



**Atlantic Telephone  
& Data Solutions, Inc.**  
*...when you want it to **WORK!**<sup>SM</sup>*

93 Clark Street  
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## Buying a Phone System

***STOP here before you SHOP anywhere!***

Your phone system can be a powerful tool that keeps your business in touch with customers, boosts productivity, and builds revenue. And there's never been a wider array of choices. Even single-line phones are packed with features unheard of a decade ago.

Today's sophisticated multi-line systems can answer, sort, automatically distribute, and save calls. They can merge voice mail, e-mail, and faxes into a single device. They can connect credit card readers, modems, and cordless and wireless phones. They can even connect calls to telecommuters working at home as if they were in the main office.

With this bewildering array of choices, how do you begin shopping for a system? What's right for your business? What's the best way to finance a purchase? Should you say yes to a service contract?

A good way to approach buying a phone system is to divide the task: first plan, then shop. We've created this online buyer's guide to help you plan and shop for the right system. Read the topics in order, or jump directly to a topic of interest.

Planning...	Determining the right type of phone system Determining the applications you will need
Shopping...	Shopping for service and support Finding the right dealer at the right price Financing your new system.



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## Determining the right type of phone system

Investing in a telephone system is a vital strategic decision. It's your lifeline to customers and can be instrumental in growing your business. The key to making the right decision is doing your homework up front and looking beyond features and options to build quality and service into your new system.

### First steps

How do you determine the right system for you? We suggest you begin by preparing a work flow chart so you'll know how calls are answered, who needs phones, how often callers are put on hold and other key aspects of your organizational work flow. This first step may be the single most important factor in buying a telephone system, yet it's often ignored.

Other questions you'll want to think about before starting to shop include:

- Are you trying to grow your business? (What business person isn't?) You'll need a system flexible enough to grow with you.
- Does your work force need to stay in touch with each other and customers beyond normal business hours?
- What applications will you need?
- What's your budget (for the phone system itself and add-on applications)?
- Who will provide the training needed to get the most out of your new system?

## Types of Systems

Two major types of phone systems are on the market. Key systems are traditionally used by companies with fewer than 50 employees. Private Branch Exchanges, or PBXs, handle larger workloads. Key systems are based on the old multi-line phones that used several buttons, or keys, to access an outside line. PBXs are essentially smaller versions of the switching equipment used by phone companies to direct calls.

More recently, the distinctions between key and PBX systems have become blurred. Many key systems include features once available only on PBXs, while some other systems operate internally as either a key or a PBX, depending on the software installed. The term "hybrid" is often used to describe systems that resemble both key and PBX systems.

### Digital vs. analog

Most newer, more expensive phone systems communicate via digital technology. This means the sound is transmitted as bits of data rather than audio waves. Theoretically, digital transmission has many advantages over analog transmission. Digital signals are less affected by interference and line degradation, so digital lines have virtually no static or hiss.

But most businesses make outgoing calls over regular analog lines. This means that a digital phone system must convert signals back to analog waves whenever a call leaves



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the office. Because very little sound degradation occurs within the smaller confines of an office, analog systems actually sound about the same as their digital counterparts.

The main reason for buying a digital system is that they tend to be better equipped to connect with accessories such as voice mail or caller ID.

### **Sizing a phone system**

When buying a system, a primary concern is to make sure the unit is the right size for your firm. This means understanding the size constraints of the system.

In the case of key systems, size is usually indicated as a combination of "lines" and "extensions." Lines indicate the total number of outside lines used by your company, while extensions refer to every phone within the company. For example, a system might accommodate up to 12 lines and 36 extensions.

In contrast, most PBXs define size in terms of "ports." Ports indicate the maximum number of connections that can be made to the system. This includes outside lines and inside extensions, as well as accessories such as voice mail or automated attendants.

Even if a system can handle your current phone traffic, you also need to make sure it can handle your future expansion needs. The ideal system should handle expansions in a cost-effective manner. To get a good sense of your future costs, check which items need to be purchased or replaced as your needs grow.

Systems can be equipped with literally hundreds of features for switching calls and directing traffic. But dealers estimate 95 percent of system features are never used within a company. Instead of comparing features on a one-to-one basis, examine how a phone system is used. Limit your search to only those features that improve work flow in the office. This will let you focus on the real differences between systems for your office environment.

Although having the right features is important, even more so is making sure the features are easy to access. Because most employees devote very little time to learning how to use a phone system, it's important that the most common functions be extremely simple and intuitive to use.

### **Selecting the phones**

In addition to the attendant console, three types of phones are available for voice-only service:

- Analog single-line phones with a standard keypad.
- Multi-line phones.
- Digital phones (single and multi-line) containing special function buttons in addition to telephone line indicators and selection buttons.



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## Multi-line vs. single-line

Your company's phone system administrator should determine how many multi- and single-line phones you'll need.

Multi-line phones are convenient primarily because they feature a status display of individual lines and allow several people to answer a common group of lines. Therefore, multi-line phones are appropriate for centralized group call coverage answering positions and for purchasing departments, personnel departments, information areas, and anywhere users will be putting one call on hold while placing another call and switching between the two calls.

In addition, most business executives need multi-line phones, so they can access both published and private extension numbers.

Most multi-function phones can have function buttons programmed either as functions or individual lines. Lines require status indicators, and the administrator should be aware of this requirement when evaluating programmable, multi-button phones.

Integrated voice/data communications also require multiple line support, although a few single-line digital phones can support either operation, but not concurrently.

When deciding which type of phone to assign to the typical user in your company, the administrator should consider that a phone that has call waiting, call hold, and conferencing features can usually eliminate the need to have more than one line installed on it.

## Trunk requirements

In addition to the number of phones you think you'll need over the next 12 months, determine off-premises trunk requirements to local and long-distance service provider central office (CO) switching facilities. Identify trunking requirements for both incoming and outgoing call traffic volumes. Trunk carrier port interface requirements must be further defined by the following categories:

- Public direct outward dialing (DOD) and direct inward dialing (DID)
- Analog private line (E&M tie trunks)
- Digital private line (T1 carrier, ISDN Primary Rate Interface)
- Foreign exchange (FX) lines\



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## Determining the applications you will need

Companies of all sizes today need more than simple telephone "switches" to conduct effective, productive, customer-focused communications. Now, businesses need true communications *systems* to meet the needs of an ever more demanding marketplace. This includes advanced software applications and add-on equipment that can help you customize your business communications.

Here we describe a few applications that can help turn your business into a high-tech center — in brief and in plain English ...

Automatic Call Distribution (ACD) systems  
Messaging ... Automated Attendants, Voice Mail, Interactive Voice Response  
Wireless Systems  
CTI (Computer Telephony Integration)  
IP (Internet Protocol) Telephony

### Automatic Call Distribution (ACD) systems

An ACD system routes incoming calls among a set of extensions to ensure they are handled efficiently. ACDs are generally used in call centers that process many incoming calls.

ACD systems are designed for high-volume call situations and specialized call-answering agents. ACD systems are used to better manage incoming and outgoing calls. A typical ACD system provides call routing, queuing (placing callers on-hold in order), and call statistics to help you understand who's calling, when and how long they are on the line, etc.

When an ACD is added to your communications system, you can get important operational efficiencies. This is especially true for mail-order businesses or other service companies with high-volume calling.

Today's advanced ACDs use Caller ID to pull customer files and records from your computer database when the call comes in. Recorded announcements also may be used to guide callers to the proper extensions. Some systems are menu-operated, where the caller is given a choice of call destinations.

Many ACD systems are connected with voice mail or interactive voice response (IVR) systems to reduce agent workloads and help redirect calls. The call routing can be based on a variety of factors unique to your business, such as the skill level of individual agents, where the call originated from, the time of day it came in, how long the caller has been in queue, and the availability of other agents to handle the call.

### Messaging systems ... Automated Attendants, Voice Mail, Interactive Voice Response

Messaging continues to be a widely used application for businesses of all sizes. Several types of messaging products are designed to work with your basic communications



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system. These include automated attendant systems, voice mail systems, interactive voice response (IVR) systems, and speech recognition systems.

Recently, many manufacturers have enhanced their messaging systems to provide support for multimedia messaging, such as combined voice mail, fax, e-mail and video.

Automated attendants are especially useful for reducing the incoming traffic load for operators, receptionists and call-center agents. Automated attendant systems generally offer callers a menu for automatically routing a call to the desired answering point (without operator intervention).

Messaging systems support a wider range of services, including automated routing, voice mail and even informational services such as product announcements or directions to your facility. Most messaging systems can be accessed from remote locations, so traveling employees are always in touch. Some systems also offer paging services to alert employees of new messages. Multiple messaging systems can be linked together to support high volume or multiple-location businesses.

For more, see "[Voice Mail Systems: An Introduction](#)".

### Wireless systems

Wireless —or "mobility" — systems are now offered by most major vendors. They work in connection with a PBX or key system and usually include a controller, antennas for radio transmission and reception, and portable handsets. Wireless systems have few integrated features and rely instead on the main communications system for call holding, transfer, voice mail, etc.

The major benefits of wireless communications are (1) user mobility, and (2) improved call answering and coverage. With a wireless handset, you're never out of touch. Wireless telephones are of special benefit in locations where wired phones are not viable or cost-effective, such as large warehouses or outdoor campus areas between building facilities. Industries that use wireless systems a lot include health care, schools, construction firms, car dealers, restaurants, or realty offices and other service companies.

### Computer Telephony Integration (CTI)

CTI is the merging of your telephone and computer system to expand the power of your company's call center, improving the speed and efficiency of customer service. In a typical call center environment, CTI enables calls to be automatically assigned to the most effective, available agent or system. It also prepares that agent with all information he or she needs to handle a specific caller or type of call. When a customer calls in, the account information automatically pops up on the agent's computer screen, streamlining the process of handling customer requests.

CTI also lets businesses personalize options for callers and eases the process of transferring callers and their account information between agents and departments.



## IP Telephony

More and more today, businesses want to consolidate different types of communications traffic — such as voice calls, data transmissions, and video conferencing — onto a single network service. This can simplify the communications process (fewer lines and network providers to manage) and cut the costs of calls.

Internet Protocol (IP) Telephony is helping to make this possible. IP Telephony is the process of making standard public-network calls over data lines, like the Internet. Through IP Telephony, businesses can save significantly on fax services, for example, or on sending financial data and other large files. Newer software in the market now allows remote and traveling workers to take advantage of IP Telephony from either desktop or laptop computers.

## Shopping for service and support

When it comes to service and support for your new telecommunications solution, selecting the right post-warranty service plan is key. Ask your sales representative about the options available for your post-sale service and support.

Some questions you should consider when evaluating the support and service you receive:

- Who will be doing the installation? Is it being subcontracted out? How long will it take?
- Who will provide the training and how long will it take? How many hours are included in the quoted price?
- What kind of coverage is provided during warranty?
- What kind of coverage is provided in the post-warranty service plan?
- Can an ongoing service and support plan (i.e. for the period after the warranty expiration) be included with your total package?

*To ensure that your business receives the best service value possible, we suggest you ask the following questions:*

### **On-site service response**

- What is the time commitment to have a technician on-site for Major Alarms? For Minor Alarms? How are Major Alarms and Minor Alarms defined?

### **Out-of-hours support**

- If you request or need an on-site visit from a technician, which is outside of standard business hours, what is the time commitment for a response?

### **Remote administration**

- Is there a capability to program the system remotely? How is this billed? What is the response time? What hours is this service available?

### **Parts access -- speed**

- How can you obtain parts? Overnight? Are there extra charges for this?



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## **Helpline and technical support**

- Is there HELPLINE support? What is their level of experience and hours of availability? Is there a limit to the number of calls you can make? If you go outside the limit, how much does it cost? If you do not have a service plan, how much will you be charged per call?

## **Power surge and lightning protection**

- In the event of a system and/or application damaged by a power surge or lightning, do you have appropriate protection in place? Will your company be reimbursed for all damages to equipment - up to and including a full replacement?

## **System security (toll fraud)**

- Does the coverage include screening for potential toll fraud? Does it include active intervention if toll fraud is occurring? Who will do that? What training has that person had?
- What is the charge for toll fraud intervention service if you do not have a service plan?

## **Quality protection – preventing maintenance**

- Does your coverage include all labor charges associated with proactively scheduled preventive maintenance occurrences?
- Is there an extra charge if you need this work to be performed outside of business hours?

## **E-services web site**

- Will you have full access to a web-based Customer Service Support site? Does it provide important services such as ordering replacement equipment, creating a service request, checking on a ticket status, downloading software, electronic product information and technical bulletin boards?

## **Training**

- What types of training are offered? Are they available on CD ROM and videotape? How much do they cost?



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## Finding the right dealer at the right price

Having done your homework, you're ready to start "kicking tires." Where do you start? First, find a company and a sales rep who's interested in solving your telecommunications challenge. Do comparison shopping with your business associates – ask them which telecommunications equipment company they chose and why. Check the Better Business Bureau and get references. Look for "test drives" of equipment in consumer and telecommunications publications.

### Qualifying the dealers

Virtually all phone systems require the assistance of a dealer for programming and installation. As a result, finding a good dealer can be the most important part of the purchase, since any phone system you choose needs to be properly installed for optimal performance.

The most important consideration in choosing is the number of installations the dealer has completed with your system. A dealer who has installed many of the same systems will be much more familiar with the problems that can occur.

Ideally, the system you are considering should be the best-selling brand sold by the dealer. Knowing that the dealer is committed to the line, you can be assured of a long-term source for service. You should also inquire about the dealer's specific installation experience: Ask about the size of the companies involved and what options or features were added. Also, make sure you obtain a list of references, including installations completed in the past year, so you can ask about experiences in detail.

### Submitting an RFP

When you have identified three to five dealers and systems that meet your needs, you are ready to ask for written proposals.

The proposal is a written explanation of the dealer's installation plan. It includes details on the system capabilities and costs, installation time frames, as well as arrangements for future service. Proposals are obviously much more useful if they follow a similar format and content, allowing you to compare easily across vendors. A simple way to make sure this happens is to write your own request for proposal (RFP). The RFP explains to the dealer the type of proposal you are interested in receiving and includes the information a dealer needs to know about your firm to make appropriate recommendations.

### Pricing

While the smallest systems may cost a few thousand dollars to install, the price tag for more complex models can quickly climb to tens of thousands of dollars. Phone system prices vary based on four factors:



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1. **The central cabinet.** This cabinet controls and oversees the entire phone system. Prices differ between systems and go up as cards and accessories are added. A small central cabinet can cost as little as \$3,000, with the price increasing considerably for larger systems.
2. **The actual phones.** Most systems can be equipped with several types of phones. The least expensive sets may cost less than \$100 but can make accessing features very difficult. Some "executive phones" sell for many times the standard price. These phones can make using the system slightly easier, but are more often a significant source of profit for the dealer.
3. **Wiring and installation.** It can be inexpensive to install wires in an unfinished building. But installing wiring through already finished walls can quickly add up.
4. **Everything else.** This includes training, programming, service and future modifications. Pricing is usually based on the time these tasks require and can be the most flexible portion of a bid. Sometimes, it is best to compare the hours spent on these tasks with the price tag for the service.

## Additional buying tips

### Get extra wiring installed.

To avoid rewiring down the road, request that plenty of wiring be installed when the system is first purchased. A good benchmark is to ask for at least double the wiring you currently need. While this adds to the cost of installation, the price is only a fraction of what you will face if wires must be added later.

### Look into phone-line rates before selecting a system.

Many local phone companies charge different rates for phone lines that connect a key system versus phone lines that connect a PBX, even though both have essentially the same functionality. Check rates beforehand to see if this may affect your buying decision.

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