



VOIP FOR BUSINESS: STABILITY VS. SAVINGS

How can VoIP save your business money?

You want to or already have deployed a VoIP (Voice over Internet Protocol) capable phone system for your business, but where are the monthly cost savings, VoIP? You've seen some savings by reusing your existing company infrastructure, like network wiring, and you've seen a boost in productivity because of all the features that can come with VoIP, and specifically an IP PBX, but do you really need to entrust your voice to the wild west of the Internet to see any real impact on your monthly bill? We'll explore ways to get the most out of an IP PBX (Internet Protocol Private Branch eXchange) deployment so that your calls are as cheap and as reliable as you are willing to make them. And we'll look at ways to help you decide how much risk your company can tolerate in the name of slashing phone bills.

Wait, but isn't VoIP free?

Not exactly, no. If you make a call using VoIP to another user of the same VoIP network, then yes, this call could potentially be free. This is really dependent on what the owner of that network has decided for their policy. If the owner of the network is you, as in the case of multiple IP PBX systems joined together, then yes, those calls are free.

So what are you paying for then?

If you're not calling another VoIP user, like in the case where a VoIP call is made to a cell phone, somewhere, somehow, that call needs to jump out of the VoIP network and "terminate" into the PSTN (Public Switched Telephone Network). That's the service you're paying for when you're paying for VoIP service (Fig 1).

The main reason that your phone calls are less expensive when using a VoIP provider is because they're sending your call as far as they can with VoIP, and only sending it as short a distance as they can out on the PSTN. In other words, they're saving by not sending the call long distance either.

An ITSP (Internet Telephony Service Provider) with many termination points all around the world can have rates well below a traditional carrier for this reason. Take, for example, a call you want to make from Los Angeles to someone's regular home phone in Paris. If the VoIP carrier you're using has a termination point in Paris, you're in luck and the call will travel across the distance just like any other internet traffic (like if you sent an e-mail to someone in Paris), and then when it needs to go from that termination point in a data center out to the PSTN network in Paris, its just a local call, and therefore, cheap!

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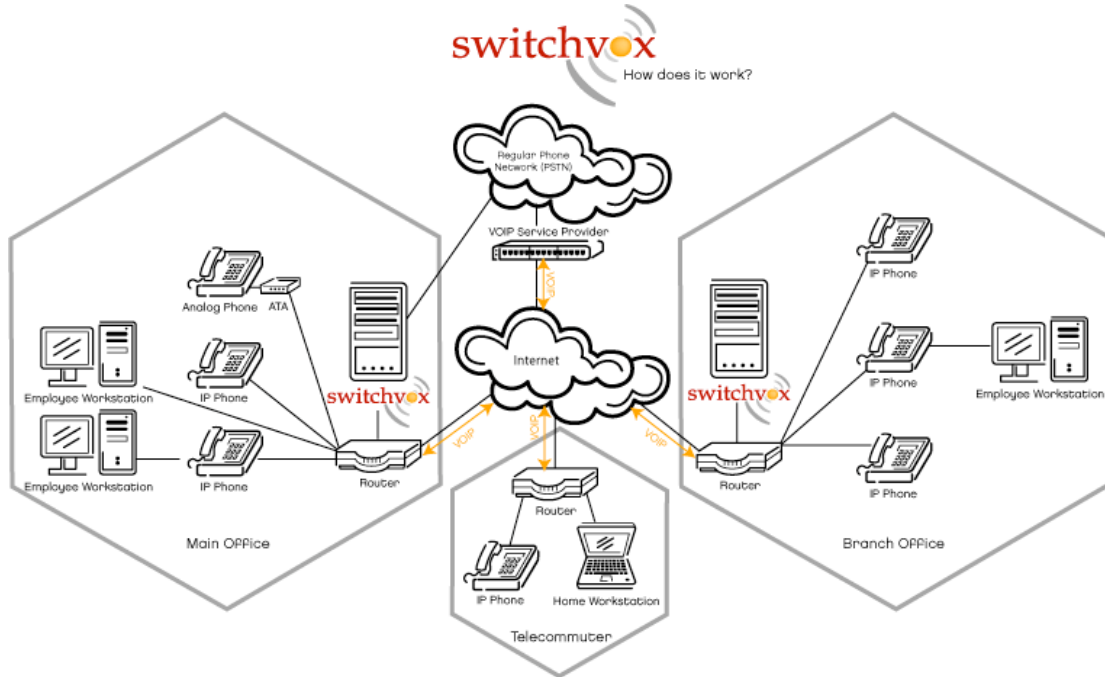


Fig. 1

But all this goes out the window when you consider that most ITSPs are actually just reselling a larger, wholesale carrier's minutes. So shopping for an ITSP can just come down to shopping for the lowest rates. But buyer beware! Just like anything else, you tend to get what you pay for. There are definitely bargains to be had, but it's important to know if the carrier you're researching is reselling someone else's minutes or if they actually have their own network. It may be better if they're reselling a larger carrier's minutes because that large company has a lot of infrastructure, presence worldwide, and support staff. On the other hand, you will get some frustrating answers from ITSPs that don't own their own network if they're experiencing an outage. Basically, there's not much they can do about it. So if you are going to choose to go with a provider that resells rather than owns their own network, the best bet is to choose a carrier that resells several larger carriers' minutes, instead of depending on just one.

Big Impact: Routing Calls Wisely

The whole goal here is to explore how routing your business calls through the right channels can impact your bottom line, without forcing you to jump into VoIP "head first" at the outset. VoIP may be cheap, but it's typically no more reliable than the internet, so balancing with PSTN calls would be the wise deployment, due to the government regulations placed on our old telephone network.

Scenario One: Use VoIP to Just Call Between Offices

So easy, it should actually be difficult to NOT implement an IP PBX this way. From remote employees, to entire remote offices, by deploying IP handsets and IP PBXs at each location, all of your devices can just talk to each other without intervention by an outside agency. That is, they all speak the same language, no translation is necessary, so there's nothing to pay for in that case but bandwidth. Presuming you've moved from a traditional PBX to an IP PBX, and have simply unplugged your old analog lines from the old system and plugged them in to the new system, you could still see some pretty decent savings by deploying this way. You could consider this to be the "safest" way to roll out an IP PBX, but unless your company does a lot of branch to branch calling or has a lot of employees working from home, you could probably aim a little higher.

Scenario Two: Add in VoIP for Select Outbound Calls

By adding in a VoIP provider to the mix, you can pick and choose through the Switchvox interface which calls should be handled by which route. Imagine your phone system, but instead of just having those old analog lines plugged in, you've also chosen to sign up for service with a VoIP service provider. In the Switchvox GUI interface, you can actually specify that for 911 calls, the system should send the call over the analog lines, but when you call New York, to use the VoIP service provider's route. See what we did there? We used VoIP because it's cheaper to call long distance using VoIP, but we used the analog lines when we didn't care about cost and just wanted the most reliable call possible.

With Switchvox you can get as specific as you want with defining types of calls (any long distance call, any call to Los Angeles, any call to 858-234-9090) so that you can route them the way that makes sense for your business. And by using several VoIP providers, you can boost the cost savings even more. If you have multiple providers, you can set the Switchvox to use the provider that gives you the best rate for the call, e.g., use VoIPro to call China, but Vongo to call Dallas.

Talk Smart: Remember that local calls over your analog lines are probably free. So check with your carrier and set up your local calls to route over those PSTN lines. This is one of those rare times when VoIP is almost never cheaper than the PSTN!

To balance a little reliability back in there, Switchvox can be set up with fail-over, or fallback routes for the calls that you specify. E.g., use Vongo to call Dallas, but if that fails, place the call using the good old PSTN lines. If you have multiple providers, you can get really fancy and stack the routes up as much as you like: use Vongo to call Dallas, but if that fails, use VoIPro, and if that fails too, use the PSTN. These fail-over routes can be put into place wherever it makes sense for your business. Would you like to fail over to the PSTN when your employees are trying to call China? It's up to you! Do you want to spend

\$30 on a five minute phone call, or would you rather your employee give it another shot in 5 minutes when the outage has (hopefully) passed?

An even more granular level of control is to define the routes that should be used not just by the number your employee is dialing, but by whom the employee is. Maybe you don't want your tech support team to call out using the analog lines unless its a 911 call and maybe they shouldn't be allowed to dial 1-900 numbers at all. Maybe the CEO should be able to use the PSTN fail-over route when she's trying to call China but the VoIP connection is unavailable. All of these options are open to you with Switchvox.

Hidden Savings: Switchvox comes equipped with powerful reporting tools so that you can constantly evaluate your inbound and outbound call patterns and make adjustments accordingly. During the first few months of installation, you can check to see what your peak inbound call volume was- it may turn out that your old PBX had 8 phone lines plugged into it, but with your new call routing system using VoIP for many of these calls, you've peaked at 3 inbound calls. It may be time to call up the phone company and cancel 4 of your lines. Score one more for VoIP cost savings!

This deployment scenario is the most common way that Digium's Switchvox IP PBX systems are deployed in the real world because they offer the most flexibility for balancing cost savings with reliability. If you find that your VoIP providers aren't as reliable as your business demands, you can ratchet up the use of the PSTN lines for many of your calls. If you find your VoIP lines have never been a problem, you can start scaling up their use and really see the savings add up.

Scenario 3: VoIP Inbound

In the previous scenarios, we've been discussing outbound calls but it is possible to use VoIP for inbound calls as well. A phone number (or as many as you need) can be procured from many VoIP service providers. These are often called "DIDs." It is often cheaper to get a DID than a PSTN phone line (that by nature comes with a phone number) and so it is an attractive option for many businesses trying to squeeze out the most cost savings possible with their new IP PBX. What many businesses fail to consider, however, is that they will often pay for outbound **and** inbound calls with this new number. With your old analog lines though, you probably didn't pay for inbound calls. E.g., if John calls Jane using a regular phone line, he pays for the call based on how long he's on the phone, and Jane doesn't pay a dime. With VoIP, unless you're signed up for a plan that is a flat fee for both outbound and inbound, you'd pay both ways.

Another point to consider when evaluating moving your numbers to VoIP DIDs is number portability. Unless your VoIP service provider can transfer your numbers, there are generally some costs associated with changing your businesses phone numbers: printing new business cards, informing your clients, updating advertisements or websites, etc.

And the last reason that using VoIP for inbound calls is unusual in a business IP PBX is the reliability factor. If that call can't reach the IP PBX, it's a far worse thing for most businesses than if an outbound call fails. Think of it this way, if you're sitting at your desk and try to call your customer in China and the call route rules don't fail over to the PSTN so your call simply fails, you're going to hang up the phone and try again in 5 minutes. If your customer, on the other hand, tries to call you and it doesn't work, who's to say they're ever going to call back again? Ouch. And there's nothing the IP PBX can do about this to fail-over, because the call isn't getting to it. It can't re-route a call that it doesn't have.

The bottom line is to be cautious when assuming you need to switch all of your numbers to DIDs. A far more common way to deploy VoIP DIDs is to use them as back up numbers in case all of your analog phone lines are full. Making sure you've got enough PSTN lines to handle your inbound call volume is important, but if you find that one day your company has been covered in the New York Times and your phone is ringing off the hook, you can at least roll over to your DIDs. And if those happen to be down at that very instant, I'd say you were both having very good luck and very bad luck on the same day. In other words, this is probably a reasonable risk for most businesses.

So how does one implement this scenario? Your PSTN provider probably has an option available that you can add to your plan that will forward inbound calls to another number if all of your phone lines are busy. Just give them your VoIP DID and tell them that's the number they should forward to. They don't even have to know it's a VoIP line, it looks just like a telephone number to them. If you are going to deploy this way, it is a good idea to look for a provider that will allow multiple inbound calls over the same DID, that way you're pretty much guaranteed not to "ring busy" when your customers call on the busiest day.

Scenario 4: All VoIP, All the Time

Sometimes Switchvox IP PBXs are deployed as an office phone system that strictly use VoIP and they don't have any analog lines plugged into them. One way that this happens is when a VoIP service provider actually doesn't route your business's calls over the Internet, but instead uses a private network. These types of providers can therefore offer data as well as VoIP service and can provide SLAs (Service Level Agreements) that other VoIP providers can not. They are actually in charge of what happens to your calls, rather than trusting them to the Internet. These types of providers can also offer QoS (Quality of Service) which prioritize your voice packets over your data packets, ensuring that your phone calls sound perfect. An often misunderstood aspect of VoIP is that it sounds bad- not true! It actually sounds better because its digital. What can sound bad is the network the call is on. Calls that travel over the Internet can often take on a robot-y sound or be choppy because they're sharing that "information superhighway" with a lot of other traffic. QoS ensures a clear path from start to finish.

The other, more risky, but cheapest way to do an all VoIP system is to get a regular VoIP service provider account and a DID or two. You will want to make sure you have a plan for dialing 911 (some VoIP

providers support this, others do not). This is, of course, both the cheapest (probably) way to deploy and fraught with the most risk (also probably). You may have great luck with this, and you may curse the day you ever tried it. For this reason, it's recommended that you work up to this gradually, rather than jumping in feet first and having to scale back and make adjustments to cope with trouble.

Failures? Outages? What gives?

With all of this talk about failures and outages, you might be asking yourself just what you're getting into! As I hope I've shown, VoIP can be deployed in such a way as to improve your call's sound quality, be cheaper and just plain better, but there can be bumps in the road, which is why I've outlined these different deployment scenarios. These bumps can be caused by a lot of different things, like outages of your ISP, big Internet backbone style outages (fairly rare, but they happen), and outages at your VoIP service provider. The important thing to remember is that if your IP PBX cannot navigate the route from its location to your service provider, your calls will fail. The regular analog lines that we've come to depend on are essentially an old, proven dedicated network that's regulated by our government to be up with "five nines" of reliability. The Internet is not such a beast, but it's still pretty darn good.

Balancing Act: The Best of Both Worlds

This straightforward assessment of the situation hopefully gives you the tools to evaluate for yourself how you'd like to deploy VoIP in your network. You can deploy something very simple that almost emulates a traditional PBX to a system with least cost routing implemented with fail-over rules that keep your company's communication running smoothly. There should be no reason to hesitate when it comes to deploying a next-generation phone system in your business!

To find out more about Digium, Switchvox, or the Open Source Asterisk Project, visit www.digium.com/switchvox or call 1-877-DIGIUM.