



Small- Mid-sized Business Phone Systems Comparison Guide

March 2012

Overview

Company	Product(s)	Product Type	Target Environment	Pricing	IP Phone Pricing	How To Buy	Year Founded	Financials	Partner Eco System	Notes
8x8	Virtual Office	Hosted VoIP, Contact Center, SaaS	Small Business, Midsize businesses, SME, Large Enterprise	\$25/month per extension	\$99 - \$350	Direct, Resellers, VARs, Integrators	1987	NASDAQ: EGHT	Over 30,000 customers	Acquired Zerigo 2011
Alteva	Complete Hosted Unified Communications	Hosted VoIP Phone System	Small business, Midsize business, SME, Large Enterprise	Averages \$25-\$30 per seat	Starts at \$200 per phone; feature dependent	Direct, Resellers, VARs, Integrators	1996	Contact vendor	Technology partners include Microsoft & Broadsoft; Global customers on four continents	Partnered with Microsoft to deliver UC to companies of all sizes; also provides hosted OCS, hosted voice enabled Exchange and hosted SharePoint
Bandwidth.com	Phonebooth OnDemand	Hosted VoIP Phone System	Small business, Midsize business	\$20/user per month	\$175 to \$700 per phone	Direct	1999	Private; Carmichael Partners Equity	Over 6,000 customers in the US	Acquired dash Carrier Services 2011
Cbeyond	BeyondVoice Office Edition	Hosted VoIP Phone System	Small business, Midsize business	\$399 per month	Does not supply	Resellers, VARs, Integrators	2001	NASDAQ: CBey	Over 58,000 customers in the US	Target market is companies with 4 to 200 employees; provides local VoIP phone service
M5 Networks	M5	SaaS	Small business, Midsize business, SME, Large Enterprise	\$35/month per extension	\$100 to \$800 per phone	Direct, Resellers	2000	Screw machine, Sheet Metal, Soft metal fabrication, Tool & Die	Machinery, Metal	ERP shop management software
Nuvio	nPBX	Hosted VoIP Phone System	Midsize business, SME	\$45/month per extension	\$55 to \$300 per phone	Direct, Resellers, VARs	2003	Contact vendor	Information not provided	Developed for complex deployments; component-based built on SOA technology
Phone.com	Virtual Office	SaaS	Small business, Midsize business, SME	\$10/month and \$5 for each IP extension	\$100 to \$230/phone and \$5/month	Direct, resellers	Contact vendor	Contact vendor	Information not provided	Comprehensive system for managing manufacturing, distribution and service industries with 30 modules available.
PingTone Communications	Enterprise Service	Hosted VoIP Phone System	Midsize business, SME, Large Enterprise	\$25 to \$45/month per extension	\$150 to \$350/phone	Direct	1999	Contact vendor	Automotive, Consumer products, Medical, Plastics/Rubber	Single-database solution for manufacturing, ERP and supply chain
RingCentral	RingCentral Office	Hosted VoIP Phone System, SaaS	Small business, Midsize business, SME, Large Enterprise	\$50/month for first user, \$25/month per additional user	\$99 per phone; \$360 for four phones	Direct, Resellers	Contact vendor	Contact vendor	Automotive, Chemical/Pharmaceutical, Construction, Consumer products, Electronics, Food/Beverage, Life Sciences, Machinery, Metal, Technology	Cloud (SaaS) versions of the Dynamics family are expected to start to become available with NAV in 2012.
Vocalocity	Small Business VoIP	Hosted VoIP Phone System	Small business	\$15/month per user	\$100 to \$630 per phone	Direct, Resellers, VARs	Contact vendor	Private	Contact vendor	Target market typically companies with less than 50 employees.
Direct, Resellers,	NetSuite Manufacturing Edition	SaaS	Configuration dependant; 3 configurations available and separate add-on modules	Direct Sales, Resellers, Value Added Resellers (VARs), Integrators	1998	NYSE:N	Global partner network	Contact vendor	General manufacturing	Cloud-based integrated business suite for manufacturing

Vendor	Product	Basic Features	Advanced Features	Optional Features/ Services	Business Software Integration	Web App/ Service Integration	Traffic Routing	Broadband Service	Legacy PBX Integration	SIP Migration Option
Alteva	Hosted UC	Administration Management, Conferencing, E911 support, Fax Server, security/password protection options	Contact center support/ module, Desktop software integration, Web app or services integration, Mobile support, Soft phone support, QoS monitoring/ management, Unified Communication Support	Conferencing, Fax server, Contact center, Mobile Support, Soft phone	Microsoft Communication Services; Outlook; optional custom application integration	SalesForce; ACT!; Goldmine and other CRM apps.	Both dedicated network or Internet	Uses either customer's or provider's broadband	Yes	Yes
cBeyond	BeyondVoice Office Edition	Administration Management, Conferencing, E911 support, Fax Server, security/password protection options	QoS monitoring/ management, Unified Communication Support	Mobile Support	No	No	Dedicated network	Uses provider's broadband	Yes	Yes
M5 Networks	m5	Administration Management, Conferencing, E911 support, security/password protection options	Desktop software integration, Web app or services integration, Mobile support, Soft phone support, QoS monitoring/ management, Unified Communication Support	Fax server, Contact center	Microsoft Outlook; TAPI-compliant desktop apps	Internet Explorer; Firefox; SalesForce; NetSuite	Dedicated network	Uses provider's broadband	No	No
Phone.com	Virtual Office	Administration Management, E911 support, Fax Server, security/password protection options	Mobile support, Soft phone support, QoS monitoring/ management, Unified Communication Support	Conferencing	No	No	Via the Internet	Uses customer's existing	No	No
PingTone	Enterprise Service	Administration Management, Conferencing, E911 support, security/password protection options	Soft phone support, QoS monitoring/management, Unified Communication Support	Fax server, Contact center, Mobile Support	Microsoft Outlook; TAPI-compliant software	Salesforce; CRM Lite	Both dedicated network or Internet	Uses either customer's or provider's broadband	Yes	Yes
RingCentral	RingCentral Office	Administration Management, Conferencing, E911 support, Fax Server, security/password protection options	Mobile support, Soft phone support, Unified Communication Support	Mobile Support	Microsoft Outlook	No	Via the Internet	Uses customer's existing	No	Yes
Vocalocity	Small Business VoIP	Administration Management, Conferencing, E911 support, security/password protection options	Mobile support, Unified Communication Support	Fax server, Soft phone	Microsoft Outlook	Microsoft Outlook	Via the Internet	Uses customer's existing	No	No

About Ziff Davis

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Company	Product	Product Type	Buyer Types	Pricing	How To Buy	Year Founded	Financials	Partner Eco System
Aastra Technologies	Clearspan	IP-based PBX, On-premise delivery	Intermediate; Advanced	\$625 per user at 1,500 ports; as low as \$425/user as capacity increases	Direct Sales, Resellers, Integrators	1984	TSX:AAH Corporate	Information not provided
Alcatel-Lucent	OmniPCX Enterprise Communications Server	IP-based PBX, On-premise delivery	Advanced	\$286 per user with a 250 user configuration	Resellers, Integrators, Value Added Resellers (VARs)	1987	NYSE:ALU	2,100 channel partners; operates in over 130 countries
Avaya	Aura	IP-based PBX, On-premise delivery	Intermediate; Advanced	Starts at \$265 per user dependant upon configuration and features	Direct Sales, Resellers, Integrators, Value Added Resellers (VARs)	2000	NYSE:AV	9,200 channel partners worldwide
Cisco	Unified Communications Products	IP-based PBX, Rack/wall mount, Hosted delivery, On-premise delivery	Advanced	Appliances start at \$4,000	Direct Sales, Resellers, Integrators, Value Added Resellers (VARs)	1984	NASDAQ:CSCO	Global reseller network
Interactive Intelligence	Customer Interaction Center	IP-based PBX, Hosted delivery, On-premise delivery	Intermediate; Advanced	\$350 to \$1,000 per user; configuration dependant	Direct Sales, Resellers, Integrators, Value Added Resellers (VARs)	1994	NASDAQ:ININ; 4,000 customers worldwide with revenues of \$166.3 million	Information not provided
Mitel	Mitel Communications Director (MCD)/3300 Controllers	Rack/wall mount, On-premise delivery	Basic; Intermediate; Advanced	Approximately \$400 per user	Resellers, Integrators, Value Added Resellers (VARs)	1974	NASDAQ:MITL	1,600 channel partners worldwide
NEC	UNIVERGE SV8000 Series	Rack/wall mount, On-premise delivery; IP-based PBX	Advanced	Contact vendor	Direct Sales, Resellers, Integrators, Value Added Resellers (VARs)	1899	Parent NEC Corporation has 116,000 employees worldwide and \$37.5 billion in revenue	NEC America has strategic alliances with Intel, Microsoft, Oracle, Stratus and VMWare
Shore Tel	IP Phone System	IP-based PBX, On-premise delivery	Basic; Intermediate; Advanced	Approximately \$500 per user	Resellers, Integrators, Value Added Resellers (VARs)	1996	NASDAQ: SHOR	Over 750 global resellers
Siemens	OpenScape Enterprise Communications	IP-based PBX, On-premise delivery	Advanced	Starts at \$5,000 for server	Resellers, Integrators, Value Added Resellers (VARs)	1848	Parent Siemens AG (NYSE:SI)	720 accredited global partners and over 1 million enterprise customers.
Taridium	ipbx Enterprise VoIP	IP-based PBX, Rack/wall mount, On-premise delivery	Basic; Intermediate	Starts at \$499/single server unlimited-user license	Direct Sales, Resellers	2009	Information not provided	Technology partners include Aastra, bandwidth.com, Cepstral, Sangoma, BEI Gateway, QueueMetrics
Toshiba America Information Systems (TAIS)	Strata CIX 1200 Telephone System	On-premise delivery, Self-contained cabinet	Basic; Intermediate	\$350 to \$500 per user; dependant upon endpoint device	Resellers	1930	Parent Company Toshiba Corporation was founded in 1875, operates a global network of 490 companies, has 203,000 global employees with annual sales over \$77 billion	Global channel partners

Product Specs



Company	Product	Product Type	Operating System	Server	System Capacity	Features	Target Environments		Product Notes
Aastra Technologies	Clearspan	\$625 per user at 1,500 ports; as low as \$425/user as capacity increases	Linux	IBM HS21 blade servers	1,500 up to 100,000 users/node	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	Yes	Carrier-grade pure SIP softswitch for large enterprise environments
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Alcatel-Lucent	OmniPCX Enterprise Communications Server	\$286 per user with a 250 user configuration	Red Hat Linux	Standard Linux systems	Up to 15,000 users per server	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	No	Handles more simultaneous calls than most; Bell Labs is a unit of Alcatel-Lucent
							Supports third-party hardware	No	
							Supports incumbent analog phones	No	
Avaya	Aura	Starts at \$265 per user dependant upon configuration and features	Red Hat Linux	Avaya S800 series	36,000 stations/18,000 SIP endpoints per server	Web-based management, Voice conferencing, API/SDK included, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	Yes	Supports legacy system integration
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Cisco	Unified Communications Manager	Appliances start at \$4,000	Windows; Linux	Proprietary MCS 7800 Series media convergence servers; B-series UC blade servers	Up to 30,000 users per cluster	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing	Integrated with incumbent PBX	Yes	Hosted option available; supports mobility and conferencing
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Interactive Intelligence	Customer Interaction Center	\$350 to \$1,000 per user; configuration dependant	Microsoft Lync Server 2010	Standard WinTel server	100 up to 15,000 users	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	Yes	Hosted version sold direct; on-premise sold via resellers
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Mitel	Mitel Communications Director (MCD)/3300 Controllers	Approximately \$400 per user	Mitel standard Linux	HP, IBM, Oracle(Sun) servers; Mitel 3300 Controllers	10 up to 65,000 users	Web-based management, Voice conferencing, API/SDK included, Web Conferencing, Video Conferencing	Integrated with incumbent PBX	Yes	Partnering with VMWare for virtualized voice services
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	

Company	Product	Product Type	Operating System	Server	System Capacity	Features	Target Environments		Product Notes
NEC	UNIVERGE SV8000 Series	Contact vendor	Linux	Proprietary server with Intel Dual Core Duo 2.16GHz	Supports up to 4,000 endpoints per system	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	Yes	UNIVERGE IP architecture designed for multimedia network unification.
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Shore Tel	IP Phone System	Approximately \$500 per user	Windows, Linux	Windows/Linux based server	1 up to 20,000 users	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	Yes	New in May 2011 update - collaboration tools, increased capacity under a single image, MS Outlook & Exchange 2010 integration, mobile user and native Mac support
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Siemens	OpenScape Enterprise Communications	Starts at \$5,000 for server	Linux	Standard 64-bit servers	up to 100,000 users	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing	Integrated with incumbent PBX	Yes	New in June 2011 update - Web and video multi-party collaboration, video interoperability, mobility solution, Apple client support
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Taridium	ipbx Enterprise VoIP	Starts at \$499/single server unlimited-user license	Red Hat Linux	Standard Intel Pentium servers	15-1,000 users per server	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing	Integrated with incumbent PBX	Yes	Limited video conferencing; managed VoIP services available
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	
Toshiba America Information Systems (TAIS)	Strata CIX 1200 Telephone System	\$350 to \$500 per user; dependant upon endpoint device	Proprietary embedded OS	Self-contained unit	1 - 1,000 users per system	Web-based management, Voice conferencing, API/SDK included, CRM integration, Web Conferencing, Video Conferencing, Soft phone client	Integrated with incumbent PBX	Yes	Offers a range of 8 to 1,200 port IP telephony solutions; Strata CIX series was ranked 3rd in new 2010 shipped IP systems
							Supports third-party hardware	Yes	
							Supports incumbent analog phones	Yes	

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Enterprise Phone Systems Buyer's Guide

March 2012

Introduction

Implementing or upgrading an enterprise phone system is a strategic investment for any large enterprise. If you're reading this document, it's highly likely that you are in the market to purchase a business phone system. By now, you have no doubt discovered that buying a business phone system is not an easy task.

Our Enterprise Phone Systems Buyer's Guide is designed to help decision makers quickly identify their company's specific needs, a critical step to take before contacting vendors, comparing product options and negotiating prices. To reach an informed decision, you should understand the following crucial aspects: 1) phone systems buyer types, 2) product requirements, 3) cost considerations and 4) vendor relationship needs. Our Buyer's Guide is structured around these areas:

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- 2 Top Advice from Other Buyers:** Buying advice directly from buyers like you. p. 8
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- 4 Tools:** Tools and worksheets every phone system buyer should use p. 26

1

Essentials

A phone system is the backbone of voice communication in an enterprise, managing the incoming and outgoing calls of a business. The top vendors in the enterprise phone system market include Avaya, Cisco Systems, Mitel, NEC, ShoreTel and Microsoft. For a detailed background on phone systems and the vendor landscape, see our Phone Systems Market Primer.

Buyer: What type of buyer are you and what are your particular needs?

Product: What product features and functionality should you focus on?

Cost: What expectations should you have for price, indirect costs and ROI (return on investment)?

Vendor: What will you need from the vendor during sales, installation and support?

The most salient points to consider when beginning the purchase of an enterprise telephony solution are:

Buyer

Basic Buyers are those in search of simple solutions that support the most widely used traditional and IP telephony features, such as modular installation and support for the Session Initiation Protocol (SIP). Such buyers typically have limited IT resources and expertise. Many (but not all) Basic Buyers also typically work at smaller companies supporting no more than 500 users.

Intermediate Buyers are those in search of relatively more complex solutions that support greater capacities, more sophisticated features such as support for unified messaging, virtual private network (VPN) connections or enhanced security. Such buyers typically have some IT resources and expertise, and may have experience with IP telephony solutions as well. Many Intermediate Buyers also work at midsize companies supporting between 500 and 2,500 users.

Advanced Buyers are those in search of fairly complex solutions (including support or multiple distributed sites and advanced call/contact center features) that enable increased availability, automation, optimization and integrated management. Solutions that meet the needs of Advanced Buyers can often require extensive IT resources and expertise. Many Advanced Buyers also work at larger enterprises supporting from 2,500 to 10,000 users or more.

Product

Once you have determined what type of buyer you are, you must focus on your phone system requirements. Whatever your Buyer Type, the phone system you decide to evaluate should include the following must-have standard features:

- Call management features including call transfer, call back, call hold, call recording and speed dial
- Auto attendant
- Security features including firewalls and device authentication
- Monitoring features including Caller ID
- Conference call support (with no operator required, at least for small groups)
- Voice mail
- Intercom

Depending on your business's requirements and your budget, look for additional features such as:

- Call routing management features such as call hunt and seamless call transfers to mobile phones (sometimes known as "call flip")
- Contact center features such as automatic call distribution (ACD), interactive voice response (IVR), computer-telephony integration (CTI) and outbound dialing
- Mobility features such as find me/follow me, remote extensions and device-based control of the phone system
- System administration features such as operator console and real-time monitoring
- Multisite management
- Unified messaging (and perhaps other unified communications [UC] features)
- Conference bridge setup and management

After identifying feature requirements, you must determine your preferred implementation. Depending on your Buyer Type and factors such as company size, structure, budget and internal IT staff's availability, you will select your preferred solution model:

- On-Premise – Choose this model if you are looking for control over your business communication, low maintenance and operating costs, and flexibility of customizing phone system features. However, on-premise solutions can require significant up-front investment and commitment to service and support contracts.
- Hosted or Managed – Adopt this model if you don't have the requisite internal IT support and you are looking for low startup costs and freedom from complex telephony architecture as you must concentrate on your core business. However, rapid or significant growth can make hosted or managed solutions more expensive than premise-based alternatives.

Keep in mind that you should be looking for a solution that can serve your business well for years, despite technological evolution and changes in business needs. For example, your company may eventually migrate to Unified Communications (UC). UC is poised to become broadly adopted throughout the business world, as it helps businesses streamline communications, lower telephony infrastructure total cost of ownership (TCO) and increase efficiency. Such plans, if they exist at your company, are at least as important as your Buyer Type to making the best purchase decision.

73 percent of buyers did not notice **any major difference** in the **basic features of phones** offered by vendors.

Source: Focus Research's Enterprise Phone Systems Buyer Survey, March 2009

Cost

Total cost of ownership (TCO) for an enterprise phone system depends on the number of employees, technology of the solution (time-division multiplexing [TDM] or Voice over Internet Protocol [VoIP], for example) and the solution delivery model (on-premise or hosted). Costs associated with implementation and support will influence the true cost of owning and using an enterprise phone system, ultimately making it much higher than the listed price of the system.

In addition to the standard license fee and implementation cost of an enterprise phone system, there are other costs to consider when budgeting phone system TCO, including:

- Auxiliary software costs
- Training costs
- Integration costs
- Infrastructure costs

Hosted and managed services have lower start-up costs than on-premise systems. However, large or growing enterprises may find the TCO of a hosted or managed service over time to be higher than an on-premise system. That's because the upfront and one-time set-up costs for an on-premise system can be amortized over its multi-year lifespan.

- Internal hardware, such as equipment replacement
- Service, such as unexpected labor
- Licenses for supplementary software for functions such as information management or integration (i.e. a SQL database)
- Upgrades to their Local Area Network (LAN) or Wide Area Network (WAN) to ensure good voice or video quality

Vendor

Selecting the right vendor is as important as selecting the right solution. Each enterprise has unique issues related to integration with its existing network and its own approach to a business-wide rollout — and a vendor's role is crucial in addressing these issues.

The 3 most important attributes that to consider while evaluating vendors are:

- Vendor's business-specific customization expertise
- Vendor's support policies
- Vendor's focus on innovation and the latest technologies

Approximately **51 percent** of all Enterprise Phone System buyers **experienced indirect costs** that initially were not taken into account.

Source: Focus Research's Enterprise Telephone Systems Buyer Survey, March 2009

Experienced buyers rated **'cost of the solution'** (23.1%), **'reputation of the vendor'** (20.5%) and **'level of customization offered by vendor'** (10.3%) as the **top reasons for selecting a vendor.**

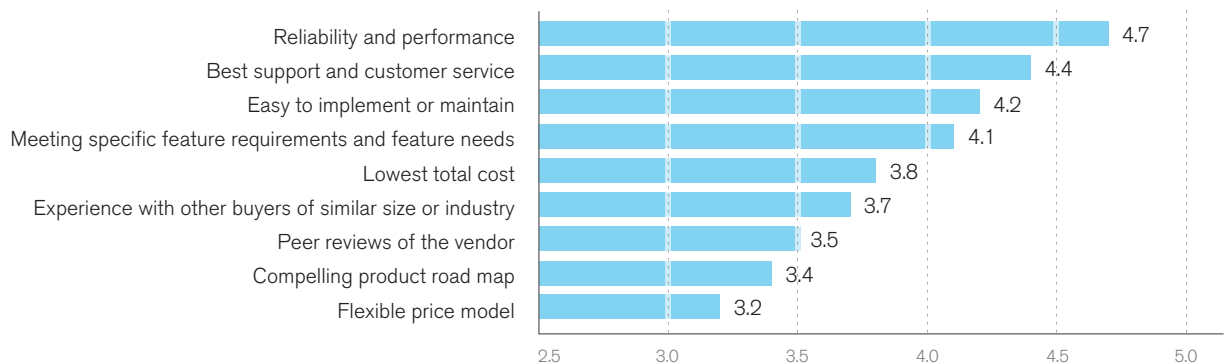
Source: Focus Research's Enterprise Telephone Systems Buyer Survey, March 2009

A vendor's reputation, previous track record, flexibility in pricing and diversity in product offerings are other factors to consider. Fortunately, social media and online communities can help immensely in your efforts to gather information about vendor reputations and relevant experience, good and bad.

After you select a vendor, you'll still need to put a detailed and unambiguous Service Level Agreement (SLA) or similarly comprehensive, enforceable contract into place as soon as possible. You will also need to prepare a comprehensive checklist of key to-dos for the implementation process, and to roll out the telephony solution across the enterprise in a phased manner. These tasks will benefit from the assistance of a reputable, experienced and trustworthy vendor (or that vendor's equally credible channel partner).

In our Business Phone System Buyer Monitor 2009 survey, we asked buyers to rate the importance of criteria observed when purchasing a business phone system (BPS). The survey revealed that buyers considered "reliability and performance of the product" and "support and customer service from the vendor" as the key criteria. This data is congruent with the fact that large enterprises demand products having enterprise-wide deployment and usability. In addition, "customer support" is another top buying criterion among organizations.

Top Criteria Used by Enterprises When Selecting a Business Phone System



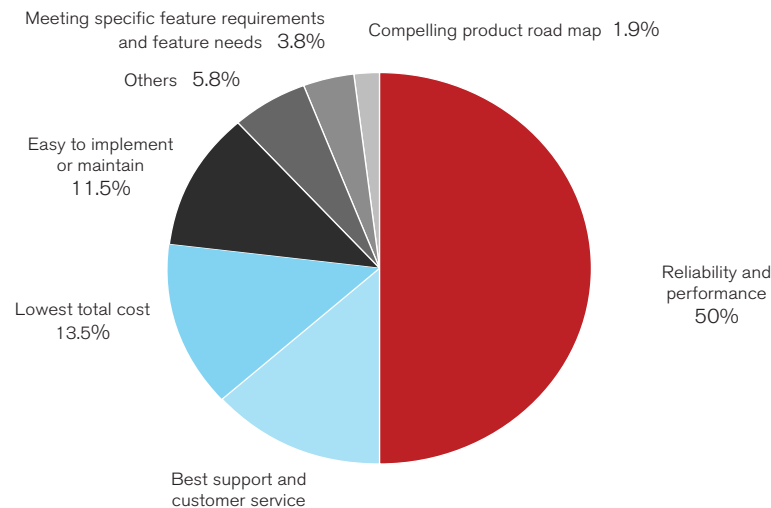
Our buyers rated advanced telephonic features on a scale of 1–5, with 5 being the most important.

Interestingly, the usual frontrunner in rating criteria — “cost” — was surpassed by “reliability and performance.” The latter was cited as the most influential criterion by 50 percent of respondents. This shows that reliable operation of a phone system after enterprise-wide installation is of utmost importance. The pie chart below provides a snapshot of the breakdown of influential criteria as cited by users.

To accurately assess your needs during the purchase process, follow this four-step plan:

- Decide your Buyer Type;
- Focus on basic and relevant advanced product features;
- Anticipate total costs;
- Study vendor attributes such as expertise and maintenance and support practices. These will all help you make an informed purchasing decision.

Most Influential Criteria When Purchasing a Phone System



Source: Focus Research's Enterprise Telephone Systems Buyer Survey

2

Top Advice from Other Buyers

Our analysts and experts speak with thousands of buyers every month. The following advice comes from “real-life” buyers of business phone systems.

“

Definitely go to previous customers to understand what the implementation process is like and also what their issues were with the vendor. Then incorporate all those issues into the SLA.”

Johnny

Manager (IT Dept.), Agricultural and Mechanical University
Replaced an existing phone system



“

Do not assume that the most reputable solution is the most expensive. The cheapest solution ended up being about the same cost after you evened out the features!”

Robert

Manager (IT Dept.), Legal Services Company
Purchased a Scalable Phone System

“

Spend the time to get a formal written agreement on project implementation. Preparing a road map and schedule for deployment will save you a lot of headaches.”

Robert

Supervisor, Manufacturing Company
Replaced an existing phone system

“

Concentrate on reliability and ease of programming. Also look out for the cost of additional upgrades and applications that were not originally supported.”

Joe

Engineer, Retail Products Manufacturer
Purchased a phone system for new offices

“

Hire a consultant. It is worth the money. Most people do not know enough about VoIP and what will fit with their own infrastructure.”

Ronald

VP, Construction and Architecture Company
Replaced an existing phone system

“

Make sure you know everything that is wrong with your current system and what the total cost is before you start researching to upgrade to VoIP.”

John

Engineer, PCB Manufacturer
Purchased a phone system

“

With phone systems it is all about reliability. High-end features do not matter if the system is not working properly. Having a local vendor nearby also raises confidence.”

Kathy

VP, Financial Services Union
Replaced an existing phone system

3

Buying In-Depth



As mentioned in the prior section, the best way to accurately assess your needs during the purchase process is to follow this four-step plan: Decide your Buyer Type; focus on basic and relevant advanced product features; anticipate costs; and study vendor attributes such as expertise and maintenance and support practices. This will help you make an informed purchasing decision.

Buyers

Although the details of any given business's phone system needs are unique, some fundamental qualities allow us to divide BPS buyers into three groups. Identifying with a buyer group will help you prioritize which feature, cost model and support considerations to focus on while working with vendors during the purchase process. In our product, cost and vendor sections, you will find special considerations each buyer type should make. See the Buyer Type Worksheet in the "Tools" section to identify your Buyer Type.

Keep in mind that your organization may share characteristics of more than one buyer type. Formulate a plan that incorporates your unique needs as you select a product and a vendor.

Which Buyer Type Are You?

Basic Buyers:

- Tend to have basic voice communication requirements, have a simple structure and are most likely to have their entire workforce located at a single location/campus
- Are more likely to stick primarily to standard features with minimal need for advanced features
- Tend to be cost-conscious
- Should look for an enterprise phone system with a solid set of core features that can be implemented in the easiest and cheapest manner

Intermediate Buyers:

- Tend to be enterprises with complex requirements and are more likely to have their workforce/offices situated in multiple locations carrying out multinational operations
- Tend to have scalability of the phone system network to accommodate new sites as their key concern
- Should look for advanced features relevant to specific business needs, such as multi-site management and mobility support

Advanced Buyers:

- Tend to be midsize to large enterprises
- Tend to be or to operate businesses that are highly "voice-intensive (contact centers, telemarketing firms, media companies, and sales and support organizations, for example)
- Tend to need advanced features, such as soft phone support, operator console features, CTI and advanced call reporting
- Are more likely to use UC to their advantage

- Should look for a phone system that combines the right mix of features with scalability, manageability and support for customization as needed

Product

Product requirements are influenced by factors such as your company's geographic "footprint" (local, nationwide or global), complexity of business needs, organizational structure and employee base. Requirements will also vary depending on whether an enterprise opts for a hosted or an on-premise phone system.

Phone System Buyers Say

73% of buyers **did not notice any major difference in the basic features** of phone systems offered by different vendors.

Source: Focus Research's Enterprise Telephone Systems Buyer Survey, March 2009

Standard Features – Top Requirements

Communication requirements vary from company to company, yet certain requirements that are common across enterprises can be addressed by a standard set of basic features. Further, it has been observed that product feature sets do not vary significantly among vendors. This is corroborated by the results of our survey, which revealed that most buyers did not notice any significant difference in the standard set of features offered by most vendors.

Some of the most common features that a BPS must have to address daily communication needs include the following.

1. Call management features – These are features that manage incoming and outgoing calls.

- Call back – allows a user to request notification (with a distinct ring) when a busy line within the enterprise network becomes available
- Call transfer – directs a call to an extension without routing through the central switchboard
- Call park/retrieve – places a call on hold, allowing anyone to dial an extension and pick up the call
- Call hold – enables the user to put a caller on hold while a second call is answered or made
- Camp on – call can wait for a busy extension to become free; the dialer's extension will ring with the call when the originally dialed extension is free
- Call wait – receives a tone or a light indicating that another call is waiting for attention
- Call pick up – takes a parked call off hold
- Call recording – records a conversation or a conference call
- Do not disturb – ignores all incoming calls; it can be achieved by keeping the ringer on "mute" mode or the phone on "busy" mode
- Direct inward dialing – allows users to connect directly to desired extension without the operator's assistance
- Call redirect – allows user to program the private branch exchange (PBX) to automatically redirect incoming calls to another number
- Speed dialing – permits fast dialing of frequently used numbers

2. Auto-attendant feature – a voice menu system that allows calls to be transferred to an extension without a telephone operator's or a receptionist's assistance; key functions of this feature include:

- Automated call answering with custom greetings
- Automated directory with option of dial by name, extension or group
- Customizable music on hold

3. Cost and bandwidth-saving features – these include:

- Call statistics – Allows users to track and report details, such as call recipient, duration of call and on-hold time, of all calls to an extension
- Dial plans – Directs a call to the least congested and least expensive path in a network

4. Security features – prevents unauthorized access to calls, voice mail and so forth. Examples of VoIP security solutions include firewalls, device authentication, privacy signaling and encryption.

5. Monitoring features – includes features such as Caller ID for displaying the name and number of each caller

6. Reporting features – allows users to capture their phone usage. Some typical features include:

- Call accounting – application that records and captures calls made from the telephone system
- Call log – provides detailed call records by extension or account

7. Voice mail – a centralized system that manages telephone messages; it allows users to receive, answer and manage their phone messages from different locations. It has a variety of features, such as voice mail waiting tone, wake-up call reminders; can record multiple personal greetings; and it allows a user to check voice mail using a Web interface.

8. Call conference – allows a number of users to have a telephonic conference meeting

9. Miscellaneous features

- Intercom – enables intra-office communication via telephone sets
- Corporate directory – enables users to scroll through a company's directory and dial automatically
- User directories – provides personalized user directories to update name, address and other details
- Call paging – allows employees to use overhead or external features to make voice announcements
- Toll-free numbers – allows users located in different countries to call one another for no charge

Advanced Features – Top Requirements

Most companies have communication requirements that are specific to their business or organization. Large enterprises are more focused on increasing efficiency and employee productivity; advanced BPS features can help meet these requirements.

1. Advanced call management features

- Call Hunt – allows calls to ring on a number of lines so that the first available person can answer
- Call flip – transfers call from a teleconference to a mobile phone without any interruption
- Night answer – allows rerouting of incoming calls at night (or specific time) to a desired destination
- Extension status – facilitates the use of a receptionist's phone to monitor multiple employees' phones, providing information on extension status (off-hook, on-hook, do not disturb) before taking action
- Integration with other business applications – allows users to click to call directly from contact lists and customer records from applications such as Salesforce.com or Microsoft Dynamics CRM, or view contextual information

about the customer you are calling. This can also include APIs (Application Protocol Interfaces) and web services that allow developers to build custom applications.

2. Contact center features

- Call queuing – handles calls until they are answered
- Virtual Queueing – allows callers to receive a call back from call center employees rather than wait on the line; also known as ‘In-Queue Callback’
- Automatic call distribution (ACD) – directs incoming calls to a specific group of terminals that agents/employees use
- Call monitoring and reporting features – provides customized reports on call details, real-time status of call queues, system events and users
- Interactive Voice Response (IVR) – communicates with a caller through configurable voice menus and data in real time. Callers can select options by pressing digits on their calling instruments. Some of its applications are telephone banking, tele-voting, and mobile bill information.
- Outbound dialing
- Computer Telephony Integration (CTI) – software, processes and interfaces that integrate computer applications with telephone networks to provide an efficient customer interaction and reporting mechanism; the two most commonly used applications that ensue from CTI technology are as follows:
 - Browser-based system administration – Web interface that allows users to customize their PBX setup such as configuring the actions of auto attendant
 - Browser-based system administration – Web interface that allows users to customize their PBX (Private Branch eXchange – see Glossary) setup such as configuring the actions of auto attendant
- Soft phone support – allows users to operate their computers as telephones for making and receiving calls
- Multimedia recording – screen recording feature that captures the entire user desktop during contact on all channels, such as telephone, e-mail and chat. It also records the conversation.

3. Mobility features – offer benefits, such as customers reaching employees anywhere and employees staying connected to the office while on the move with their mobile phone or tablet. For instance, doctors with the Palomar Pomerado hospital district in San Diego, California, use the Cisco Cius tablet to access patient records and communicate with other staff via Unified Communication features including voice, video and instant messaging. Some of the options available in this feature are as follows:

- Extension anywhere – activates a mobile phone as a fully capable office extension
- Single-number access – allows specific callers to reach employees at different telephone numbers by dialing a single number
- Remote extensions – deploying phones in remote extensions
- Find me/Follow me – an extension of call forward feature; call is forwarded to multiple numbers in a specified sequence

“Manufacturers still want to you sell you the most expensive desk phone along with all of the applications. I’m telling customers: buy a cheap phone and buy expensive apps.”

Jeff Wiener, President
Digitcom,
a Toronto telecommunications reseller

- Least-cost routing – enables calls via mobile handsets to travel via the least-expensive path inside or outside the network, including via voice-over-Wi-Fi, voice over 3G/4G, or cellular
- Find me/Follow me – an extension of call forward feature; call is forwarded to multiple numbers in a specified sequence
- Mobile apps – serving as the front-end for all of the above features for users to control on their smartphones or tablets. Also allow users to view full presence information about their co-workers, and share their status information

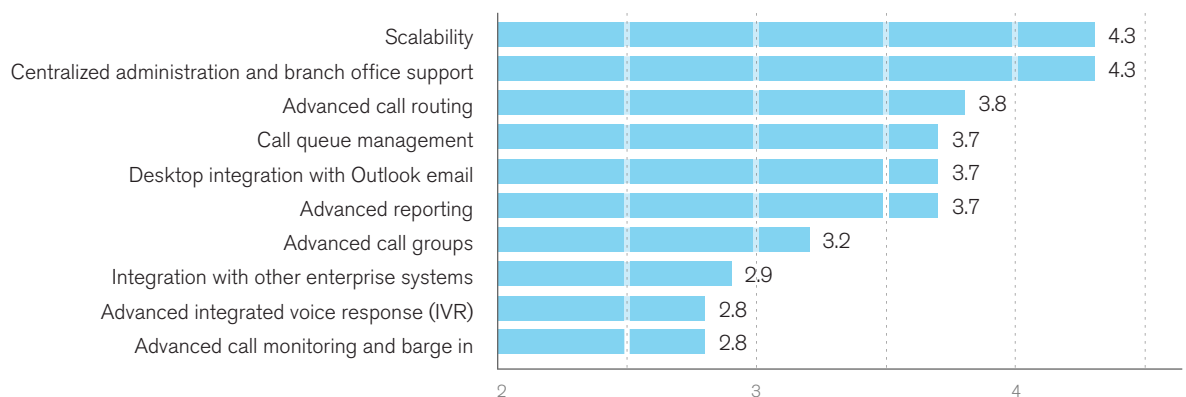
4. System administration features

- Operator console – enables an operator or attendant to handle high volume of calls easily and effectively while maintaining personalized services; helps transfer calls directly to extensions, voice mail box, cell phones and so forth.
- Complete features list – displays the list of all available features that can be activated or deactivated as needed
- Web-based user interface – provides network administrators with graphic and text-format view of devices, network maps, network quality of service (QoS) policies, voice announcements, device faults and so forth.
- Real-time monitoring – allows end-to-end monitoring and alerting of calls with their QoS being ensured across the network
- Centralized security administration – the administration of management user access and roles across platforms is centralized for gateway access

5. Call screening features

- Call block – allows only callers who enter a special numeric code in their touchtone phone pad to call at your number to help prevent unwanted calls
- Hiding caller ID – allows caller to block his/her phone number from being identified by call recipient
- Direct transfer to voice mail box – allows user to instruct PBX to route all incoming calls directly to voice mail to ensure that the desk phone does not ring

Buyers Rate Most Important Advanced Features to Consider



Our buyers rated advanced telephonic features on a scale of 1– 5, with 5 being the most important.

6. Multisite Management – allows enterprises to communicate if they are in the same building; it presents a single extension list for all servers distributed across geographies. It also forwards voice mail across servers to each user's local voice mail box for easy retrieval.

7. Other advanced features

- Unified messaging – integrates message types, such as voice mail, e-mail, text and fax, into a single box that is accessible from a variety of devices (phone, PC, mobile phone, PDA)
- Emergency services (911) – allows nationwide emergency call routing, automated phone tracking and onsite security notification for the entire deployment process; it has two key functions as follows:
 - * *Emergency routing* – routes calls to the appropriate Public Safety Answering Point (PSAP) based on the caller's location
 - * *Phone tracking* – tracks the movement of IP phones on- or off-premises automatically
- Conference bridge – allows users to set up conference calls (with unlimited participants) using a pre-assigned call-in number
- Teleconference – allows live exchange of information (audio, video or data) among different users
- Advanced voice mail features, such as voice mail to e-mail forwarding, or voice mail set up via phone
- Advanced security features include tools to audit the security status of every extension in the system; filter spam and viruses; and enable security policies based on user, group or device
- Application/Hardware integration – allows users to integrate devices (fax machine, mobile phones and so forth) and applications (Microsoft Outlook, CRM applications and others)
- Comprehensive and customizable reporting features, including integration with other incumbent reporting tools

In normal circumstances, scalability of a product is not considered part of a product's features, but it is a selection criterion. For large enterprises, scalability is a critical feature; this is evident from our survey results wherein scalability was rated as the most important advanced feature when purchasing a BPS.

The two most important advanced features to consider in a BPS are “scalability” and “centralized administration and branch support.” Scalability, while not a tangible feature, was cited as an important feature because business expansion was the primary reason for respondents' purchase of a phone system. While changing economic conditions may slow such expansion, mergers, acquisitions and other significant changes in your business' size or scope can occur at any time, making scalability a potentially critical feature of your chosen telephone system.

Other Product Considerations

TDM, IP, or Hybrid PBX?

Though past their prime, TDM-based PBXs are probably still the most prevalent kind of enterprise phone systems in use today. Using digital technology, they are conceptually similar to old-fashioned circuit-based phone systems. It's still possible today to buy and deploy full TDM systems, including those that offer advanced Unified Communications (UC) features such as telepresence. That's helpful for companies that, for example, don't want to run modern network cabling (to support Internet Protocol (IP)) in warehouses and similar facilities. However, most of the PBX and BPS systems available on the market today either use IP technologies or are Hybrid solutions that combine both TDM and IP.

IP PBX benefits include reduced maintenance and calling charges, integration of voice and data networks, higher scalability, easier employee relocation, easy customization of IP PBX features, and increased mobility of the workforce. For example, Caterpillar experienced a response-time reduction of 60 seconds and a 15 percent increase in call volume after it converted 35,000 of its 100,000 phones to VoIP. Chicago law firm Brinks Hofer Gilson and Lione upgraded its 5 office locations to an IP-based PBX with Unified Communications from Avaya, and has cut its long-distance charges by \$16,000 per month.

The adoption of VoIP among large enterprises has been relatively slow compared with VoIP adoption among SMBs. As most enterprises have already invested in some kind of TDM-based telephony equipment, the ROI of a new technology becomes an area of concern. Also, the installation procedure for large enterprises is quite complex. Reliability of service, quality of voice calls and security of VoIP are other major concerns for enterprises considering VoIP adoption. However, evolving VoIP offerings are addressing these concerns with increasing effectiveness, while gaining more powerful features for integration with incumbent legacy voice technologies. These developments are making VoIP more attractive to more large enterprises.

Ultimately, an enterprise's core business determines whether the benefits of VoIP warrant switching. For example, a call center is more likely to reap significant savings by switching to VoIP than a manufacturing company with basic communication needs and comparatively low call volumes. Otoy Water District in California improved its call center performance while cutting costs by upgrading to an IP-based PBX from Interactive Intelligence Group.

“In past years, hosted communications solutions have seen limited growth due to the narrow value proposition of lower costs. Today, however, the growing awareness of **unified communications** applications — things such as Web chat, presence and conferencing — is driving more businesses to evaluate a **hosted option.**”

Roe Jones
Product Manager
Interactive Intelligence



Top Considerations for Enterprises while Moving to VoIP Technology

- Evaluating the overall value added by IP PBX such as the competitive advantage offered, the impact on relationships with customers (improving service levels, creating new services and reducing customer churn) and the impact on the way the enterprise interacts with its suppliers and partners
- Gaining knowledge about IP telephony by understanding differences between SIP and H.323, and number of servers required
- Assessing the existing network by understanding the calling plan and patterns, analyzing the impact on applications and interactions with voice- and data-handling teams

Types of Solution Delivery Model

There are three types of delivery models for enterprise phone solutions: on-premise, hosted and managed. The difference lies in the ownership and management of the system, eventually impacting the total cost of ownership (TCO).

- **On-Premise solution** – In this solution, the buyer owns the system (phones, servers, routers, switches and the software) and manages it. The buyer has complete control over the system.
- **Hosted PBX solution** – The buyer owns the system while its management (PBX functionality) is outsourced to a service provider.
- **Managed PBX solution** – The ownership and management of the entire system lies with the service provider. Hence, its monthly cost is more than that of a hosted PBX solution.

Most users prefer the on-premise solution. Control over communication infrastructure, low maintenance/operating costs and flexible feature customization are among the benefits that position the on-premise model as the preferred choice among most enterprises. However, there are downsides to an on-premise PBX, including high investment cost, a complex implementation process and need for in-house expertise to manage the system.

Some enterprises opt for a hosted/managed solution, lured by factors such as low startup costs, simple installation and freedom from complex telephony infrastructure. Cargo Airport Services, for instance, uses a hosted PBX from M5 Networks (now part of ShoreTel) because of its quick expandability and low management needs. Enterprises adopting a hosted solution are generally small in size, have a geographically remote and distributed workforce and wish to avoid handling a complex PBX to concentrate on their core business.

“ In past years, **hosted communications solutions** have seen limited growth due to the narrow value proposition of lower costs. Today, however, the **growing awareness** of unified communications applications — things such as Web chat, presence and conferencing — is driving more **businesses to evaluate a hosted option.**”

Roe Jones
Group Product Manager,
Interactive Intelligence



What's the maximum size your company can before hosted/managed solutions lose their cost-effectiveness versus on-premises? For Jeff Wiener, President of Digitcom, a Toronto telecommunications firm that resells both on-premises gear and hosted telecom services, the tipping point is around 20 employees.

Open Source Software Solution

For an open source IP PBX solution, a buyer need invest only in hardware and download the required code from the Internet. The benefits of open source IP PBX solutions include:

- No major investment in software, leading to savings of 30–50 percent of initial capital costs in comparison with installation of a proprietary solution
- More flexibility than a proprietary solution, as PBX features can be tailored to business requirements

[Halle-Dale Schools](#), for example, implemented an open source solution and was quite satisfied with the functionalities. Asterisk and SIP Foundry are two open source IP PBX projects that are being maintained and developed by full- and part-time developers.

The two open source business models prevalent in the market are:

- Appliance model: A preconfigured server with some enhancements is shipped to customers.
- Subscription model: A vendor provides services and support as a subscription service to a buyer.

Open source solutions offer significant, tangible benefits, but most enterprises prefer proprietary software-based PBX solutions. Lack of software ownership and dependence on the coding community for bug fixing are the main reasons for rejecting open source solutions.

Strategy for Unified Communications (UC)

UC is the new buzzword in the business communication domain with firms either moving to or considering UC. It integrates voice, video, e-mail, fax and similar communication systems into one infrastructure/platform and helps businesses streamline communications, lower TCO of telephony infrastructure and increase efficiency. Large enterprises that have adopted UC cite post-implementation benefits including substantial cost reduction and increased employee productivity. UC is expected to eventually become the communication standard throughout the business world.

Although not a prerequisite, VoIP does make UC implementation easier since it already has various UC mechanisms, such as forwarding voice mail to e-mail and “find me/follow me” functionality. Hence, upgrading from IP telephony to UC is easier and cheaper than from TDM-based phone systems. The following are some factors to be considered while migrating to IP telephony with UC incorporation as a long-term goal:

- Interoperability, flexibility and reliability of the implemented system with UC in the future
- IP telephony deployment strategy—hybrid IP PBX, fully deployed IP PBX or Centrex (managed service provider)
- Compliance, confidentiality and capacity issues related to unified messaging

What Product Attributes Matter for Different Buyer Types?

Basic Buyers

Look for standard PBX features, such as call management, call routing, call monitoring, call reporting and basic conferencing. They are more likely to consider a hosted/managed phone solution that can meet their basic voice-based communication needs.

Intermediate Buyers

Consider multisite management and mobility features, such as “find me” and extension anywhere, as the most important features; additionally, scalability is an important feature..

* *Single carrier network* is required by enterprises with national operations that have multisite operations within a single country.

* *Multiple carrier networks* are required by enterprises with multinational operations and sites across various countries. They are likely to opt for an on-premise solution to meet such feature requirements.

Advanced Buyers

Consider contact center features, such as ACD, IVR, CTI and advanced call monitoring and reporting, of prime importance. In addition, teleconference, unified messaging and advanced call management features are also essential for these enterprises. A highly configurable/customizable on-premise phone system would be required to meet their requirements. Integration with smartphones and business applications are also nice-to-haves.

Cost

An enterprise phone system is a strategic investment for any enterprise, as the business communication of the whole enterprise relies on that system. Large enterprises tend to be less cost-sensitive than SMBs when it comes to the implementation of an enterprise phone system. But no matter how big or small your company is, cost is still an important consideration and achieving the maximum ROI is the target.

Cost and its Components

The cost of an enterprise phone system depends on a number of factors, such as the technology used, the solution delivery model used, and the number and kind of telephonic functionalities required. The typical cost-per-extension of an on-premise IP PBX solution for a 1,500-employee enterprise can range from approximately \$250 to \$1,000 depending on features and additional services chosen. Based on these figures, the estimated total cost of a premise-based IP PBX solution for a 1,500-employee enterprise can range from \$375,000 to \$1,500,000. Of course, specific costs can vary considerably based upon capacity, features, additional support services purchased and other factors. Cost components for each solution model can also vary significantly, so let's look at cost considerations separately.

On-Premise IP-PBX Solution

The main cost components include:

- **Startup cost** – Includes the initial one-time cost for setting up the PBX system in an enterprise. It can be further divided down into the following components:
 - * *Hardware cost* – Is a major sub-component of the startup cost and includes the cost of networking equipments (routers, switches), high-speed Internet connection (T1, DSL), and phone system hardware (PBX, extensions). The cost of main hardware components is as follows:
 - a) Call server hardware – varies from \$1,000 to \$5,000 per server
 - b) Phones – can cost between \$150 (with basic features) to \$700 (with advanced features) per device
 - c) Voice mail hardware – varies from \$1,000 to \$5,000
 - d) Media gateway – costs approximately \$3,200
 - e) Networking equipment upgrade – Includes hardware such as Ethernet to T1 bridge (approximately \$2,200), channel banks (\$700–\$1,500), wiring and so forth.
 - * *Software cost* – Includes the one-time license fee of software for IP PBX server, voice mail and softphones. The price of a softphone license can be as much as \$50 per user.
 - * *Services cost* – Is the service cost of installing the IP PBX system. This cost varies with the requirements and the time frame in which the enterprise wants the system to be implemented. For example, a standard and advanced 3Com IP telephony installation service may cost an enterprise (with up to 50,000 employees) approximately \$1,800 and \$4,600 respectively.
- **Service and maintenance cost** – Includes the annual maintenance and license fees, T1 service charges and the cost for the services on call; the service and support cost depends on the time frame of the service contract selected by the enterprise
- **Internal staffing costs** – Includes the cost incurred of maintaining an internal team for the operational management of the phone system

Hosted IP PBX Solution

The main cost component is the regular per line/extension cost plus the limited amount spent on initial setup (including the cost of phones and Internet connection). However, the setup cost varies significantly depending upon the condition of existing communication infrastructure.

With setup costs being taken care of, a typical full-featured hosted PBX service, with unlimited calling (local as well as long distance), can cost between \$25 and \$70 per extension per month. The main cost components for a hosted IP PBX solution are:

- **One-time cost** - This cost includes buying the required hardware (in case of buying a new phone system) and the cost of installation and activation; this initial cost varies from \$280 to \$330 per user and has the following components:
 - * *System setup* - Includes the system installation cost and varies between \$150 and \$200
 - * *Phones* - The cost of an entry-level phone with standard features is \$130; it can go up to \$950 for a phone

with all advanced features; if the phones need to be upgraded, it may cost \$100–\$200 per line

* *New network switch and router* - \$900–\$1,200

* *Other costs* - Comprise costs related to number port (\$10–\$15 per number), listing change (\$10–\$15 per number)

▪ **Monthly costs**

* *Internet connection* - Based on the connection adopted, your monthly Internet cost can be as follows:

a) DSL connection - \$50–\$200 per line (variation based on data transfer speeds)

b) T1 connection - \$300–\$700 per line (variation based on data transfer speeds)

c) Bonded T1 connection - \$700–\$800 per line

* *Local or toll-free number* - This cost is approximately \$5 per month.

* *Calling cost* - This includes the standard inbound, outbound and international calling charges. Most companies offering hosted VoIP services offer unlimited free inbound calls. This component varies according to the plans chosen by the enterprise.

Open Source IP PBX Solutions

Cost components of an open source IP PBX solution are quite similar to that of an on-premise PBX solution except the software license cost, which is excluded. This exclusion can reduce the upfront costs of the solution by 30 percent to 50 percent as compared with its proprietary counterpart, but requires specialized IT expertise to implement and maintain. For an open source IP PBX solution to be cost-effective, sophisticated in-house IT expertise is sometimes a must. However, some vendors combine open source technologies with configuration, deployment and support services. This approach can reduce the need for internal expertise while retaining much of the economy of open source solutions.



Buyer Monitor Comments “Watch Out!”

“

Product features were either missing or did not work as expected.”

Joe

Insurance company
Purchased Fidelity

“

The equipment that was recommended by the vendor turned out to be not intuitive for my environment. The phone models had to be replaced later on.”

Trevor

Iron and Steel Manufacturing
Purchased Avaya

“

We were not aware of hidden costs related to support. Now that we need more functionality, we are getting charged more.”

Robert

Vehicle Asset Management
Purchased Asterisk

“

The only issue that we have had is user adoption. Sometimes we do not even know how to do something as simple as transfer or set up a conference call.”

Ed

Religious Education
Purchased Avaya

Source: Focus Research's
Enterprise Telephone Systems
Buyer Survey, March 2009



Hidden Costs

Besides the main cost components, there are hidden costs that can become a budgetary burden if not recognized and dealt with beforehand. Hidden costs can be part of the one or more of the following components:

- **Hardware costs** - include costs related to equipment replacement, and additional racks to mount equipment
- **Software costs** - include unexpected license costs of supplementary software such as SQL and Windows
- **Services costs** - unexpected labor costs in upgrading the system, unaccounted components of a consultant's salary, such as insurance, taxes and other overheads

Understand Your Desired Pricing Model

The pricing models that are most prevalent in the enterprise phone systems market are as follows:

- **Pay-as-you-use or subscription-based** - In this model, the solution provider charges the enterprise on the basis of usage per extension per month. The monthly charges further vary depending on the advanced features and the phone instrument selected by the enterprise. This model is most likely to be adopted by hosted PBX solution providers. Contracts vary from three years to five years, with three-year contracts being more common.
- **Buy and maintain or license-based** - This model requires the enterprise to purchase and install the PBX system at its site, then pay an annual fee for service and maintenance of software and hardware. On-premise solution providers are most likely to charge a user based on this model.

According to our Buyer's Survey, respondents rated the following as the top reasons for selecting a vendor:

- ⚠ Cost of solution – 23.1%
- ⚠ Reputation of vendor – 20.5%
- ⚠ Level of customization offered by vendor – 10.3%

Source: Focus Research's Enterprise Telephone Systems Buyer Survey, March 2009

Defining ROI

Enterprises are increasingly facing questions related to the future of their telephony infrastructure—whether to buy a new enterprise phone system or to upgrade the existing system. In such a scenario, calculating the ROI of implementing a new system vis-à-vis the existing system while comparing costs and benefits helps enterprises arrive at a decision.

Consider the following benefits and measurement parameters:

- **Productivity increase** - can be measured in terms of reduced customer response time as a result of sophisticated voice communication features and increased employee mobility due to mobility features such as "find me," unified messaging, and so forth. For instance, Caterpillar, a 100,000-employee organization, increased its response time by 60 seconds by upgrading from a TDM system to an IP PBX system.
- **Increase in business operations** – voice-intensive businesses such as contact centers can realize a significant increase in their call volumes after phone system implementation

- **Reduction in employee relocation costs** – due to increased employee connectivity and mobility
- **Reduction in monthly calling charges** – enterprises can save up to 60 percent on monthly call costs by adopting IP PBX

Buyer Dissatisfaction – What to Watch Out For

Focus Research asked various enterprises the their level of post-project satisfaction. Approximately 70 percent of the users were satisfied with their purchased solution. Only 8 percent were not satisfied, with the rest being neutral or not yet having implemented the solution. To avoid an undesirable result, be aware of these common reasons for dissatisfaction:

- **Faulty uptime and poor support from vendor**
- **Improper integration with legacy network**
- **Missing product features** – features that were promised initially but missing after implementation
- **Poor user adaption to the new system**
- **Unexpected hidden costs**

“ Focus on the following factors when selecting a vendor:

- **Stability:** Ask for a backing company from the vendor that will honor warranties if the vendor was to close its doors
- **New solution offerings:** A vendor offering a product that is right out of the gate and is based on bleeding-edge technology or an older solution that has an End of Life (EOL) date should also be avoided
- **Installation plan:** The installation plan will set the expectations of the enterprise and the vendor. This way scope creep is eliminated, and the project completion point is clearly defined with milestones.
- **Clearly defined pre-/during/post-installation support policies:** The vendor should clearly state the parties involved and own the responsibility for them. Too many parties involved or unclear project management can be devastating to the overall installation.”



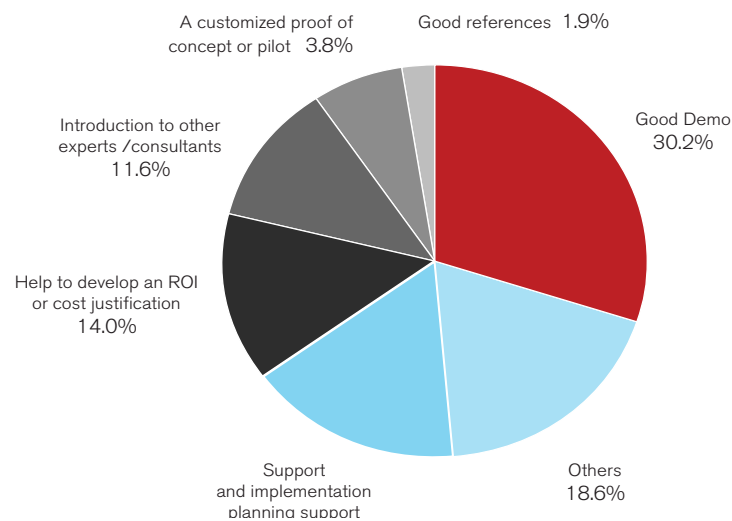
Warren Sonnen

Director of Product Management & Marketing
Epygi Technologies

What kind of Costs Should the Each Buyer Type Expect?

- **Basic Buyers** should expect comparatively cheaper telephony solutions meeting their basic communication requirements. They are more likely to consider a hosted solution and avoid the high capital investment of an on-premise solution.
- **Intermediate Buyers** should expect moderate to high costs for the phone solution. This can be attributed to multi-location implementation and support costs of the solution. The inclusion of more advanced features will drive up costs.
- **Advanced Buyers** should expect a relatively high TCO because advanced features such as CTI, ACD and IVR are expensive add-ons. Moreover, customization costs are likely to be more for these buyers due to their complex requirements.

What Buyers Consider Most Useful During the Sales Process



Vendor

Selecting the Right Vendor

Selecting the right vendor is as important as identifying the right solution for your enterprise. A successful BPS implementation can be fraught with myriad issues, including integration with the existing network, enterprise-wide rollout, training, business continuity and acceptance of the new system. The vendor plays a crucial role in tackling each of these issues. Hence, the most important factors to consider while evaluating the vendors are:

- **Business-specific knowledge and experience** - As core communications technologies increasingly become more commodity-like, vendors and their integrator and reseller partners must focus on other areas for effective differentiation. For most users, the most important area is understanding that user's business and core markets. Resellers and integrators with adequate business knowledge and expertise are best equipped to match the right technologies and features to your enterprise's specific needs and goals.
- **Customization and integration expertise** - Some level of product customization is required to meet specific requirements in any enterprise. A vendor should demonstrate expertise in customization and integration of the customized application with the existing systems.
- **Vendor's support policies** - Close scrutiny of a vendor's support policies is critical to ensure that your communication infrastructure runs smoothly and remains up 24/7. Vendor response time, loss insurance and local support for all sites are some of the important factors you should look for in a vendor support policy.
- **Vendor's focus on product innovation and R&D** - Buyers are more attracted to vendors that focus on innovation and keep their offerings in line with the latest technologies.

A vendor's reputation, previous track record, flexibility in pricing and diversity in product offerings are other factors to consider.

Buying Process

In addition to evaluating vendor attributes, questions an enterprise should ask during the sales process are as follows:

- Does the vendor have products/services/strategy to address new business communication requirements as your business evolves?
- Does the vendor offer you a choice between a network overhaul and leveraging the existing infrastructure?
- Does your vendor offer you a detailed, unambiguous Service Level Agreement (SLA) that addresses factors such as Quality of Service (QoS), application and network performance?

Implementation Process

After identifying the final vendor, prepare a comprehensive checklist of the key to-dos for yourself as well as for the vendor. Involve the vendor, and seek vendor input at each step of the implementation process.

It is important for an enterprise to assess and test its current telephony and networking infrastructure. The infrastructure should be able to support the new phone system. For example, the existing network should provide sufficient throughput and meet latency, jitter and packet-loss requirements. Hired consultants and/or the vendor can administer the assessment. Prepare a list of equipment upgrades or new purchases after system assessment.

The deployment of the purchased new equipment on a test network is the next step. Such prototyping helps your network get accustomed to new equipment. After testing, the entire organization should be migrated to the new telephony system in a phased manner (location-wise). Enterprises should closely collaborate with the vendor or the implementation partner to ensure business continuity during implementation.

Some notable recommendations are mentioned in the buyer comments box below.



Buyer Monitor Comments

“Watch Out!”

“

Get a consultant for anything more than 10 phones. They are well worth the money. Have one person kind of own that internally and be responsible on the company’s side for the project.

Robert

Electrical Engineering
Purchased Avaya

“

Request an implementation plan. Our installation was poorly executed. It was very frustrating and poorly timed. They never gave us a plan”

Ken

Retail Clothing
Purchased Mitel

“

Get involved with the vendor before they come on site. Visit other installations and talk to other people who have deployed the system so that you can gain a better understanding of the whole process.”

Stuart

Iron and Steel Manufacturing
Purchased Avaya

Source: Focus Research's Enterprise Telephone Systems Buyer Survey, March 2009

Support Process

Post-sales support and maintenance is considered critical by experienced buyers, as phone uptime (or downtime) can have a significant impact on the performance of your business. Make sure that you explicitly mention your post-implementation support requirements at the very onset, and obtain the vendor's commitment to it.

Some of the issues that could crop up during the support process are related to the configuration of the system, product upgrades/add-ons, third-party involvement and user adoption. Experienced buyers recommend that you have a single point of contact (SPOC) from the vendor's side to address support-related queries. It saves you the hassle of explaining the situation to a new contact person each time you have an issue.

What Different Buyer Types Need From Their Vendors?

Enterprises with Centralized Operations

Vendor should offer off-the-shelf, cost-effective and easy-to-use phone system.

Enterprise with Dispersed Operations

Vendor should have experience in multi-location/global rollout and ability to provide on-demand support for different sites.

Enterprises with Voice-intensive Operations

Vendor should provide nearly 100-percent system uptime, have contingency plans in place and have fast on-site response time.

“There should be a **hardware maintenance** agreement in place. The vendor should have sufficient **inventory** on hand to immediately replace critical faulty equipment. **‘Escalation procedures’** should be included in the maintenance agreement and turnaround time for different levels of service issues should be listed in the agreement.”

David Byrd
VP – Marketing and Sales
Broadvox



4 Tools



10 Steps to Purchasing a Business Phone System

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10 Steps to Purchasing an Enterprise Phone System



Purchasing/upgrading your business phone system is a demanding process. The best approach is to have a procurement plan in place that lists all the assumptions, benefits, cost considerations and other influencing factors that are important for your business. Use the checklist below to guide you.

- 1. Conduct a comprehensive analysis of your telephony/networking infrastructure** – Answer the following questions defining your system:
 - a. How many employees are there in your organization?
 - b. How many sites or regional offices are there in your organization?
 - c. What are your existing phone system details? Manufacturer, number of lines, connections and so forth.
 - d. What are your current broadband connection details — bandwidth, type, lines and so forth?
 - e. What are existing traffic demands on your voice and data networks?
 - f. What type of servers does your system run on? Manufacturer name, model number, operating system and other details.
 - g. What is the percentage of inbound vs. outbound calls?
 - h. What is the percentage and average amount of internal, local, long-distance and international calls per month?
 - i. How many remote or mobile users do not have a local office?

The results of this analysis would help you decide whether or not you need to purchase a new phone system or upgrade to a new system.

- 2. Define your business requirements clearly** – Prepare a list of critical as well as optional business needs. Be sure of the optional needs that can be negotiated for a lower cost.
- 3. Define your investment timeframe and budget** – Estimate the cost of the project (budget) and prepare a tentative plan. You should keep in mind the total estimated project costs or estimated costs per user per month.
- 4. Conduct a Buyer Segmentation survey to identify your buyer type** – It will help you to prioritize your high-level needs and preferences.
- 5. Conduct a cost-benefit analysis to select a solution model (on-premise or hosted) that best meets your requirements** – Do you want to outsource your telephony support services and focus more on your core business? Or are you looking for a long-term integrated business communication solution and want to control your telephony infrastructure? Detailed research and comparison of solutions would assist in choosing the right model.
- 6. Look out for the hidden costs** – Ask the following cost-related questions to avoid any hidden costs:
 - a. What startup costs are there beyond setup and equipment fees? For example, cost of auxiliary equipment
 - b. Are there any costs related to licenses of supplementary software such as SQL and Windows?
 - c. Are there any unexpected components of a consultant's salary?
 - d. What are the additional costs for upgrade?

- 7. Compare vendors and solution options and ask for RFPs** – Don't just get a demo, but ask for a pilot or POC (proof of concept). If demos suit your processes, get Request for Proposals (RFPs) from at least three to four vendors.
- 8. Ask for a SPOC (Single Point of Contact)** – The SPOC will assist you from the vendor side throughout the implementation process and beyond.
- 9. Shortlist the final vendor and have a detailed and an unambiguous contract/Service Level Agreement in place** – Based on demos and pilot phase performances, select the final vendor. Contract termination policies and SLAs (Service Level Agreements) should be clearly defined, with a focus on the vendor's support policies.
- 10. Pilot installation and company-wide rollout and beyond** – Get the vendor to deploy the solution over a test network. If the pilot phase goes well, begin rolling out the telephony solution company-wide. A rollout should happen in a phased manner. The larger the enterprise, the more phases it requires. After implementation, it is essential to schedule end user onsite training with the help of the vendor.

Buyer Type Worksheet

If you've decided to purchase a new business phones system, you must first identify the buyer category you fit into. Focus Research's buyer categories help you identify your most important and highest level needs that can serve as filters when evaluating product options on the market. This exercise will give you a better idea of how your company fits into these buyer types.

Scale and Complexity of Business

- 1. How complex are your businesses requirements?**
- 1 point _____ Requirements are basic and can be easily met by standard suite of features
 2 points _____ Requirements are complex and cannot be directly met by standard features suite
- 2. How geographically diverse are your business operations?**
- 1 point _____ Centrally located at a single site in the US
 3 points _____ Distributed across various sites locally, regionally or globally
- 3. How much internal support will your organization have?**
- 1 point _____ No or limited internal IT support
 2 points _____ Adequate internal IT support

Results: Based on your final total points, your organization probably fits into the following buyer types::

Enterprise with Centralized Operations	3-4	You are looking for an overall cheap business phone system with a standard suite of features and a few advanced features.
Enterprise Buyers	6-7	You are looking for a phone system with a focus on advanced features such as multisite management and mobility..

An enterprise would be classified as having voice-intensive operations if its core business revolves around voice communication. Some of the enterprises that could fall in this category include contact centers, call centers, media and market research companies. However, every enterprise with voice-intensive operations can be further categorized under one of the two buyer categories mentioned above.

Product Requirements Prioritization Worksheet



Using this worksheet, you can evaluate your feature requirements in relation to how well vendors meet those needs. Score vendors in the columns to the right, using a scale of 1 to 5, with 5 being the best. If the feature is not important to your particular Business Phone System implementation, simply leave the field blank. When you are done, add up the columns; your final score should give you an idea of which vendor's solution best suits your needs.

Requirements	Vendor 1	Vendor 2	Vendor 3
Standard Features			
Call back			
Call transfer			
Call park/retrieve			
Call hold			
Camp on			
Call wait			
Call pick up			
Call recording			
Do not disturb			
Direct inward dialing			
Call redirect			
Speed dialing			
Auto attendant			
Call statistics			
Dial plans			
Security features			
Monitoring features			
Call accounting			
Call log			
Voice mail			
Call conference			
Intercom			
Corporate directory			
User directories			
Call paging			
Toll free numbers			
Section Total			

Requirements	Vendor 1	Vendor 2	Vendor 3
Advanced Features			
Call hunt			
Call flip			
Night answer			
Extension status			
Call queuing			
Automatic call distribution (ACD)			
Call monitoring and reporting features			
Interactive Voice Response (IVR)			
Outbound dialing			
CTI (Computer Telephony Integration)			
Multimedia recording			
Extension anywhere			
Single number access			
Remote extensions			
Find me/Follow me			
Operator console			
Complete features list			
Web-based user interface			
Real-time monitoring			
Centralized security administration			
Call block			
Hiding caller ID			
Direct transfer to voice mail box			
Multisite management			
Unified messaging			
Emergency routing			
Phone tracking			
Conference bridge			
Teleconference			
Advanced voice mail features			
Advanced security features			
Application/Hardware integration			
Section Total			

Vendor Landscape

The following is a list of vendors serving the business communication needs of large enterprises, each belonging to a different segment.

We have classified vendors into six categories. The first three are based on the type of phone solution model; the next two categories offer phone solution components that form an integral part of the overall phone system for large enterprises; and the last category of UC is included due to the importance Unified Communications has for large enterprises. Though there are several vendors offering solutions/services, we have tried to include the major ones in each segment.

On-premise PBX solution providers

Avaya – www.avaya.com

Cisco – www.cisco.com

NEC Sphere – www.spherecom.com

Nortel – www.nortel.com

Siemens – www.siemens.com

3Com – www.3com.com

Shoretel – www.shoretel.com

Aastra – www.aastra.com

Mitel – www.mitel.com

Hybrid (both hosted and on-premise) PBX solution providers

Altigen Communicaitons – www.altigen.com

Alcatel-Lucent – www.alcatel-lucent.com

Spherecom – www.spherecom.com

Zultys – www.zultys.com

Toshiba – www.toshiba-phones.com

Pure-play hosted PBX solution providers

Broadsoft – www.broadsoft.com

Bandwidth.com – www.bandwidth.com

M5 Networks – www.m5networks.com

Nextiva - www.nextiva.com

Qwest – www.qwest.com

Ring 9 – www.ring9.com

VoIP software providers

Open source VoIP software

Asterisk – www.asterisk.org

Digium – www.digium.com

Pingtel – www.pingtel.com

Elastix (Unified Communications) – www.elastix.org

Licensed VoIP software

3CX – www.3cx.com

NCH – www.nch.com

Swyx – www.swyx.com

Icecom – www.icecom.fi

Broadsoft – www.broadsoft.com

VoIP security service providers

VoIP Shield Systems – www.voipshield.com

Secure Logix – www.securelogix.com

UC providers

IBM – www-01.ibm.com

Microsoft – www.microsoft.com

Cisco – www.cisco.com

Mitel – www.mitel.com

Cosmocom – www.cosmocom.com

Interactive Intelligence – www.inin.com

Glossary

Centrex—a business phone system that is fully owned and operated by a telecommunications operator or service provider. Also known as a managed PBX. Versions first invented in the 1960s used analog phone lines. Current versions are IP-based.

H.323—a data transmission method (protocol) that enables Voice over IP (VoIP) calls and videoconferencing. Enables fewer services than SIP does.

MAC-D—a telecommunications term referring to Moving, Adding, Changing or Disconnecting service. Any phone service change related to a new employee user such as a new extension or feature upgrade requires a MAC-D order.

Plain Old Telephone Service (POTS)—acronym for old-fashioned analog- and circuit-based voice service that does not include digital features.

Private Branch eXchange (PBX)—originally, a piece of electronic hardware that automatically routed voice phone calls to the right handset inside an office. Modern PBXes are very similar to network servers, and can route voice, video, instant messaging, etc. on the same network, all in the form of digital data traffic.

Session Initiation Protocol (SIP)—a data transmission method (protocol) often used by Unified Communications to manage IP-based voice calls, videoconferencing, instant messaging, file transfers and more. Enables more services than H.323.

Service Level Agreement (SLA)—part of a service contract, such as for a hosted or managed PBX service, which specifies a guaranteed level of service, and penalties paid to the customer if the SLA is not met.

Tablet—a new type of mobile device that can be used, among other things, for Unified Communications purposes. Examples include Apple's iPad and Amazon's Kindle fire.

Telepresence—a feature typical of Unified Communications (UC) systems that enables users to see the real-time availability status of other users, typically co-workers.

Time Division Multiplexing (TDM)—the digital phone call switching technology used by legacy Business Phone Systems and PBXes. TDM systems are being replaced by IP (Internet Packet)-based PBXes, and hybrid PBXes that use both technologies.

Unified Communications (UC)—a broad set of communication services, including voice, video, instant messaging, etc., that is delivered via the same network and software. May be more efficient and less-expensive if delivered right.

Virtual Private Network (VPN)—secure, private communication over public networks such as the Internet. Typically used by employees using laptops or tablets while outside of the office. Relies on users authenticating themselves to the corporate server and then encrypting all subsequent transmissions.

Virtualization—the ability to partition a computer, usually a server, in order to run multiple instances of software at a time.

Wide Area Network (WAN)—data network that connects a local area network (LAN) inside an office to external networks such as the Internet or other office locations.