Star2Star®
COMMUNICATIONS

The Benefits Of A Blended Architecture:
Is It The Right Choice For You?

Is Blended Architecture The *Right Choice* For You?

When you are choosing a new communications system for your business, you must examine a myriad of different options before deciding on the one that is the best fit for your company. Unfortunately, there are so many aspects to a communications system that it can be extremely challenging to make a meaningful comparison.

Although every business communications system is unique in some way, most can be lumped into one of three general categories: traditional on-premise PBX systems, hosted VoIP systems, and systems that use Blended Architecture.

What Is Blended Architecture?

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.

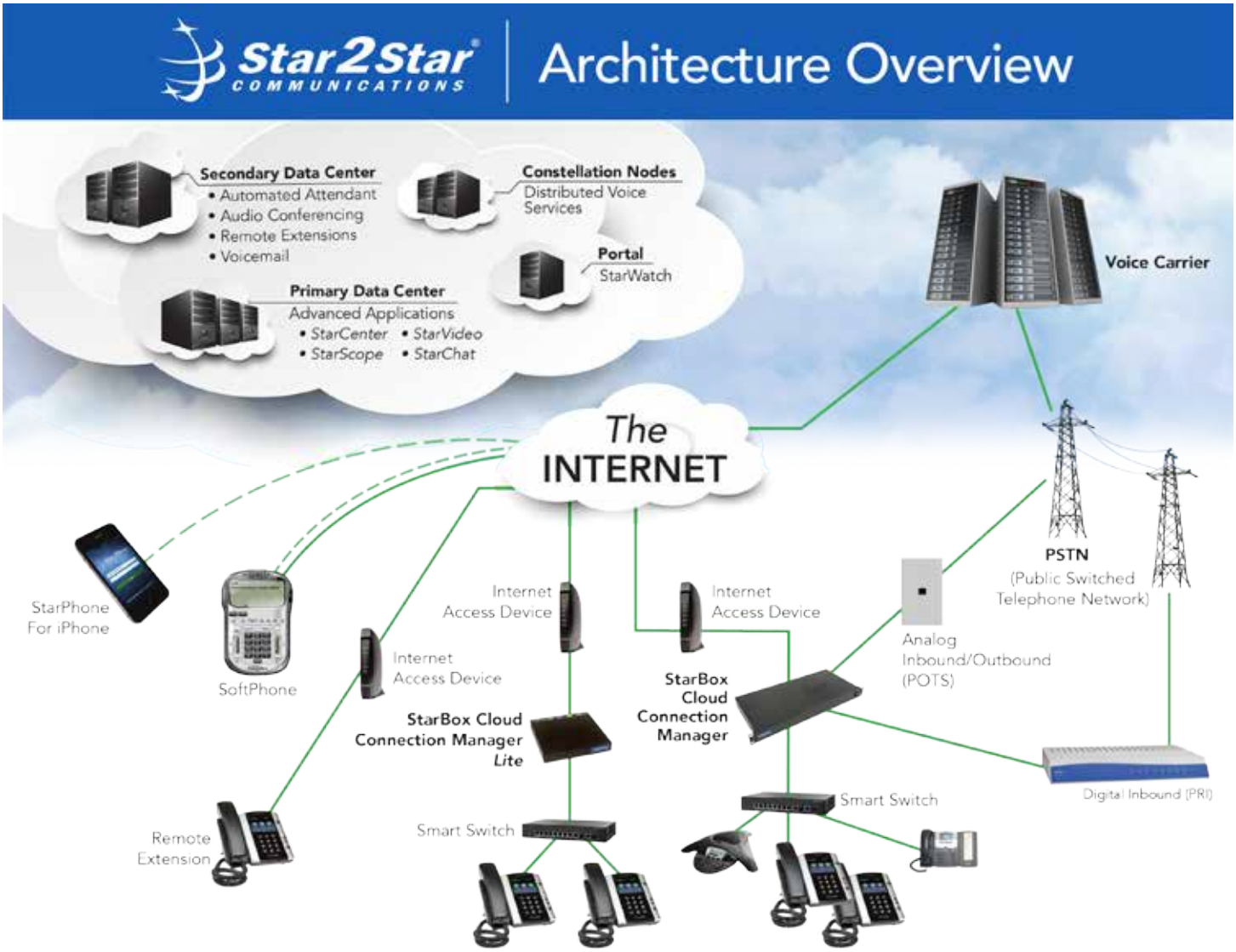
Spotlight on:

The StarBox Cloud Connection Manager

The StarBox Cloud Connection Manager is a vital part of every Star2Star system. A super-reliable, solid-state, on-premise connection manager, the StarBox Cloud Connection Manager is designed to improve call quality and increase functionality while reducing costs. The StarBox Cloud Connection Manager is totally unique to Star2Star and allows us to provide many of our most prominent features and services.

Constantly in communication with all of the major points of presence and the data centers that make up the Constellation™ Network, the StarBox Cloud Connection Manager plays a pivotal role in two-way traffic shaping, continuous network monitoring, and call routing. The StarBox Cloud Connection Manager also holds storage space, offers flexible networking configuration with dual WAN ports for automatic WAN failover, and provides the ability to manage multiple locations from a single login screen.

There are currently multiple StarBox models that offer similar management interfaces and feature sets but scale to different size customers.



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 intra-office 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.

Spotlight on:

How Star2Star Helped A Major National Retailer

Star2Star's Scalable Cloud Communications Solution meets the needs of even the largest companies. When a major national discount retail chain with over 11,000 locations was looking to update their communications system, they chose Star2Star because Blended Architecture provided a significantly more secure and reliable option than any of the other available options.

Star2Star adapted its installation processes and installed all 11,000-plus systems faster than anyone in the history of telecommunications had been able to. Once the installation was complete, the retailer began seeing the benefits of Star2Star's Blended Architecture immediately.

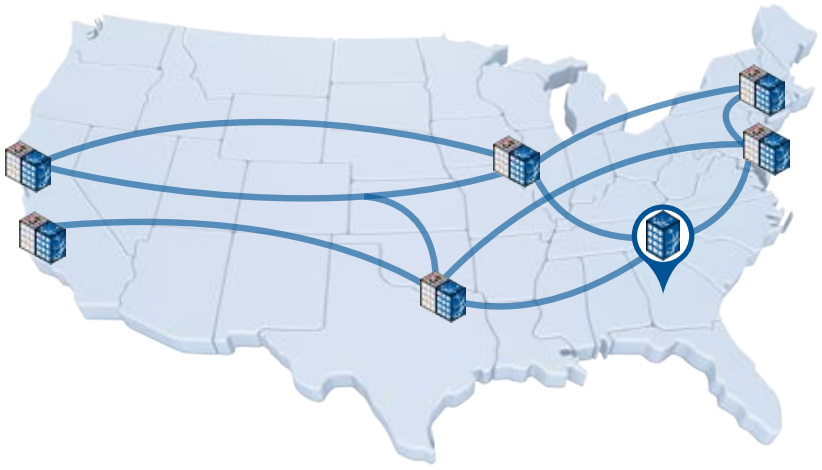
- The retailer is able to operate with 3,000 virtual call pathways pooled across the entire chain instead of more than 11,000 PSTN lines dedicated to single locations.
- Line bursting ensures no caller ever receives a busy signal.
- The retailer was able to reduce 1,100 separate phone bills from 300 different entities to one phone bill from one provider.
- A staff of 50 employees who were solely tasked with paying and keeping track of phone bills was transitioned to more profitable endeavors.
- All of the retailer's locations are now fully PCI-compliant.
- In the time since installation, Star2Star has saved the retailer millions of dollars.

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

Spotlight on:

The Aftermath Of Hurricane Sandy

Hurricane Sandy struck the East Coast of the United States in the fall of 2012, causing rampant destruction. Estimated to have caused at least 68 billion dollars in damages, the storm was the second costliest in US history. Hitting the densely populated Mid-Atlantic States hardest, Sandy left millions without power or telephone service.

Although it was widely assumed that phone service would quickly be restored in places like New York and New Jersey, that assumption proved false. Many businesses could not use their phones for weeks after Sandy, and some were still without service many months later. Unsurprisingly, this proved crippling, as companies that cannot communicate with customers and suppliers are essentially unable to conduct business operations. Thousands of companies were put in severe financial distress, and many were forced to close down permanently.

Businesses who used Star2Star were not nearly as negatively impacted. Star2Star's extensive disaster recovery protections allowed users to keep working, even if they were forced to do so remotely. By automatically routing calls to remote locations and cell phones, Star2Star users never lost contact. By accessing voicemail from email, they never had to miss a message. StarFax Personal users continued to receive faxes, which even those businesses that replaced landlines with cell phones were unable to do.

Not only was Star2Star able to keep its users in business, it gave them a major advantage over their competition. Customers trying to find goods and services were often unable to contact the competition, driving them towards Star2Star users. This is just one of the many examples of how Star2Star can transform a communications system from a costly burden into an important asset.

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.

Spotlight on:

Cisco UC 560 For Small Business

One example of a UC system that will no longer be supported by its provider is the Cisco Unified Communications for Small Business, often referred to as the Cisco UC560. In July of 2013, Cisco formally announced the end-of-life plan for the system. No more Cisco UC560 systems could be ordered after January 20th, 2014, and the service and all support for it will end entirely on January 31st, 2017.

This will force thousands of users to change communications systems after only a few years, a major shock to companies accustomed to keeping the same system for a decade or more. It will also cause them to spend hundreds or thousands of dollars to make the switch to a new system and cause disruption to their business operations while employees become familiar with the new system.

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 recover 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 produce 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.

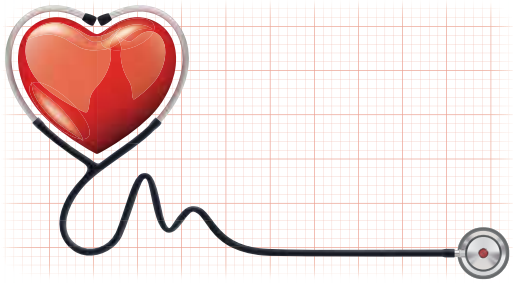
Traditional on-premise PBX systems offer virtually no mobility solutions because the PSTN is so reliant on direct connections. At most, you can have the same number connect to multiple phones at the same location, or utilize different numbers at different locations. Workers at companies who still use 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.

Spotlight on:

How Star2Star Helped A Large Medical Practice



Star2Star's advanced UC functionality helps business of all sizes and industries. A five-location medical practice with facilities in two states was having serious issues with the reliability of their phone system, which also lacked the features they were looking for. Most importantly, the practice utilized complex call routing procedures to make sure that calls reached their intended destination, but their existing phone system could not handle them.

Switching to Star2Star made all the difference. Star2Star was able to eliminate the reliability issues the practice was experiencing, allowing them to better serve their patients and more easily manage their staff. Star2Star's Scalable Cloud Communications Solution was able to provide the desired call routing automatically, simplifying the practice's operations and freeing up staff for more critical tasks.

The practice has seen other benefits as well. Star2Star's cloud-based auto attendants, automatic call forwarding, and unlimited voicemail have allowed the practice to replace their overnight answering service and eliminate its high cost.

The most popular feature among the staff is SmartPhone for iPhone. The app gives users the ability to receive and send calls from their personal cell phone, but have it display the Caller ID of the practice. This allows staff to constantly remain in touch with patients who need them without giving away their personal numbers.

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.

Spotlight on:

What StarCenter Can Do For You

StarCenter is a complete, full-featured inbound call center exclusively for Star2Star's business communications system. StarCenter is designed to improve call center operations through advanced queuing, calling, reporting, and management features.

StarCenter utilizes advanced ring strategies and Caller ID routing to send incoming calls to the most appropriate agent. Once callers are connected, StarCenter improves their experience with four types of flexible announcements, customizable queue specific messages that will play when a caller is on hold, nine levels of failover, and multiple action keys. Users can easily manage queues with queue monitoring and queue reporting. Inbound call center managers can take on a more active or a more passive role with agent reporting, administrative monitoring, paging or coaching, barge in, whisper, and inbound call recording.

Even better, StarCenter can span multiple locations, allowing businesses to distribute incoming call load across several offices, even if those offices are in different time zones. StarCenter can also route calls essentially anywhere there is sufficient bandwidth, enabling mobile call center agents. This allows call centers to hire and retain the best possible staff, without worrying about location.

There are two different versions of StarCenter. The Standard Edition of StarCenter is designed for mid-size businesses and enterprises, while StarCenter Lite is designed for smaller businesses with lesser call center needs.

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.

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.

About Star2Star

About Star2Star: Founded in 2006 in Sarasota, Florida, Star2Star Communications delivers the World's Most Complete and Scalable Cloud Communications Solution. Star2Star unifies customers' voice, video, fax, instant messaging and presence management into a single, easy-to-use system. Star2Star's award-winning, patent-pending Constellation™ technology overcomes the reliability and quality limitations of other communications technologies.

In the past three years, Star2Star was named to the Forbes Most Promising Companies list, the Deloitte Technology Fast 500 twice, and the Inc. 500|5000 three times. Star2Star also recently received Inc. Magazine's Hire Power Award honoring the top private business job creators in the country.

Star2Star Communications solutions are sold through a diversified network of partners that include distributors, master agents, managed service providers and certified installing resellers. Available across North America, Star2Star systems are installed in hundreds of thousands of businesses, including large national chains with multi-location communications footprints.

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