



**SAVE MONEY  
WITH THE RIGHT  
BUSINESS  
PHONE SYSTEM**



## Enterprise Phone System Buyer Guide

Whether you are planning to purchase a new phone system or upgrade your existing system, an investment in business communications is an important decision for any large enterprise. It can also be a complex one, requiring a substantial amount of research.

This guide is designed to help the decision makers of large organizations to compare vendors and make an informed decision. We will be focusing on solutions intended for larger enterprises and businesses that need more sophisticated features than those required by small or midsize businesses.

Enterprise phone systems are fairly complex solutions that can include support for multiple locations as well as advanced contact center features that enable increased availability, automation and integrated management. Such communications solutions can require extensive IT resources and expertise.

An enterprise communication system can be a traditional time-division multiplexing (TDM) based system or an IP-based system, Voice over Internet Protocol (VoIP), for example. Currently, there is a wide range of available business communications solutions in the market, such as Private Branch Exchange (PBX), Key Telephone Systems (KTS) and hosted VoIP solutions.

The first vital step in choosing an enterprise phone system is to assess your company's specific needs. Deciding on a phone system can be more complicated for companies with an existing traditional PBX system. For most companies in this situation, it would be impractical to replace the entire system at once; it is advisable to create a strategy for integrating your current system with the new communications solution. This process begins by identifying and prioritizing your business communication needs and comparing them with the solutions you already have.

Due to the maturity of the phone system market, you will likely find little difference in core feature offerings of various vendors. Pay close attention, however, to how the provider implements those features and the type of support they offer.

Find out what additional functions and features are available with the solutions and vendors you consider. This will help you define a package that effectively addresses your company's unique goals and priorities.



## Should You Choose a Premise-Based or Network-Based System?

A key decision you will face is whether your business communications system will be hosted by a provider or installed at your location. Each choice comes with unique advantages. You will need to consider both your current and your future needs when making this decision. Factors such as budget, company size and structure, and the availability of in-house IT resources should all be considered when selecting the ideal solution for your company.

### Hosted Phone System:

With a hosted system, your communications services will be managed remotely, from your phone service provider's location. Telephony services can be offered as VoIP or over traditional PSTN (public switched telephone network). You will need to have a minimal amount of equipment, such as telephones and routing devices, at your site. Large enterprises that require advanced functionalities in addition to standard features can benefit from having a hosted business phone service.

One of the chief advantages of choosing a hosted service is that it can be a completely managed service, reducing the IT resources you will need to deliver the solution to end users. Some of the benefits you may find with a premise-based solution include:

- Predictable cost of acquisition
- More control over the purchase, installation and operation of the system
- Convenience of readily available in-house expertise
- Ability to incorporate future systems to accommodate your company's growth

A managed solution can be best if you lack sufficient IT support staff. It can free you from the need to maintain equipment and manage a complex system, allowing you to focus on your core business processes. If you anticipate rapid growth in your company, however, a hosted solution could ultimately prove more costly than a premise-based system.



## On-Premise Solutions:

Premise, or network, based communications solutions can offer your company greater flexibility and control over your own applications and feature usage while still providing a carrier-class service with excellent voice quality and performance. Some of the benefits you may see from a network-based solution include:

- Easier growth management
- Fewer concerns about equipment obsolescence
- May require fewer resources to operate and maintain
- Lower, more predictable maintenance and operating costs
- Greater ability to customize phone system features

A disadvantage of on-premise solutions is that they can require a significant initial investment. They can also involve a greater commitment in the way of support and service contracts.

## Cost

The most common pricing model is feature-based pricing, in which you are charged according to the amount of features you need. A different pricing model is used for on-premise and hosted solutions. To avoid unforeseen costs, be sure you obtain a complete breakdown of the price and have a clear understanding of all fees. You might ask, for example, if on-site support visits are included in the contract.

Evaluate the total cost of ownership (TCO) with each provider. Each vendor will attempt to demonstrate that their service comes with a reduced TCO. This can be confusing, so be sure to get all your questions answered. According to Focus Research, roughly half of enterprise phone system buyers discovered additional costs that they had not been prepared for. Remember to include in your calculations expenses such as the cost of hiring and training related personnel resources, for both end users and administrators, as well as the projected costs of installing upgrades and additional services within two to three years.

Expenses related to the implementation and support of your system will ultimately affect the actual cost of owning and using an enterprise phone system, making it substantially higher than the listed price of the system.



The price you will pay for your phone system depends on such factors as how many employees will be using the system, the technology of the solution you choose--whether TDM or VoIP, for example--and the solution delivery model, whether premise-based or hosted. In addition to the regular license fee and implementation costs of an enterprise phone system, there are other expenses to consider when planning your phone system budget. These can include supporting software costs and training costs as well as infrastructure and integration expenses.

The three most frequent unexpected costs that you are likely to encounter when you purchase an enterprise phone system are:

1. Internal hardware, such as replacement equipment
2. Service expenses, such as unforeseen labor costs
3. Licenses for ancillary software to enable such functions as information management or integration

## Choosing Your Vendor

First, you will want to narrow your list of provider options by conducting a thorough check of each vendor's reputation and performance record in regard to reliability, quality, customer service and overall feature set. Here are some key factors to consider when evaluating phone system vendors:

Ensure that the vendor is **financially stable** and able to commit to a long term business relationship. Of the vast number of providers in the communications industry, some operate with a significant amount of venture capital funding, which could eventually put these companies in the position of having to sell to repay their debt. Others may be operating on an extremely limited budget; some of these companies fail each year. Performing due diligence regarding a vendor's financial health may save your company from having to face such situations in the future.

Determine what **infrastructure** you will need to replace. With the right service provider, the transition will be easier. You may not need to discard your entire existing system, especially if you choose a vendor who can help you build a hybrid system. A comprehensive migration strategy will allow you to retain the investment in your traditional system. Your ideal vendor will have the expertise and core product line to carry out such a transition for your company.



Look for a vendor with a clear **commitment** to continued improvement in services and feature offerings. A good provider will adapt with the ever-changing IT environment to provide the optimal communications system for your business.

Choose a provider who can demonstrate **expertise** in various enterprise phone system applications, such as video conferencing, direct inward dialing (DID) number, toll free numbers and calling cards. A vendor's capacity to handle all types of applications can be a direct reflection of the maturity of the company and their range of expertise and experience.

Take advantage of any opportunities to tour the company's **facilities** and meet the people who will be monitoring your network. Most reputable companies will welcome your visit. This will help give you an overall picture of the investments the company has made, as well as their level of customer service.

Obtain **documentation** regarding the company's service resolution procedures to ensure that you are choosing a provider with adequate disaster recovery capabilities. This is an area where some providers cut corners, especially those in the start-up or rapid growth period. They may not have sufficient resources to deploy services at multiple data centers, and they could have single points of failure in their hardware, software or network. Establishing a resilient platform entails a significant initial expense for the vendor, but it is vital if a company is to provide its customers with the golden standard of 99.99% uptime.

Inquire about the vendor's **answer seizure ratio** (ASR), which is a measure of the number of calls properly terminated. This number can provide insight into the quality of the routes the provider utilizes; a good ASR is a good indicator of quality service.

Does the vendor serve **large enterprises** exclusively? Companies dedicated to serving the communication needs of large businesses will have a greater capacity to provide the solutions and customer service requirements of such organizations.



Finally, make sure you read the [service level agreement](#) (SLA) carefully. Give full attention to the details, including those in fine print, to gain a full understanding of the provider's recovery timescales and customer service standards. Choose a provider that will work with you to create a customized, service-specific SLA for your company.

Selecting the best communications provider for your company can seem daunting but it is important to take the time to choose wisely. InsideUp has made the process much simpler. We invite you to take advantage of our unique platform that allows you to fill out a simple [form](#) and receive up to five custom quotes--based on your company's needs--from top, pre-qualified vendors.

## ***Glossary***

### ***CLEC***

Competitive Local Exchange Carrier. A telephone service company that provides local telephone service that competes with the incumbent local exchange carrier (ILEC).

### ***Codec***

Coder/Decoder A technique for compressing information to a fewer number of bits for more efficient transmission and storage (coding), and subsequently recovering the original data (decoding).

### ***CTI***

Computer Telephony Integration.

### ***Delay***

The amount of time it takes for a signal to transfer or for the time that is required to establish a communication path or circuit.



## **FCC**

Federal Communications Commission

## **Firewall**

A firewall is a data filtering device that is installed between a computer server or data communication device and a public network (e.g. the Internet). A firewall continuously looks for data patterns that indicate unauthorized use or unwanted communications to the server. Firewalls vary in the amount of buffering and filtering they are capable of providing.

## **FTTC**

Fiber to the curb. A distribution system that uses fiber optic cable to connect telephone networks to nodes that are located near homes or any business environment (near the curb). The fiber optic transmission is used to provide broadband services beyond the central office, all the way to the last 50-100 feet from the subscriber. The service pedestal is said to be "at the subscriber's curb."

## **FTTH**

Fiber to the home. A distribution system that uses fiber optic cable to connect telephone networks to nodes that are located in the homes of customers. The fiber optic transmission is used to provide broadband services beyond the central office, all the way through the drop wire to the optical node that is located in the customers home.

## **G.711**

A standard analog to digital coding system (coded) that converts analog audio signals into pulse code modulated (PCM) 64 kbps digital signals. The G.711 is an International Telecommunications Union (ITU) standard for audio codecs. The G.711 standard allows for different weighting processes of digital bits using mu-law and A-law coding. The G.711 standard was approved in 1965.

## **G.723**

An International Telecommunication Union (ITU) standard for audio codecs that provides for compressed digital audio over standard analog telephone lines.



### **G.729**

A low bit rate speech coder that was developed in 1995. It has low delay due to a small frame size of 10 msec and look ahead of 5 msec. It has a relatively high voice quality level for the low 8 kbps data transmission rate. There are two versions of G.729: G.729 and G.729 A.

### **H.323**

H.323 is an umbrella recommendation from the International Telecommunications Union (ITU) that sets standards for multimedia communications over Local Area Networks (LANs) that may not provide a guaranteed Quality of Service (QoS). H.323 specifies techniques for compressing and transmitting real-time voice, video, and data between a pair of videoconferencing workstations. It also describes signaling protocols for managing audio and video streams, as well as procedures for breaking data into packets and synchronizing transmissions across communications channels.

### **ILEC**

Incumbent local exchange carrier. A telephone carrier (service provider) that was operating a local telephone system prior to the divestiture of the AT&T bell system.

### **IP Centrex**

IP Centrex is the providing of Centrex services to customers via Internet protocol (IP) connections. IP Centrex allows customer to have and use features that are typically associated with a private branch exchange (PBX) without the purchase of PBX switching systems. These features include 3 or 4 digit dialing, intercom features, distinctive line ringing for inside and outside lines, voice mail waiting indication and others.

### **IP PBX**

A private local telephone system that uses Internet protocol (IP) to provide telephone service within a building or group of buildings in a small geographic area. IPBX systems are often local area network (LAN) systems that interconnect IP telephones. IPBX systems use an IP telephone server to provide for call processing functions and to control gateways access that allows the IPBX to communicate with the public switched telephone network and other IPBX's that are part of its network.



### ***IP Phone***

An Internet protocol phone (IP phone) is a device (a telephone set) that converts audio signals and telephony control signals into Internet protocol packets. These stand-alone devices plug into (connect to) data networks (such as the Ethernet) and operate like traditional telephone sets. Some IP Telephones create a dial tone that allows the user to know that IP telephone service is available.

### ***ISP***

Internet service provider

### ***Jitter***

(1-general) Jitter is a small, rapid variation in arrival time of a substantially periodic pulse waveform resulting typically from fluctuations in the wave speed (or delay time) in the transmission medium such as wire, cable or optical fiber. When the received pulse waveform is displayed on an oscilloscope screen, individual pulses appear to jitter or jump back and forth along the time axis. (2-packet) The short-term variation of transmission delay time for data packets that usually results from varying time delays in transmission due to different paths or routing processes used in a packet communication network. (3-IP Telephony) The variance of inter-packet arrival times.

### ***LAN***

Local-area network

### ***Latency***

Latency is the amount of time delay between the initiation of a service request for data transmission or when data is initially received for retransmission to the time when the data transmission service request is granted or when the retransmission of data begins.

### ***MOS***

Mean opinion score (MOS) is a measurement of the level of audio quality. The MOS is a number that is determined by a panel of listeners who subjectively rate the quality of audio on various samples. The rating level varies from 1 (bad) to 5 (excellent). Good quality telephone service (called "toll quality") has a MOS level of 4.0.



### **PBX**

Private Branch eXchange. A private telephone network used within an enterprise.

### **PSAP**

Public safety answering point. An agency that receives and processes emergency calls. The PSAP usually receives the calling number identification information that can be used to determine the location of the caller.

### **PSTN**

Public switched telephone networks are communication systems that are available for public to allow users to interconnect communication devices. Public telephone networks within countries and regions are standard integrated systems of transmission and switching facilities, signaling processors, and associated operations support systems that allow communication devices to communicate with each other when they operate.

### **QoS**

Quality of service (QoS) is one or more measurements of desired performance and priorities of a communications system. QoS measures may include service availability, maximum bit error rate (BER), minimum committed bit rate (CBR) and other measurements that are used to ensure quality communications service.

### **RBOC**

Regional Bell Operating Company. A United States telephone company that is one of the seven telephone companies that were created as a result from the division of AT&T in 1983. RBOCs are also known as the Baby Bells. The RBOCs were Ameritech, Bell Atlantic, BellSouth, Nynex, Southwestern Bell Corporation, Pacific Telesis, and US West.

### **ROI**

Return on Investment is a financial measurement that compares the profit with the original investment. ROI evaluates the impact of an investment on the telephone company's profitability or operational efficiency: dollars spent compared to benefits gained.



### **SIP**

SIP is an application layer protocol that uses text format messages to setup, manage, and terminate multimedia communication sessions. SIP is a simplified version of the ITU H.323 packet multimedia system. SIP is defined in RFC 2543.

### **SMB**

Small and medium businesses

### **SOHO**

Small office, home office

### **UPS**

A battery backup system designed to provide continuous power in the event of a commercial power failure or fluctuation. A UPS system is particularly important for network servers, bridges, and gateways.

### **VoIP**

A process of sending voice telephone signals over the Internet or other data network. If the telephone signal is in analog form (voice or fax), the signal is first converted to a digital form. Packet routing information is then added to the digital voice signal so it can be routed through the Internet or data network.

### **WAN**

Wide-area network