



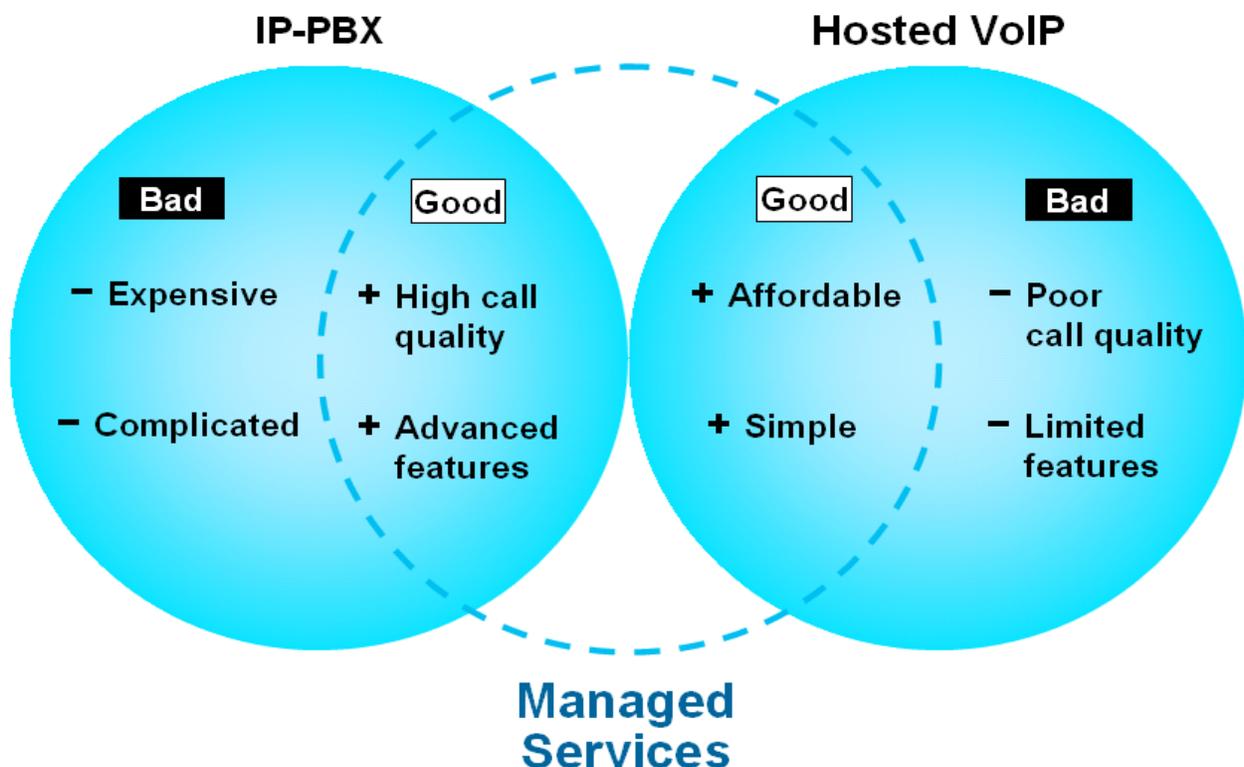
MANAGED VOICE SERVICES ARCHITECTURE

Everyone knows the world is going digital and the world of business telephone solutions is no different. Voice-over-IP (VoIP) technology represents the future of voice communications because it enables companies to operate more efficiently by using high productivity features in combination with a low cost infrastructure. Given today's challenging economy, doing more with less is not only smart, it's essential.

However, VoIP technology can be difficult to deploy with the level of service quality and reliability required by most business environments. Inexpensive hosted VoIP solutions provide only best-effort service quality and operating your own IP-based PBX over a network infrastructure designed to carry voice traffic is both costly and complicated. A premise-based PBX system also provides a richer set of telephony features.

So when it's time to upgrade or replace your business telephone system with a solution based on VoIP technology, how does a small to mid-sized company effectively choose between an inferior hosted VoIP service and an expensive in-house system?

The answer can be found in a third alternative – Managed Voice Services from Kinetech. This approach provides the business owner with a solution that delivers the best of both worlds. A Managed Voice Service combines the simplicity of a hosted solution with the quality you expect from a sophisticated in-house phone system using a private IP network.



Kinetech's Managed Telephone Voice Service is cost-effective. For a flat monthly fee, your company will realize the benefits of an all inclusive voice service designed to meet your specific requirements allowing you to modernize your phone system and control your expenses at the same time. All of the telephone equipment, system software, network resources, and carrier services related to the operation of your phone service are provided and supported by Kinetech.

Think of us as your very own telecommunications department. Kinetech is a one-stop source for supporting all of your voice communications needs. Kinetech is an industry leading provider of communications services to communities across the country, and a pioneer in the development of premise-based IP telephony technology and VoIP quality management systems and we have developed an award-winning IP telephony solution that combines advanced features and state-of-the-art equipment with unparalleled service quality at an affordable price.

Kinetech's Voice Service allows you to focus on running your business—and not on running your phone system. You can rely on a managed service and take advantage of the latest features and technologies without the need for self-managing an IP PBX or waiting for the phone company to launch new features that address future requirements.

BLENDED ARCHITECTURE

The Managed Voice Service is designed from the ground up to deliver high service quality and continuous availability. The architecture is a unique blend of premise-based IP-PBX systems and centralized service quality management. Installing an IP Appliance on the customer premise allows Kinetech to uniquely customize the system configuration for each customer while centralized management systems remotely monitor the health and performance of each location from the Kinetech Network Operations Center (NOC).

- Broadband connection managed with QOS for voice
- Intelligent appliance on-site contains monitoring and test tools
- Load sharing of traffic with multiple Carrier Partners for network resiliency
- Centralized automated monitoring of entire network and end points
- NOC 24x7x365 Network Monitoring
- Automatic backup- 6 USA data centers
- Carrier Grade Tier 1 Network Providers
- Disaster Recovery-Automatic call re-routing
- Analog Line Backup Option

Blended Architecture is an innovative and highly beneficial way of designing a communications solution that is only used by Star2Star Communications. Blended Architecture combines aspects of on-premise and hosted VoIP solutions to get the best features of both without the limitations of either. Traditional phone systems require direct copper-wire connections between the phone making a call and the phone receiving the call. Over time, this system grew to include many millions of connections. The "public switched telephone network," or PSTN, was the foundation of the communications industry in America for over 100 years. Because the PSTN demands physical connections, companies that require more than a few lines typically need an on-premise private branch exchange, or PBX. Since Internet bandwidth has become faster, cheaper, and more widespread, many different providers have experimented with "voice over Internet protocol," or VoIP, technology. VoIP phones transmit calls over the Internet rather than over copper-wire connections. Most VoIP providers are exclusively hosted, which means that everything they do is done in the cloud, with minimal hardware stored on-premise. Blended Architecture extensively utilizes the cloud but also maintains some on-premise hardware and services. The primary on-premise component of Star2Star's Blended Architecture is the StarBox Cloud Connection Manager, and the primary cloud-based component is the Constellation™ Network. On-premise PBX, hosted VoIP, and Blended Architecture systems are very different from one another in a number of ways.

INTRA-OFFICE CALLING

One of the basic differences between Blended Architecture and other system designs is how intra-office calls are handled. Roughly two-thirds of the telephone calls in a typical office are intra-office calls, or calls between one extension in the building and another, meaning that they are disproportionately important to an effective communications strategy. Offices that rely on the PSTN for phone service handle intraoffice calls in several different ways, depending on whether the office uses a PBX or not. If the office does have a PBX, the call goes to the PBX where it is routed back to the destination extension. If the office does not have a PBX, a Key System or similar alternative is responsible for routing calls. Because most VoIP providers don't use on-premise equipment, they have to take care of everything in the cloud. When you make an intra-office call on a typical VoIP system, the call leaves the premises before being re-routed back to the office. This increases lag time, reduces call quality, and wastes bandwidth. Star2Star handles intra-office calls differently and more efficiently. The StarBox Cloud Connection Manager recognizes intra-office calls and routes them to their intended destination before they enter the cloud. This reduces lag time, improves call quality, and preserves bandwidth.

OFF-PREMISES CALL ROUTING

Regardless of the type of system, it must route calls in some manner once they leave the office to ensure they arrive at the correct destination, and it usually routes them multiple times. Calls made using the PSTN must travel over copper lines, so the pathways used for routing are largely determined by what copper wire connections exist. Most calls go through several exchanges. Calls that have further to travel pass through more exchanges. This process is time consuming and expensive, which explains why long-distance calls cost more than local calls on a traditional phone system and also why PSTN lag times are sometimes so long. Because these restrictions are inherent aspects of the PSTN, there isn't anything that on-premise PBX's can do to improve the situation. Hosted VoIP providers utilize their own routing procedures, but most are very similar. In general, VoIP providers utilize one, or possibly two, data centers. These providers route all calls through those data centers, regardless of their destination or local Internet traffic conditions. A high volume of Internet traffic, an Internet outage, or any other problems along the pathway, can impact call quality dramatically or drop calls entirely. Star2Star uses its Constellation™ Network and continuous call quality monitoring to ensure that the system routes all calls along the best path. The Constellation™ Network includes six major points of presence located across North America, in addition to our primary data center in Atlanta. This allows Star2Star to route calls along numerous paths. Every StarBox Cloud Connection Manager maintains a priority list of pathways, based primarily on latency. The StarBox Cloud Connection Manager routes the call along the highest priority path, unless that pathway is non-operational for any reason. In that circumstance, the StarBox Cloud Connection Manager automatically routes the call along the second highest priority path, and so on. The StarBox Cloud Connection Manager does not need to connect to a different point of presence because every StarBox Cloud Connection Manager is always connected to all six points of presence. The Constellation™ Network continuously monitors call quality and Internet traffic and uses the information to automatically update the priority list every thirty minutes. By routing all calls along the best path, Star2Star keeps lag times low, quality high, and calls from getting dropped.

TRAFFIC SHAPING

One of the major reasons why many VoIP providers have poor call quality is that they treat voice and data the same. If a data transmission, such as email, is interrupted or slowed, the data will still likely arrive at its destination intact. The same is not true of voice because it is "live." If a voice transmission is interrupted or slowed, the quality of the call very likely will be compromised. VoIP calls typically travel over the Internet as packets of data. A slow or interrupted transmission causes these packets to arrive slower, or sometimes in the incorrect order. This leads to delay and jitter. Sometimes, the packets are lost entirely, which causes gaps in the call or even a dropped call.

Star2Star uses 2-way traffic shaping to keep call quality high. The StarBox Cloud Connection Manager prioritizes voice and sends it out before data, keeping outgoing call quality high. To make sure that there is sufficient available bandwidth to keep incoming call quality just as high, the StarBox Cloud Connection Manager sends a signal to the source of incoming data transmissions alerting the source that all bandwidth is being used up, even if it is not. This slows down the incoming data transmission and therefore preserves bandwidth.

RELIABILITY AND RECOVERY

Modern business is so dependent on communications that even a few hours of downtime can result in lost revenue and customers, making reliability and disaster recovery of paramount importance. As long as the direct, copper-wire connections it relies on remain intact, the PSTN is very dependable. However, PSTN users lose communications entirely when those connections are broken. A storm, earthquake, or an incautious construction crew can knock out a phone system for days. On-premise PBXs also fail and can be very challenging to get running again. Repair costs can be expensive, and replacement parts are no longer available at all for many systems. It is difficult to make sweeping statements about the reliability of Hosted VoIP providers, because each one is quite different. In general, Hosted VoIP is substantially less reliable than on-premise PBXs for a number of reasons, including architecture design, bandwidth limitations, and hardware quality. Many companies that make the switch to VoIP experience a major disruption to their business because they have so many dropped calls, and many calls that do go through are unintelligible. The disaster recovery protections available on Hosted VoIP systems vary from provider to provider, but very few take advantage of the full power of the cloud. Star2Star guarantees 99.999% uptime reliability, and the company regularly exceeds it. In fact, Star2Star has had 100% uptime for three straight years. Its Blended Architecture allows Star2Star to include extensive disaster recovery protections, such as StarRecovery, with every system. If a StarBox Cloud Connection Manager goes offline due to disaster, Internet outage, or any other reason, Star2Star's protections go into effect. Star2Star automatically routes calls to remote locations or employee cell phones. Users can access voicemail from email anywhere. Star2Star even can route main or departmental numbers to an auto attendant or a group of numbers that continue to function remotely. This means that businesses with Star2Star can continue to function with minimal disruption, even if their offices are offline.

USABLE LIFE

The single most expensive part of switching to a new communications system is almost always installation and set up. Businesses must purchase or lease hardware, pay fees, and port numbers. This doesn't factor in the man-hours that must be spent by every employee to learn the new system and the temporary dip in productivity that typically ensues. It therefore makes little to no sense for a company to choose a communications solution that they will have to replace shortly after installation. The PSTN has been largely obsolete for several years now, and its days are numbered. Even AT&T, a company that has traditionally been so dominant in the telecom industry that it was once known simply as, "The Phone Company," knows that the end is near. AT&T successfully petitioned the Federal Government to gradually phase out the PSTN and replace it with VoIP services. Although the timetable for the PSTN's phase-out has not been finalized, it will almost certainly be complete within a few years. Once the PSTN is no longer supported, the on-premise PBXs that rely on it will be worthless. The future of telecom lies with VoIP, but not all VoIP solutions will last into the future. Many VoIP providers render their services and hardware obsolete by not regularly updating and upgrading them. In most cases where updates or upgrades are available, users have to pay a fee for them. Sometimes, UC providers have announced that they are discontinuing a product or service altogether, leaving users scrambling for a replacement. Because most VoIP providers do not fully integrate their features, updates to one feature may cause compatibility issues with others. Star2Star is determined to stay permanently on the cutting edge of communications technology. Star2Star's development team is constantly striving to improve every facet of the Star2Star solution. Updates and upgrades are available on a regular basis, most of which are distributed free of charge. Star2Star users never have to worry about their system being outdated or discontinued because Blended Architecture can grow and develop indefinitely.

MOBILITY

Mobility is increasingly important to the global economy. Companies that can't do business wherever and whenever they need to swiftly and inevitably fall behind those that can. Their potential workforce is also limited by geography, preventing them from hiring the best and brightest if they are unwilling or unable to re-locate. Traditional on-premise PBX systems offer virtually no mobility solutions because the PSTN is so reliant on direct connections. At most, you can have the same number connect to multiple phones at the same location, or utilize different numbers at different locations. Workers at companies who still use on-premise PBX systems typically depend on cell phones for mobile activity, which normally have limited business functionality. Workers who must take advantage of greater functionality, such as call center agents, are forced to work exclusively from the office. In theory, Hosted VoIP should offer far more mobility solutions

than on-premise PBXs, though this is often not the case. Many Hosted VoIP providers require special proprietary bandwidth to use their voice services, which limits their use to locations with access to that proprietary bandwidth. Some providers do not have sufficient mobile features to make working remotely easy or feasible. Blended Architecture enables a more mobile workforce than ever before. Star2Star's Scalable Cloud Communications Solution runs over virtually any sufficient bandwidth, giving users the freedom to work almost anywhere. Because most of Star2Star's services connect to the cloud, users can turn their home, hotel room, or favorite restaurant into a completely connected office, with all the communications features of their actual office. For example, call center agents can turn their computer into a fully functioning business phone with the Star2Star SoftPhone and make their calls using their work extension from home. Not only does Star2Star make it easy for employees to work remotely, it also makes it easy for home offices to keep track of their agents in the field. Star2Star provides advanced presence monitoring through StarScope2 that makes it easy to track the status of remote workers, and features like Find Me/Follow Me and automatic call routing make reaching them no problem at all.

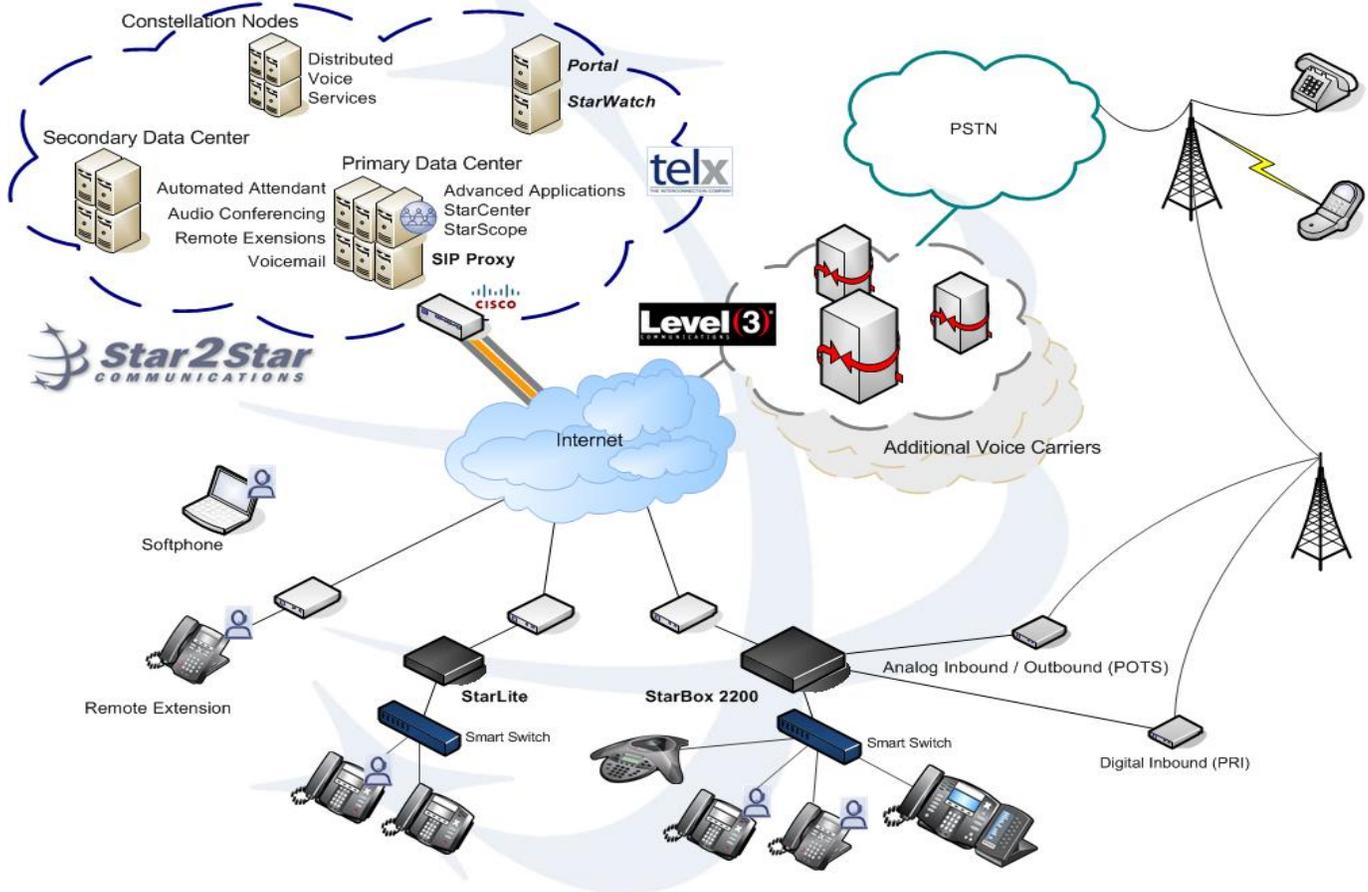
UNIFIED COMMUNICATIONS FUNCTIONALITY

Perhaps the biggest weakness of the PSTN is that it lacks the ability to provide the unified communications features that are increasingly necessary for modern business. On premise PBXs are generally incapable of connecting users through cloud based-communications methods such as instant messaging and video conferencing. The non-voice services that the PSTN can deliver, such as fax and conference calling, typically require additional dedicated lines, are more expensive than their cloud-based equivalents, and do not integrate with other communications. VoIP offers far greater potential for UC features than the PSTN ever could, but few providers offer a wholly unified solution. Many providers offer features that are either not integrated at all or only partially integrated. This means that users have to learn multiple systems to operate different aspects of their communications. It also tends to create compatibility issues. Star2Star offers a wide range of fully integrated UC features. Blended Architecture was designed from day one to function as a single, complete system with many different features, not as a collection of independent services. Star2Star users only have to learn one system, with fully integrated features. By harnessing the power of the cloud, Star2Star is able to provide features with full backup and failover and the same level of reliability as Star2Star's telephone service.

STAR2STAR UC PRODUCTS AND SERVICES

StarScope2 provides advanced presence monitoring. Managers and employees alike can track the status of other system users and connect with them easily. StarScope2 also serves as a platform from which other applications, known as Starlets, can be accessed. StarConferencing allows customers to host conference calls with up to 150 users. Some companies hold regular meetings with their entire workforce using StarConferencing. StarChat provides a fully integrated instant messaging solution for companies looking to decrease communication time and increase efficiency. Like most Star2Star features and services, StarChat is accessible through Star2Star's application framework. StarCenter and StarView provide inbound call centers with advanced operation, management, and reporting tools. StarCenter and StarView users can easily run multi-location call centers and improve their performance. Find Me/Follow Me automatically routes calls from office extensions to employee cell phones based on a customizable set of procedures. Find Me/Follow me ensures that even the most mobile professional never misses a call. StarVideo increases collaboration by providing users with the ability to host videoconferences with up to 12 users. During these videoconferences, users can exchange text messages and share files. StarFax Personal and StarFax Classic make it possible for users to send and receive faxes using the cloud and traditional fax machines, respectively. This solution is ideal for customers who need to communicate through fax but don't want to invest in the traditionally required hardware. The Star2Star SoftPhone and StarPhone for iPhone enable unprecedented levels of mobility by turning computers and smart phones into fully functioning Star2Star phones with presence management. Both can be used essentially anywhere sufficient bandwidth is present, allowing users to conserve their cellular minutes. Call recording is available on every Star2Star system. By recording calls, businesses can store important conversations for later, analyze employee performance, and improve operating efficiency. StarContact CRM Integration automatically displays screen pops with information retrieved from proprietary databases when an incoming call is received. This improves both call center performance and customer satisfaction.

Architecture Overview



DESIGNED FOR QUALITY AND BUSINESS CONTINUITY

This premise based approach provides local survivability. In the event of a major system outage, your voice traffic will be re-routed to an alternate co-location facility to ensure uninterrupted service. And with Kinetech's sophisticated Voice Quality Management System (VQMS), potential problems with voice quality are detected and corrected before they impact the quality of the telephone service experienced by your employees or your customers.

- Fully managed network
- NOC 24x7x365 Network Monitoring
- Automatic backup- 6 USA data centers
- Carrier Grade Tier 1 Network Providers
- Redundant Carriers and Systems
- Disaster Recovery-Automatic call re-routing
- Analog Line Backup Option

AROUND-THE-CLOCK MONITORING

Our software provides network visualization, automated problem detection and correction, drill down diagnostics, and centralized management that facilitate a managed quality of service.

We achieve unmatched uptime through a layered strategy of Carrier and WAN redundancy along with DID fail-over. This insures that you will receive unparalleled voice quality and on-going phone service. We load share our traffic with multiple Carrier Partners for network resiliency, while our Gateway Switches allows for DID fail over in case of a catastrophic failure.

Kinetech network engineers monitor the status of each customer system and quality of each call, and sophisticated alarms and events are used to proactively troubleshoot network operations to identify any potential issues before they impact IP telephony service.

Centralized monitoring and highly automated troubleshooting allow Kinetech to deliver the quality of service needed by today's discerning business customer.

CONTINUOUS AUTOMATED TESTING

Each customer's system continuously feeds real time information back to the network operations center, where it is readily available on the desktop displays of network engineers and on wall-mounted, large-screen displays for easy identification of any possible network issues. The automated monitoring system runs continuous tests to detect quality and reliability affecting issues such as:

- LAN impediments
- Phone problems
- Kinetech server issues
- Access circuit faults
- WAN backbone issues
- PSTN faults

The automated test software performs the following tests on a regular basis:

- Packet loss, jitter, latency on every path
 - Gateway to CPE, CPE to phone
 - Phone to CPE, CPE to Gateway
- Connection to NOC
- Route testing to all gateways
- Applications and memory
- Automated test calls, if real calls aren't active

NETWORK OPERATIONS CENTERS

Our monitoring software provides network visualization, automated problem detection and correction, drill down diagnostics, and centralized management that facilitate a managed quality of service.

Our Network Engineers:

- Use centralized monitoring and highly automated troubleshooting with:

- Quality Metrics- Packet Loss, Delay, Jitter
- Sophisticated alarms and events
- Trace route and root cause analysis
- Historical call detail records

- Proactively monitor the status of each customer's system to identify any potential issues before they impact IP telephony service.
- Work directly with the carrier engineers to identify network and last mile issues
- Re-route calls to alternate carriers and gateway providers

COMPARED WITH OTHER SYSTEMS

Hosted solutions as well as solutions that are offered by the Telcos and Cable companies are in essence "residential" products that have been modified with an attempt to meet the needs of the small to mid size business market. These solutions are not fully managed end to end for quality and reliability. Also, should problems arise, the business is given a support number to call that usually does not provide the response time required by a business. Many times the same support staff that takes residential calls will also take calls from the business.

The Kinetech solution was designed from the ground up **for the business market**, with the specific needs of the business as top priority- from quality and reliability through around the clock monitoring and support.

Compare Kinetech's Managed Voice Service Features	Kinetech	Others
Do you monitor voice quality and service availability on a 24/7 basis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you provide a fully redundant IP-based network infrastructure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you provision a dedicated broadband circuit just for voice?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you provide all phones, PBX systems and network devices?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the hardware monitored, managed and serviced by your company?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you replace faulty equipment immediately and at no charge?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you provide all software with regular updates and support?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can you detect and correct problems with your service proactively?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will you answer and resolve all support calls from my end users?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will every user get a dedicated phone number and voice mail box?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does your solution emulate the features of my old key telephone system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you support auto-attendant, directories, paging and music-on-hold?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you offer an integrated and secure IP-fax service for every user?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you provide unified messaging so that all of my voice mail, electronic faxes and email messages will be accessible in one place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you offer audio and web conferencing as an integrated service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will remote users who work from home or satellite offices have access to the same features and benefits as users located in the main office location?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can my remote users dial-by-extension to reach any user in any offices?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can I have multiple lines and duplicate extensions for any station?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In addition to wired handsets, do you also offer wireless and soft phones?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you provide one bill for all usage, network access, service and support?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does your pricing plan provide a predictable flat rate fee for every user?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Can I expand or reduce my service on a phone-by-phone basis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CONCLUSION

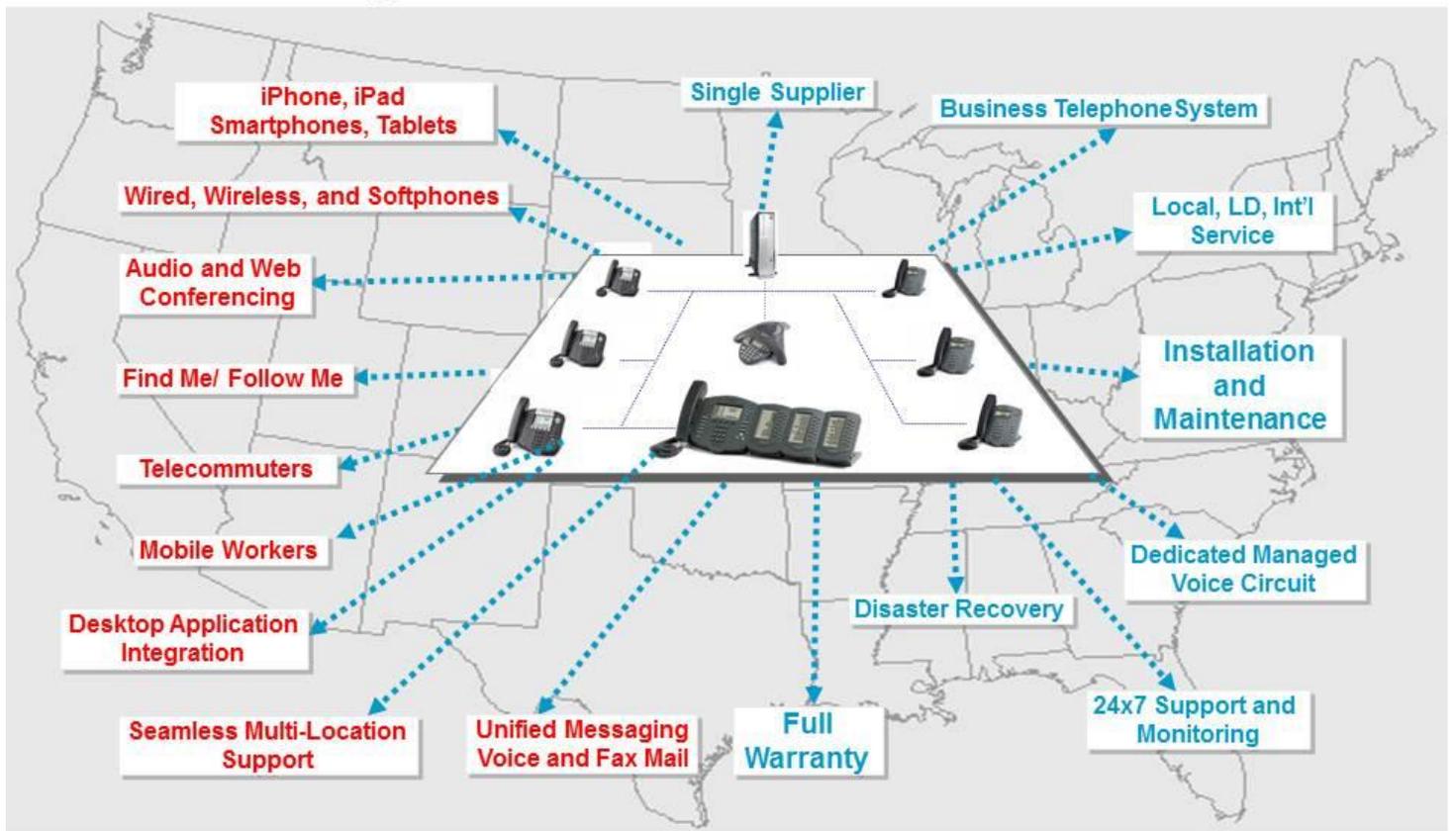
As has clearly been demonstrated, Blended Architecture offers a number of advantages when compared to both on premise PBX and Hosted VoIP solutions. But what does that mean for you as a customer? It means that you have more reliable and higher quality communications. While your competitors are unable to understand intra-office communications and are dropping customer calls, you will be operating efficiently and improving customer satisfaction. It means that you can reduce communications costs. The amount you save will vary depending on the size and nature of your business, as well as what you currently pay, but many Star2Star customers save upwards of 50% on their communications bill. Larger customers often save thousands of dollars every month. It means that you will have access to advanced functionality. Star2Star users improve performance and efficiency with features designed for 21st Century business. Star2Star allows sole proprietorships to sound and operate like a major conglomerate and makes major conglomerates as easy to manage and as closely connected as a sole proprietorship. Companies with Star2Star are able to collaborate in more and better ways than ever before. Most importantly, Blended Architecture means that your company will have the communications system that you need to meet the challenges of the future, a communications system that will grow as you grow, improve your operating efficiency, and make collaboration easier than ever before. For more information, please visit www.star2star.com.



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Conferencing Included

Scalable Cloud
Communications



Caller ID
Screen Pops



Desktop Fax With
Searchable Text
Fax Lines

Presence Management
Integrated Call Center
CRM Integration