



Your Phone System: Move, Upgrade or Replace It?

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For most businesses the phone system is still their primary means of communication with their customers and vendors.

When you're planning to move your office, the one question that invariably arises is, "What should we do with the phone system? Move it or replace it?" If the system is less than two years old, and is still working well for you, the easy answer is probably "Move it," and you don't have to read any further.

However, if you hate your current phone system (and everyone else agrees with you), replacing it doesn't have to be a foregone conclusion. It may not meet your needs at the moment, but there may be a number of ways to improve its performance and features. You should fully explore an upgrade before deciding that your phone system is inadequate for your needs.

You may be thinking, "Well, that sounds easy enough—but what's exactly involved in an upgrade? How do I know what I really need?"

The Big Four Questions—Can Your Phone System Pass This Test?

The following four questions will help you find out what you need to know about upgrading or replacing your phone system. They're surprisingly involved and answering them may not be easy, but will help you determine exactly what you need and why.

- Can the system handle the incoming lines and telephone sets that you need?
- Are there certain features or functions you want that you can't access currently?
- Is the system still being sold?
- Is there more than one local vendor to offer support?

1. Do you have enough station telephones?

If you can't seem to get any more phones plugged into the system, what's the problem? You have several issues to consider:

- Are the station (phone) cards still commercially available?
- If not, can they be found reconditioned or refurbished?
- Can the new station cards fit in the existing cabinet?
- If not, can the cabinet be expanded or can new cabinets be added?
- Are the telephone sets still commercially available?
- If not, are they available reconditioned or refurbished?

Stations (phones) require several components to work. First, you need a telephone set, or handset. Assuming you own the handsets and the office is wired with telephone jacks to plug into, you need to address the issues inside the switch cabinet. This is where the station cards live. Each card can handle a certain number of stations. Usually smaller key system cards handle four stations, while larger Private Branch Exchange (PBX) cards can handle 8-16 stations each. The cards have to be the same brand as your switch, and must be compatible with the model of your phone system.

This is the point where your upgrade plans may be foiled. Smaller key systems are usually not upgradeable beyond a certain number of stations or users. There may be a combination of cards

that can maximize your users while sacrificing trunk lines, but the limit is the limit. If a system will not support more than 30 users and you need 40, no amount of magic will change its limitation.

Another question to ask is whether or not your system is still being sold to new customers. If the manufacturer has stopped making station cards for your discontinued system, you still may not be defeated yet. As long as your system is designed to handle the 40 users you need, there's a solution. Often you can buy reconditioned or refurbished equipment from a number of sources. These components were traded in on new equipment and have been tested and certified by the refurbisher (if you can trust what they tell you). They usually have the same warranty as newly manufactured components. Costs are 1/3 to 1/2 the price of new cards, if new cards are still being made.

If your system can handle the number of users you need, and you can physically upgrade the system by adding station cards, you've passed the first question.

2. Do you have the number of phone lines (trunks) you need?

Do your employees complain that there aren't enough outgoing lines? Do customers complain they get busy signals when they try to call you?

These are signs that you don't have enough incoming lines, or trunks. You may already be painfully aware that you need more incoming (CO) lines. Most smaller systems have a limit to the number of CO lines they can support. If this limit is 8 and you need 15, you'll have to replace the system. Otherwise, you can buy new cards for your new incoming lines, called trunk lines. These will be installed in the cabinet next to the station cards.

If things are still looking positive at this point, you just need to order some additional lines. This is an issue to take up with the local phone company. These are usually POTS lines, also known as plain old telephone service lines, or business lines that you rent each month.

The incoming lines are fed into the switch by way of the trunk cards. Each card will typically handle four or more incoming lines. Can your system handle more cards? Back to the same old questions to pose to your switch vendor:

- Are the CO line (trunk) cards still commercially available?
- If not, can they be found reconditioned or refurbished?
- Will the new trunk cards fit in the existing cabinet?
- If not, can the cabinet be expanded or can new cabinets be added?

You can see by these questions that you need to know your needs for station cards as well as trunk cards. Can the cabinet currently take expanded to take them? There are additional considerations. The variety of cards offered is usually sufficient to allow good flexibility in combining the trunk cards with station cards.

Something else you should consider is the number of cabinet slots you're using with upgrades. When you add cabinets to each other, the first slot usually requires a power supply, which is a card that takes up a slot. Voice mail also takes up a slot in some systems, so there goes a few more valuable slots. More upgrades take up more slots.

Assuming your system can be physically upgraded with enough station and trunk cards, you're ready to move to the third question.

3. Can your existing system handle digital or T-1 lines?

Certain calling features require digital rather than analog lines. These are the incoming CO lines you rent from the phone company. POTS lines are analog. Digital lines are different. Rather than

transmitting voice energy in wave form, a digital line converts the energy into data, delivered in a stream of binary digits, or bits. These signals are more discreet and less prone to errors caused by normal impairments to analog voice transmission. Consequently, many of the fancy features you want—all the bells and whistles—require digital lines.

The quality of service in digital lines is more demanding. The signals still travel over the same copper wires into your building, but the lines are conditioned at the main phone office for your location to reduce noise and improve signal clarity. Since it costs the phone company more to provide this digital service, you can expect to pay more than you would for POTS lines. (moved next line down to begin new pp..)

This has driven many companies to consider T-1 or ISDN services, which are conditioned lines of much greater bandwidth. The cost of a T-1 or ISDN line can exceed \$400 per month, not including the equipment required to accept the signals (routers and DSU/CSU units). This cost is added in the form of a monthly lease or rent payment. While this initially sounds more expensive than POTS lines, these lines add a great deal of flexibility. What's the break point for selecting one type over another? When you need more than 8-12 POTS lines it's usually more economical to get a T1 because it provides 24 trunks. Also, part of the bandwidth can be dedicated to voice applications, while big chunks can be reserved for data transmission, wide area networking or Internet connectivity. This has great appeal to many users.

The bottom line is this: If you want digital service from the phone company, your phone system must have the capability to handle digital lines. There are digital cards that would be used in place of analog cards (if your system has the capability). Some systems can handle both analog and digital lines at the same time but others won't. If you want them, your phone system must also have the capacity to accept T-1 or ISDN service. These are special cards that fit inside the switch cabinet. Some systems will handle the router or CSU/DSU function within the switch cabinet as well. Others use external boxes.

If you need features or functions that require digital service, and your old switch has the capability and there's room in the cabinet for the digital cards, you're on the road to keeping the old system. Let's go to the fourth question.

4. Can your existing system handle these popular functions?

A popular excuse for replacing a phone system is its inability to perform basic functions needed to run your business. But just because they're not currently installed doesn't mean they aren't available in some form. Here's a list of the most popular functions:

- Voice mail
- Automated attendant
- Custom calling features
- Speakerphones
- ACD (automated call distribution)
- SMDR (station message detail recording)
- VoIP (voice over IP)

Keep in mind your wish list of features and functions probably won't be entirely fulfilled by any single phone system. Deciding between makes and models is a trade-off between costs and capabilities. Some considerations are detailed below.

Voice Mail

Voice mail integration is a key issue to consider in whether to upgrade or replace. If your system doesn't have voice mail, it can be added either through a matched system offered by the same manufacturer, or by a generic system that works with most brands. There may be compatibility

issues with the generic solutions, such as the voice mail system failing to light the “message waiting” lights on the telephones. There are other more serious and frustrating problems such as:

- Lost messages
- Message recording times are too short
- Premature call terminations
- Inability to remotely set options or record outgoing messages
- Severe limits to the number of simultaneous users
- Not enough message storing capacity (mailboxes fill up quickly)
- Difficulty in learning or using the system

These problems can be experienced with any voice mail system, not just the generic versions. The most common problem is “maxing out” the system. Voice mail systems are sized by two factors:

- Ports – The number of simultaneous users that can access the system
- Hours - The total length of recorded incoming messages the system can handle

A system may be a “4 by 10,” meaning that there are four ports and 10 hours of recording time. This means although you may have 20 employees, only four of them can check voice mail at any given time. If a fifth employee attempts to check messages, the system will be busy and will disallow access. The “10” refers to the number of hours of total storage capacity of the system, not how many hours each user has. If employees don’t delete their old messages, the system can quickly fill up. This prevents incoming callers from leaving a voice mail message. These are just the type of headaches that corporations want to avoid because they have negative consequences for their business.

If you can buy a properly-sized voice mail system offered by the manufacturer of your switch, chances are you’ll have fewer problems.

Automated Attendant

If you need help answering the main phone number and transferring calls, you can add another receptionist or install the dreaded automated attendant feature. This is an add-on to the phone system that gives callers a recording and instructs them to dial an extension, or select from a short list of options by pressing a number. Many companies refuse to install these systems because they believe a more “human touch” is needed. They find the automated attendant systems too cold and impersonal. It’s a matter of preference. If you simply can’t handle the volume of incoming calls, you may be ready to switch from a live operator to the “press 1 for sales or 2 for customer service” recorded-prompt system.

The justification for installing these systems would include:

- Incoming calls are routed automatically, saving personnel costs
- Employees can check messages remotely without involving a receptionist
- Urgent messages can be set up to immediately notify a secondary phone number
- Outgoing messages can be broadcast to callers (frequently asked questions, announcements, special sales, etc.)

The beauty of this last benefit is that frequently asked questions (FAQs) can be handled without human intervention. Many companies use these systems to provide driving directions to their office, to advertise their latest products, or to make special announcements. This may sound too commercial and inhuman to some, but remember that every caller has the option to “zero out.” Even if a caller cannot (or will not) press an extension or department number, he can always press “0” and talk to a live operator.

Although it may not currently be installed in your system, most phone systems have the capability to accept an automated attendant system. This will probably require a card installation in one of

the cabinet slots (there goes growth space for stations or trunk lines!) If your cabinet has room, it can be installed. However, in most of today's systems, this feature is already combined with the voice mail system. Most third-party products are housed in an external box and are simply plugged into a trunk port in your phone system. These may work just fine and won't take up any more of your valuable cabinet space.

Custom Calling Features

We're well-acquainted with the new custom calling features—those “bells and whistles” that help our businesses function more effectively:

- Caller ID
- Call waiting
- Call forwarding
- DID (direct inward dialing)
- Conferencing (3-way calling)
- Least-cost routing
- Toll restriction
- Last number re-dial
- Speed-dialing
- “Follow-me” service
- Do not disturb
- Executive barge-in
- Custom ringing

It's important to know that not all phone systems accept all these features. Inquire whether your telephone set is built to handle the feature or function. You can't provide caller ID services to a telephone that can't display the number. There are other functions that require a special access button on the telephone. Make sure your system AND your phones are equipped for the desired features. Some features may require digital telephone service. If your system can only handle analog lines, these features won't be available to you.

Usually, any of the custom calling features that aren't standard equipment are sold in packages. Just like the “convenience package” in a new car, you can buy lots of features by adding certain packs to your phone system.

So far, we'll assume that your system can be physically upgraded to handle the cards needed by the various functions you require. We'll also assume that your system can handle the “bells and whistles” and that everything is available in generic form, either new or refurbished. We're moving ahead with the upgrade.

Automated Call Distribution (ACD)

The need for handling a large volume of incoming calls requires a separate unit called an ACD. These are used by sales or customer service centers that handle large volumes of incoming calls. The ACD systems provide management reports for things like number of calls received, call duration, calls completed, calls lost, time spent on-hold, etc. Statistics can be provided for individual stations and departments; and for certain days, weeks, months, days of the week, time of the day, etc.

The ACD is often an aftermarket product designed to work with any larger phone system. If you don't have a PBX, you probably can't have an ACD, but then you probably wouldn't need it anyway.

Station Message Detail Recording (SMDR)

All PBXs and many key systems have the ability to generate reports about outbound calling activity. This requires a special add-on called the SMDR. Recording function is usually an

aftermarket product on a PC platform. Although the name sounds harmless enough, it's really a way to spy on your employees and their telephone habits.

Information about all outgoing calls is captured and reported in a variety of formats. Every outgoing call is logged. Each of your telephone users has a unique address that is stored in the system. Information about each user's calling activity includes number dialed, call duration, date and time. You can tell who called what number and how long they talked. Your system may have the ability to disallow long distance access to certain users, or may allow outgoing call blocking of individual phone numbers or area codes. This is especially valuable for controlling long distance expenses. If you see that Bill calls his uncle in Tennessee every Friday—on the company's nickel—you can take action.

Voice Over Internet Protocol (VoIP)

The latest technology under development is computer-telephony integration, or voice-data convergence, also called Voice-over-IP (VoIP). These are terms that refer to transmitting voice traffic over the Internet to distant branch offices, or over your local area network (LAN) in your office. The voice signals are wrapped in packets that use IP (Internet Protocol), a signaling scheme that is compatible with your LAN and the Internet.

This is not an upgrade to your little key system, but a completely new technology that replaces it. The larger PBX solutions can accept voice over IP gateways to allow phone calls over the Internet to remote offices. Don't call your switch vendor and ask for a VoIP upgrade, unless you already have a PBX. You would buy this type of system to replace your key system or PBX. Or you would add this capability to your existing PBX to eliminate paying for long-distance calls.

This is still a developing technology, and not all users are happy. Here are a few items that prevent many companies from implementing VoIP:

- Security - packets traveling over the public network (Internet) are vulnerable
- Performance - Poor quality and delays are common complaints
- Voice Mail Integration - Erratic and undependable in some implementations

The goal of VoIP is to save money on telephone equipment and to eliminate the cost of leased lines and long distance toll calls. This explains in part why AT&T and Sprint are hurting. A call made over the Internet—as of today—is still free. Replacing your phone system with a box that connects to the LAN can save thousands. Remember, though, before you rush off to implement a VoIP system, there are still trade-offs to consider.

Now that we've discussed several issues about upgrading phone systems, how is your system measuring up? How are we doing so far? Can your system be upgraded to suit your needs? There are still more hurdles that must be cleared before a final decision can be made.

Maintenance and Service Issues

The decision to keep or replace your phone system may be driven by maintenance and service issues. Is it unreliable? Does it require constant service? Have you been paying through the nose every time the system needs servicing? Maybe the answer is a preventive maintenance service agreement, rather than calling just when it's broken. A service agreement should provide some routine maintenance periodically, rather than just an agreement to show up when something's wrong. It will probably include automatic software upgrades to keep the system up-to-date.

Don't include the cost of adding new phones (including adding new cabling drops to support these new phones) into the phone switch as part of the service expense. When you move your office, you'll install new cabling, so this should not be an issue in the future.

Here are some additional maintenance and service considerations.

Software

A phone system is really a computer programmed to switch voice traffic between incoming lines and the stations. Like all computers, it runs on software. This must be upgraded periodically, as the manufacturer releases new software versions that debug common problems, and allow your system to perform more features. These aren't free. Many companies stop buying the upgrades for cost reasons. Does this sound like your company?

Most telephone service providers will require that your system be upgraded to the latest version of software before they will accept it under a maintenance agreement. If you have v1.2, and the latest is v8.1, you will need to have all upgrades installed in order, from v1.3 all the way to the current version. The cost may preclude this option. If you must have the features that the upgrades will bring you, the decision to replace your phone system becomes automatic.

If the cost of the software upgrades doesn't kill the deal, and the missing upgrades are still commercially available, you can be the proud owner of a new maintenance agreement. Not only will the system be less bug-prone by virtue of all those software upgrades, but your service provider will perform break-fix services, preventive maintenance, and software upgrades as needed to keep you trouble-free.

Keep in mind that although you may have to pony up the money for the upgrades and service agreement, you may still discover that the old boat anchor is still as undependable as ever. This is less of a risk if the phone system is still being sold commercially. If it was discontinued long ago, the odds are stacked against you.

Relocation

Your current service provider is registered with the manufacturer as the "vendor of record." This gives him the technical support and service bulletins that would otherwise be unavailable to him. That's a good thing for you. It's a bad thing for anyone wanting to displace this vendor, since the manufacturer freezes them out. So what?

This becomes a big issue if you're planning to relocate your existing system. Your vendor of record must do the relocation, or the maintenance agreement may be voided, and you'll lose all money paid in advance, plus a possible penalty. You probably wouldn't care about this until your vendor of record tells you the cost of moving the system will be more than the cost of a new Lexus. You may laugh at his attempt to extort you for such a simple task, but he's holding all the cards. You must use him to relocate the system or you'll face financial penalties. That's when you get tough and start calling his competitors. They'll be happy to quote you much less for the relocation.

Here's a math exercise. You need to get written proposals for service and for the relocation of the system. Get some quotes for the upgrades while you're at it. You'll need to compute the entire cost of the transaction for each vendor. Include any penalties that your soon-to-be former vendor is threatening. Now you have a financial basis for making the award. The cost of upgrades, service agreement, and the physical relocation all enter into the formula.

Often it's cheaper to dump the current vendor, pay the penalties, and have your new vendor relocate the system. This may be true even if no software upgrades are needed.

The Bottom Line

It may seem as if the process of determining whether or not to replace your phone system is just too complicated and time-consuming. You could go through the research process and still find that price is the final determination. Or, you may simply not want to spend your valuable time trying to save the old system when everyone else wants a new one. And maybe the boss will make the final decision anyway, and you're simply the person authorized to start shopping for a new system.

Regardless of your role in the final decision, if you're determined to help your company make a sound business decision, you should explore all the angles. It may take a little digging, but the payoff is usually big. The upgrade must be physically possible and any features and functions you'd like to add must still be available.

The Bottom Line

The cost to upgrade is usually far less than the total cost of replacing the system—and the users won't have to adjust to new equipment. And in the scheme of things, your employees may appreciate not having to maneuver through yet another change.

About the author

Chip Chapman is a Registered Communications Distribution Designer with over 24 years of experience as an entrepreneur, business owner, speaker and author on the subject of Technology S.P.A.C.E. planning. He has been involved in all phases of building, expansion, adjusting and relocating of businesses large and small. This background has led him to develop unique insights into how businesses can actually prevent potential problems and overcome many challenges when it comes to creating a solid relocation game plan. He can be reached at 614.985.4815 or visit www.ibswebsite.com for more details.