



PBX BUYING GUIDE

**KEY CONSIDERATIONS WHEN BUYING A NEW PHONE SYSTEM OR
UPGRADING A LEGACY SYSTEM**

YOU HAVE QUESTIONS.WE HAVE ANSWERS!!

AUTHORIZED PARTNERS FOR:



PBX BUYING GUIDE



HOW TO CHOOSE THE RIGHT PHONE SYSTEM FOR YOUR BUSINESS

While upgrading to a new phone system will bring great advantages, the more options, features, functions and capabilities that are available, the more decisions you have to make. That makes it crucial to thoroughly understand your needs before you buy.

General Considerations:

- Does internal wiring need to be added or upgraded?
- Does our telecom room/closet need to be upgraded or expanded?
- Can we re-use any of the phone equipment we currently have?
- Can we consolidate or eliminate any existing phone lines or circuits?

Here are eight steps to help in that process:

1 Determine how many users, and what kind of users, you need to support.

This isn't necessarily the same as counting the number of phones or extensions you'll need. You may need phones at the reception area or loading dock, for example, but such phones don't represent individual users. And you probably don't want to pay the same monthly fee for those extensions as you would for your sales staffs', as most hosted solutions would require. In addition, if a lot of users are going to be working from home or other remote sites, you'll want a solution that makes it as easy as possible to set up and configure their phones. In fact, such ease of setup may let you use more remote workers than you could otherwise. Either way, a thorough analysis of the number and type of users you need to support is a crucial first step in choosing the right system.



How many users do I need to support?

Main Office **	Branch Office **	Lounge, Lunch Room **
Remote Workers **	Call Center **	Warehouse **
Fax Machines **	Alarm Lines **	

What kind users do I need to support?

Attendants' **	General Office **	Remote Workers **
Telecommuters' **	Call Center Agents **	Work from Home **
Customer Service **		



2 Estimate how many simultaneous calls you need to support.

In general, you may need to handle anywhere from three to five simultaneous calls per every 10 employees for ordinary businesses, to nine or 10 calls per 10 employees for call center-type setups. Knowing this number is important if you're planning to use the flexibility of IP telephony to tailor your telecom service to your needs. For example, with a traditional PBX, your options include buying either individual analog lines or higher-capacity circuits such as T1s. But a dedicated T1 carries 23 voice circuits. If you need to support 24 or 25 calls at a time, you have to buy another T1, most of which will go unused. On the other hand, you can buy SIP (VoIP) trunks that run over your broadband Internet connection in the exact numbers you need. Or you can mix and match PSTN and SIP circuits in any combination you wish. SIP trunks can connect directly to your IP PBX. Also, consider how much out-going or incoming faxing your company is doing or if there are peak calling periods throughout the day or the week that must be accounted for. Can you share bandwidth between a data and a voice circuit or overflow to another unused circuit if necessary?

- How many simultaneous calls do I need to support? **
- Typical business (3 to 5 simultaneous calls per 10 users) **
- Call Center (8 – 10 simultaneous calls per 10 users) **
- How many circuits do I need to support my call volumes? **
- T1 ** PSTN** SIP trunks (VoIP) **



3 Decide what kind of phones your different users need.

Just as you don't want to pay a full monthly fee for those seldom-used reception-area or loading-dock extensions, you probably don't want the most expensive multi-button phones for all your extensions either. A lot of employees may need little more than a dial tone, voice mail and the ability to transfer calls. Others will need multiple lines, speakerphones, programmable keys, bright color LCDs and more. A more general

consideration is whether you want to have to plug every phone, even those in the middle of conference room tables, into a power outlet. If not, make sure to get models with Power-over-Ethernet (PoE) capability. And if you don't have an extra Ethernet connection for every IP phone you're installing, try to get models with two ports, so users' computers can access the LAN through them. Would some users benefit using "soft-phones" or "soft-consoles", rather than the traditional digital phone set? Are there other applications some users need, such as call-accounting or call-recording capabilities?

What kind of phones/ features do my different users need?

- | | | |
|--------------------------|------------------------|------------------------|
| Basic business phones ** | Speakerphones ** | 2 or multiple lines ** |
| Paging ** | Dual Ethernet Ports ** | Programmable Keys ** |
| Conferencing ** | Wireless Phones ** | Caller ID ** |



4 Determine how much support staff and time you can commit.

PBXs are getting easier all the time to administer and manage. Still, doing it all yourself can require assigning a reasonably tech-savvy person to spend a fair amount of time on the task. The skills and time required will vary according to the type of system involved, particularly when you are totally responsible for all maintenance. Comparing the requirements for each type of system to the staff resources you are in a position to commit will be a big help in clarifying your purchasing options.

- How much support staff and time do I want dedicated to my phone system? **
- How easy or difficult is it to administer the system? Can I administer remotely? **
- How much will the vendor help monitor and maintain the system? **



5 Decide how important service quality, reliability and security are to you.

If you can't afford to lose phone service, even temporarily, you'll need a solution that includes or relies entirely on PSTN connectivity, which provides a dedicated channel or circuit between you and your callers over traditional wired phone lines. The same goes if you need guaranteed voice quality. On the other hand, perhaps you can put up with a bit of uncertainty about how your calls will sound, and feel confident that your Internet provider is reliable. If so, you may want to opt for the savings and features that come with VoIP connectivity, which you can use even if you choose a premise or hybrid-hosted solution rather than hosted service. Most important, think carefully about how willing you are to have all your voice mail messages and prompts stored in a service provider's data center rather than in your own building.

- Can my phone system depend on the Internet for the delivery of calls? **
- Where do voice mail messages, prompts and call records reside? **
- Can I keep analog POTS lines for 911? **
- What are my disaster recovery options? **

6 Analyze your long-distance calling patterns.



This is the other half of the tradeoff between the guaranteed reliability of PSTN service and the savings of VoIP connectivity. Look at how much you currently pay for PSTN phone service, including DID numbers (individual, dedicated dial-in numbers), inbound toll-free lines and unlimited or per-minute calling plans. Add your long-distance charges for calls such as those between branches, if they're not covered by your calling plan, and those to overseas destinations. Pay particular attention to routes that may cost significantly less with VoIP service. With these figures in hand, you'll be ready for the next step.

- How much do I currently pay for long-distance calling? ••
- If you have multiple locations, how much are you paying for calls between different locations? ••
- What are other communication charges and fees I am currently paying? ••



7 Determine which combination of PSTN and VoIP service will best fit your needs.

If you decided above that you have to rely solely on PSTN service, you have already completed this step. Otherwise, start by adding up the costs of extensions and calling plans you would need with a hosted VoIP service. Next, look at the various combinations of PSTN lines and SIP (VoIP) trunks that are possible with premise or hybrid-hosted IP PBXs. Then figure out what your current pattern of long-distance calls, which you analyzed in the previous step, will cost under the different combinations. Don't forget to note which solutions will give you free VoIP calling among your company's branches or sites, as traditionally hosted solutions do not include free VoIP calling among branch sites. Finally, decide what part, if any, of your voice traffic you're willing to send via VoIP in order to save money, and what part absolutely requires PSTN transport for quality, reliability and even safety purposes. And remember, you have the flexibility to mix analog, digital, and IP phone sets into the same phone system.

- How much will I save by moving all my long-distance calling to VoIP? ••
- How much will I save if all inter-branch calls are free via VoIP? ••
- How important is guaranteed quality and reliability in my phone service? ••
- How important is saving money, even if there's a quality and reliability risk? ••
- What will the charges be for DID numbers, toll-free numbers, etc.? ••





8 What are my options for branches and remote sites?

- Can my branch offices share our centralized voicemail?
- Can we transfer calls between offices using our 4 digit extensions?
- Should we route all calls directly to our branch offices or through the central receptionist at headquarters?
- Can we use our WAN/data circuit for voice calls also?

PBX Disaster Recovery

What would it cost your business to lose phone service for a day? Even an hour?

Every business has a "Plan A" for their PBX phone system: where calls come from, where calls are delivered, which networks and providers are involved. What about a "Plan B"?

PBX disaster recovery is one of the most overlooked aspects of business continuity planning – until it's too late. You go to great lengths to back up your data, co-locate your servers, and otherwise protect the vital parts of doing business, but what about the vital link between you and your customers? The PBX.



White-Harris provides PBX Disaster Recovery consulting services to provide complete system backup and failover in case of any emergency. Please call us for a complimentary consultation about keeping your phone system up and running if a disaster strikes.

Making the Right Choice

Going through the above steps will help narrow down your choices. It may in fact eliminate some of the options entirely. For example, if you absolutely need the quality and reliability of PSTN delivery, hosted service won't work for you. In the end, you'll be balancing three main factors. One is payments to suppliers, including equipment purchases, maintenance contracts and telecom services. The second is the quality and reliability of phone service. The third is your ability or willingness to monitor and maintain your equipment entirely on your own. At White-Harris, we can answer all of your questions.



White-Harris, serving the NJ, PA, and DE region since 1994, specializes in Phone System Sales, Support, and Maintenance.

As the only certified Avaya Partner headquartered in South Jersey, we provide superior levels of service and value for the Avaya IP Office, Enterprise Class, and associated Unified Messaging applications. We are committed to maintaining our stellar reputation as a PBX Support and PBX Maintenance provider, and have recently been named as a Certified Samsung BCS and Certified Extreme Networks partner in the NJ, PA, and DE region. Additionally, our versatile services include PBX Assessment, Remote Monitoring, Network Readiness, On-Site Technicians, Cabling, Wireless, Hardware, Overhead Paging, and related Telephony applications.

Our ability to provide exceptional service and support in deploying the latest solutions in IP Telephony, Unified Messaging, and Wireless has resulted in outstanding client retention and growth built upon "Word of Mouth". Whether you are a single location small business, or a multi-site international organization, we can assist with PBX support and PBX assessment to optimize your IP Telephony and unified communications needs.



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WIRELESS, PBX MAINTENANCE CONTRACTS**

CALL NOW FOR FREE PBX ASSESSMENT: 800-678-8533

Sample Projects

Holy Family University

Philadelphia, PA



AVAYA

- Complete upgrade of older Avaya Definity PBX, including Project Management, Installation, Configuration, Cutover and Testing.

Mountainside Hospital

Montclair, NJ



AVAYA

- Complete upgrade of older Avaya Definity PBX, including Project Management, Installation, Configuration, Cutover and Testing.

National Freight Industries

Vineland, NJ



AVAYA

- Supplied, Coordinated, and Installed new Avaya PBX servers
And gateways in branch locations across the United States

Mercy Health System

Conshohocken, PA



AVAYA

- Assist in the maintenance and support of Avaya PBX systems
in various member hospital locations

APPLICATION CENTRAL

HOW CAN MY PHONE SYSTEM HELP MY BUSINESS? HERE ARE JUST A FEW EXAMPLES:

* **Customer Auto Router: Automatically Route Your Calls**

This package offers you the capability to route callers to a particular extension, the operator, or up to five other destinations (including additional extensions or other IVR applications). All destinations can be selected and changed by your system administrator. This package gives you the flexibility to establish two separate routing paths, for example, one for daytime business hours and another for after hours.

* **Appointment Reminder: Automate Your Appointment Reminders**

This application automatically calls patients to remind them of their upcoming appointment. Also, the system asks the patient to confirm that they will keep their appointment. The patient responds by pressing "1" on the telephone key pad if they will be there or "2" on the telephone keypad if they cannot make the appointment. The system produces reports that are sent to the clinic office indicating which patients will or will not make their appointments each day.

The system will allow the clinic to set all calling parameters:

- What hours of the day to call.
- What to do with busy signals, how often to retry.
- What to do with ring-no-answer.
- What to do with answering machines.

* **Account Status Line: Allows Customers To Check Their Account Status**

This application enables customers to make inquiries on their account balance, payment history, or payment schedule. Callers can access the system 24 hours per day/7 days per week and retrieve information about their account. Customer information can only be accessed by a caller with the correct account number. This method insures security and confidentiality. Information provided is accurate and consistent since the system reads exactly what is in the database and cannot misread numbers. The system enhances the services offered patients by expanding business hours without adding staff to support the expansion.

* **Never Miss an Important Call Again**

Avaya EC500 Extension to Cellular is a mobility solution that enables you to receive business calls where you are . . . not where your desk is. Avaya EC500 is an efficient and cost effective solution for reaching mobile workers anywhere in the world cellular coverage is available. Since it is operable with all major cellular standards, such as TDMA, CDMA and GSM, you can install the Avaya EC500 solution across your facilities – without having to think twice about what cellular carrier or cellular standards in use for a given area.

More Applications.....

*** Customer Satisfaction Survey**

The Customer Satisfaction Survey provides a framework for non-technical employees to build their own surveys and received compiled, printed results without ever touching a computer keypad or incurring the high costs of administering and interpreting, paper-based surveys.

Typical applications of the Customer Satisfaction Survey include monitoring caller and customer satisfaction. A business can run up to three different surveys at one time, with up to 30 questions each. The system captures the Touch-Tone responses from survey participants and automatically prints regular reports for each subgroup and the total group.

The Customer Satisfaction Survey can also be designed to accept the caller's comments. This can be extremely beneficial in uncovering newly emerging satisfaction criteria.

*** E-911 Services for Small and Medium Businesses**

E-911 Anywhere Hosted is the perfect E911 solution for small and medium businesses that have an IPT platform and need a low cost, high performance E911 system. Small and Medium businesses need a low cost E911 solution that enables them to meet all State regulations and provide their employees with the E911 protection they deserve. E911 Anywhere™ Hosted, gives companies complete E911 protection in a Software as a Service (SaaS) model. By accessing the E911 Anywhere™ Hosted web portal, enterprises can quickly and easily provide E911 protection for every phone in their enterprise.

*** Call Recording Solution**

OAISYS call recording and voice documentation solutions help to improve risk management, quality assurance, customer retention, dispute resolution and other critical business concerns. We offer superior integration with leading business phone systems, ensuring the right fit for a broad array of organizational needs. OAISYS records calls between businesses and customers, and optionally, related desktop activity through screen recordings. Contact centers utilize these recordings to manage their agents, company processes, quality of service and customer expectations.

Glossary of Telecommunications Terms

ANALOG SIGNAL

A signaling method that uses continuous changes in the amplitude or frequency of a radio transmission to convey information.

BANDWIDTH

The capacity of a telecom line to carry signals. The necessary bandwidth is the amount of spectrum required to transmit the signal without distortion or loss of information. FCC rules require suppression of the signal outside the band to prevent interference.

BROADBAND

Broadband is a descriptive term for evolving digital technologies that provide consumers a signal switched facility offering integrated access to voice, high-speed data service, video-demand services, and interactive delivery services.

CELLULAR TECHNOLOGY

This term, often used for all wireless phones regardless of the technology they use, derives from cellular base stations that receive and transmit calls. Both cellular and PCS phones use cellular technology.

COMMON CARRIER

In the telecommunications arena, the term used to describe a telephone company.

DIGITAL TELEVISION (DTV)

A new technology for transmitting and receiving broadcast television signals. DTV provides clearer resolution and improved sound quality.

DIRECT BROADCAST SATELLITE (DBS/DISH)

A high-powered satellite that transmits or retransmits signals which are intended for direct reception by the public. The signal is transmitted to a small earth station or dish (usually the size of an 18-inch pizza pan) mounted on homes or other buildings.

E-MAIL

Also called electronic mail, refers to messages sent over the Internet. E-mail can be sent and received via newer types of wireless phones, but you generally need to have a specific e-mail account.

INTERNET PROTOCOL TELEPHONY (IPT)

Internet telephony is the use of the Internet rather than the traditional telephone company infrastructure and rate structure to exchange spoken or other telephone information. Since access to the Internet is available at local phone connection rates, an international or other long-distance call will be much less expensive than through the traditional call arrangement.

NETWORK

Any connection of two or more computers that enables them to communicate. Networks may include transmission devices, servers, cables, routers and satellites. The phone network is the total infrastructure for transmitting phone messages.

OVERHEAD PAGING

A system through which announcements can be broadcast throughout a building or area using overhead speakers and the phone system.

PAGING SYSTEM

A one-way mobile radio service where a user carries a small, lightweight miniature radio receiver capable of responding to coded signals. These devices, called "pagers," emit an audible signal, vibrate or do both when activated by an incoming message.

PLAIN OLD TELEPHONE SERVICE (POTS)

An acronym identifying the traditional function of a telephone network to allow voice communication between two people across a distance. In most contexts, POTS is synonymous with the public switched telephone network (PSTN).

PUBLIC SWITCHED TELEPHONE NETWORK (PSTN)

The public switched telephone network (PSTN) is the network of the world's public circuit-switched telephone networks, in much the same way that the Internet is the network of the world's public IP-based packet-switched networks. Originally a network of fixed-line analog telephone systems, the PSTN is now almost entirely digital and includes mobile as well as fixed telephones.

QUALITY OF SERVICE (QOS)

Quality of service is the ability to provide different priority to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow. For example, a required bit rate, delay, jitter, packet dropping probability and/or bit error rate may be guaranteed.

SERVICE PROVIDER

A telecommunications provider that owns circuit switching equipment.

TELEPHONY

The word used to describe the science of transmitting voice over a telecommunications network.

VIRTUAL PRIVATE NETWORK (VPN)

A virtual private network (VPN) is a network that uses a public telecommunication infrastructure, such as the Internet, to provide remote offices or individual users with secure access to their organization's network. A virtual private network can be contrasted with an expensive system of owned or leased lines that can only be used by one organization. The goal of a VPN is to provide the organization with the same capabilities, but at a much lower cost.

VOICE OVER IP (VOIP)

VoIP (voice over IP) is an IP telephony term for a set of facilities used to manage the delivery of voice information over the Internet. VoIP involves sending voice information in digital form in discrete packets rather than by using the traditional circuit-committed protocols of the public switched telephone network (PSTN). A major advantage of VoIP and Internet telephony is that it avoids the tolls charged by ordinary telephone service.