic questions, and show your user how to do whatever it is they want to do, or, alternatively, inform them that the program won’t do what they want it to do. (At that point, you need to figure out what task they’re trying to do and if

Ask Ms. Techie – continued

there's another way to do it, which is a longer discussion than we have time for here.)

If possible, go to the user's workstation and go through the problem with them. Make the user do the keystrokes. It does no one any good for you to sit down at their computer, type a bunch of commands as fast as you can, and then say, "There, that's how you do it." They won't have grasped what you did. (The major complaint users have about tech staff is that "they go too fast.") And worse, they'll ask you the same thing next week. Take them through the steps, slowly, one at a time. Then, when they've succeeded in the task (sending an email, creating a merge letter), get them to do it again. And, once more for good measure. (My rule of thumb is to get the user to repeat the task three times and they own it.) If you get a lot of questions "over the phone" from users in other offices, it's more difficult, of course, to monitor their keystrokes: about all you can do is do the steps one at a time yourself, telling them each step and waiting for them to complete it before the next. In between each step, ask "what does the screen say (or look like) now" to make sure they're keeping up with you.

NOTE: Your office should have a training program in place, to familiarize new staff with the installed programs, and to train all staff on new programs that are installed. Unfortunately, in the world of legal services, funding is usually not available to train all staff, so it may well be up to you, the resident CRP, to help assure all staff is able to effectively use their software. If your office hasn't done so already, it would help to do a quick survey of your users to see what their skill level is (which can range from "I can't even turn it on" all the way up to "I could program it myself.") Get your manager's permission first, of course. I'll be going into how to set up a "mini-training" and ongoing skills checks for your users in a later article.

I'm stumped, what do I do now?

Finally, what if your users have a question you can't answer? First and foremost, admit up front that you do not know the answer, but you'll do your best, time permitting, to find out. Then, look in the "help" section of the program, or, the hard copy manual. You might also try the web site for that program, which often has a FAQ. If you still can't find the answer, you can call tech support for the program, of course, but, I find it easier and quicker to go to one of the online "help" sites, post the question, and wait for the answers to roll in (often within a half hour).

If you're worried that your users might think you're "dumb" for not instantly knowing the answer to everything, don't be. I've found that computer users, like clients, are much more impressed with the CRP (or lawyer) who says "That's an excellent question! I'll do some research and get back to you" than they are with someone who pretends to know the answer and doesn't ... and worse, gets "caught out" later on with giving bad information. Remember...there may be no such thing as a bad question, but there can definitely be such a thing as a "bad answer".

Some of Ms. Techie's Favorite Online "Help Sites"

Tech Soup's web board

<http://techsoup.coolboard.com/category.cfm?oid=605537432148>

The Internet Help Desk

<http://w3.one.net/~alward/>

Free service designed to offer help to both beginning and advanced Internet users. You'll find expert tools combined with advice on troubleshooting software and connection problems.

Help on the Net

<http://www.helponthe.net/>

Motto: "There's no such thing as a stupid question, but they're the easiest to answer." Has forums and a list serve where volunteer "support guys" answer questions free

Cyber Tech Help

<http://www.cybertechhelp.com/>

Offers free computer help and support for all Windows & Macintosh Operating Systems, PC / Mac Hardware, PC Networking, Applications, Web Design, Internet /Browsers / E-mail, Virus & Trojans, and Game issues. Forums, tutorials.

IMHO: Mozilla is the Cat's Meow

It's no secret to this community that I am becoming an ardent if not obnoxious proponent of open source software. If a free technology option is available we, in the legal services community, owe it to our clients to at least consider it. Money saved on software licenses can be spent on real legal help. Besides, the open source model just jibes so well with my mojo. What can I say, I'm just an open source kind of guy. So in order to be true to myself and our clients ;-) I recently decided to take a closer look at Mozilla: the open source version of Netscape Communicator my favorite browser suite. I've been using the Mozilla 1.0 for about a month now and I have been very impressed.

For the uninitiated, Mozilla is the open source older sibling of the Netscape Communicator developed by the non-profit Mozilla Organization. Currently, the Netscape browser suite is built on top of the cross-platform (XP), open source, Mozilla browser-suite. In effect Netscape is a closed source, proprietary, customized Mozilla browser suite. AOL's Netscape division grabs the Mozilla source code, adds its own and third party products such as Net2Phone and AIM, and then puts its own Netscape branding on the added-too and customized Mozilla-base. Mozilla 1.0 was released in June 2002.

I was an early adopter of Netscape 6 when it came out and it gave me nothing but trouble. So much so that I uninstalled version 6 and have been running 4.7 up until about a month ago (when I installed Mozilla). So when I read that Netscape 7 was coming out I was a little wary about installing another new release. In doing a little research on the Netscape 7 release I discovered Mozilla 1.0. Every review I read claimed this release to be very stable and so I closed my eyes and dove in again. I have been running Mozilla day in and day out as my primary browser, email and address book and have been pleasantly surprised. All the problems with Netscape 6 have disappeared and it has several new features that I really like.

After a couple of weeks with Mozilla I've discovered that I can't live without **tabbed browsing**. This spiffy little feature allows you to open up multiple browser "tabs" and switch between pages without having to switch windows. Tabs also allows you to open links in background. The idea is simple--instead of having new tabs open and take focus immediately, you can click a few links and have the tabs load while you continue reading the current

page. This more closely matches the behavior I want. When reading a page, I often open links in new windows so that I can look at them later and not be distracted from the current page. When doing this with new windows I have to explicitly return focus to my previous page. And here is a feature I just discovered that I really like: You can also use group tabs with the book mark feature to create a book mark that opens up multiple tabs at once. .

Pop-up blocking. Mozilla 1.0 has a pop-up window blocking feature. Need I say more.

With this release of Mozilla that is based on a XML programming environment it has become as much a development platform as it is a software application. As a result there are **hundreds of add-ons** developed or in development for Mozilla. A couple I really like are the calendar (that supports a web based central calendar file) and the Jabber instant messaging and whiteboard client. You can find all of the enhancement projects on either mozilla.org or mozdev.org.

As it is, the base Mozilla release ships pretty plain vanilla: some of the spiffier enhancement haven't been incorporated into the primary Mozilla build. for example, it doesn't include the calendar or jabber client and doesn't even ship with a email spell checker (because of some weird licensing issue). If you want some of these great enhancements you have to download and install them separately. So in order to make it a little easier for folks to install and use Mozilla and to test the true open source extensibility of the platform we decided to package some of the enhancements that I like into our own Poverty Law Edition of Mozilla or LSMoz. You can download a copy of LSmoz here. If this "rolling your own" approach works it may be something programs that have to deploy a browser suite across many desktops want to consider.

Even if you don't want to roll your own, I think Mozilla is a browser suite worthy a LStechie's consideration.

IMHO,

Steve Gray
LStech.org

Update on the Hotline Outcomes Assessment Study

– Robert Echols, Consultant

The Hotline Outcomes Assessment Study will be completed this fall. The Study's Final Report will be posted on the Web sites of NLADA and CLASP and major findings will be discussed at a workshop at the 2002 NLADA Annual Conference. Announcement of the release of the Final Report will be made on related list serves, including those for LSTECH and Hotlines.

The Study involves interviews with a sample of 2000 Hotline clients, 400 clients each from five different Hotlines: CLEAR in Washington, Legal Aid and Defender Association in Detroit, Legal Aid Society of Orange County, CARPLS in Chicago, and the Center for Arkansas Legal Services. The results of all interviews, along with the original case records from the Hotline that provided the services, were reviewed and assessed by an experienced legal services attorney.

The data gathered from the interviews is being analyzed to answer basic questions about Hotline effectiveness: Do clients understand the advice they receive? Do they follow up on advice and referrals? What kind of outcomes do they obtain to their problems as a result? Are particular types of callers (grouped by demographics and case type) more likely to experience favorable outcomes? Are certain types of Hotline advice or services more likely to result in favorable outcomes?

The Study is being conducted for the Project for the Future of Equal Justice by an independent social science research firm, the Center for Policy Research in Denver, with funding from the Open Society Institute.

For additional information contact Bob Echols, echols@suscom-maine.net, or Julia Gordon, jgordon@clasp.org.