Making the right choice between VoIP Service and Traditional Telephone Service

Before making the switch to VoIP, businesses are often concerned about a comparison between traditional and VoIP service. Concerns over relative quality of both options, up-front capital expenditures required, features and benefits, disaster recovery elements and reliability.

Quality of service

The quality of VoIP is equivalent to that of the public switched telephone network in most cases. Although in the early days of VoIP this was not the case, advances in technology has eliminated any difference on this front. Users of VoIP however, should be aware that quality can be affected by the bandwidth being deployed. For example, VoIP over a dial-up Internet line would be highly impractical, and voice quality would be poor. For a small business with just a few phones, a standard broadband connection would be adequate, although for a larger business, a fractional or full T1 may be in order to accommodate the volume. Generally speaking though, so long as enough bandwidth is in use, quality of service will be the same for VoIP and traditional phone service.

You may already be using VoIP

VoIP is not a new technology; it has been around since 1973 when the Department of Defense experimented with using interconnected computers to carry voice calls in addition to data transfers. In fact, you may already be using VoIP without knowing it. Because of the reduction in equipment and service costs that VoIP offers, most telephone companies and cell phone service providers convert calls, at some stage of the journey, to VoIP and then download it to their exchanges, and the call is sent to its final destination from there. It is a seamless transition and the user never knows that VoIP is being used.

Up-front expenditures

The PBX is the largest capital expenditure for telephony, and this holds true for both VoIP and traditional service—although VoIP requires a specialized type of PBX, called the IP PBX. The cost differential between the two types of PBXes has narrowed, and the difference is minimal.

One advantage VoIP will have over traditional service, especially for smaller businesses, is that VoIP is available as a hosted service, which eliminates the need for the on-premises IP PBX. Multi-line service can still be provisioned, but the PBX is actually maintained off-site by a third

party provider, and fees are usually based on a monthly subscription rather than equipment purchase.

In some cases, when a larger corporation chooses to deploy their own IP PBX on premises, it may also be necessary to purchase IP phones or adapters, and this may represent an additional expenditure if existing phones must be replaced. However, for a new company that must buy phones anyway, the cost is about the same.

Reliability

Reliability again is roughly equivalent, although since your VoIP service is dependent on a VoIP provider and a broadband Internet service provider, as opposed to the phone company, a company will need to examine the service guarantees of these providers. Examine the service level agreement (SLA) to see if a guaranteed uptime is provided. And while traditional phone lines can and do go down, Internet service can also be interrupted, and when that occurs, phone service would also go down in the case of VoIP. Make sure your provider has demonstrated reliability and a good uptime guarantee.

Regular phone service works 99.9% of the time, says Keynote. That means just one out of every 1,000 calls won't be completed. But the average VoIP service drops 31 out of every 1,000 calls.

Even the worst result might seem good. But any dropped call could be crucial, such as a call to an emergency service. And U.S. residents are used to, and count on, nearly 100% phone call success. In sound quality, VoIP scored lower than regular phone service.

Keynote studied audio delay - how much time elapses after a caller speaks before the words are heard on the other end of the line. These are fractions of seconds, but too much delay makes a call sound herky-jerky, such as how some overseas calls sound.

On average, VoIP had a longer audio delay than regular phone service. The delay was not so long as to result in conversation overlap, but it remains an area that VoIP providers most need to improve.

Portability of VoIP

An advantage of VoIP over traditional service is that because calls are going over the Internet, instead of the phone company's wires, calls are no longer tied to a single physical location. Additional services can be provisioned to allow phone calls to be made from any location, directly from any computer with a broadband connection, using the same phone number. This allows for example, an executive who travels a lot, to maintain regular phone service while on the road.

A conventional backup

The advantages of VoIP are indisputable. However, some companies choose to retain a single conventional phone line for backup purposes and emergencies. Since a conventional line is not necessarily tied to the electrical system, it can still be used during a power outage, and can still be used in case of a broadband outage as well. For companies that depend on having an outside line at all times, this is often a good strategy.

In Summary :

- **Quality :**

  Corporate VoIP services (not Vonage or Skype) offer a quality that is very comparable to traditional phone systems.

- **Reliability :**

  Reliability is directly linked to the reliability of your internet connection. You should invest in a optical fibre primary connection and a decent secondary / backup connection (DSL or Cable).

- **What's required to avoid problems with VoIP :**

  We strongly recommend to invest in a solid internet access :

  o DSL and Cable will only do the job for a small office (1-10 employees) with proper QoS.

  o Upload speed is important (at least 1 Mbps should be dedicated for VoIP)

  o Uptime is important. If your internet is down and you do have a second internet connection your internet, emails and phones will be down. Typically optical fibre is far more reliable and if something is wrong, companies will repair it within' 4 hours. If you must choose between DSL and Cable, chose cable. This technology is more reliable and is not sensitive to the quality of the copper network in your neighborhood, the distance between your office and the CO (Central Office) like DSL is. So in order of preference :

    1. Optical fibre

    2. Cable internet (like Videotron)

    3. DSL internet (like Bell Sympatico)

  o IP phones also need power to work. No power, no phones. Invest in a reliable UPS / Battery system and make sure that your building has power backup : batteries, generator.

- Download speed is important (5-10 Mbps). This will also drastically improved overall internet experience and increase productivity.

- Optical fibre is better. Typically available in speeds of 5Mbps Up/Down or 10 Mbps up/down. 100 Mbps and 1000 Mbps (1 Gbps) are also available.

- QoS is recommended : VoIP is a bandwidth sensitive application, therefore using equipement (a QoS Switch or Router) or technology that allows you to prioritize your voice conversations on your network is always a very good idea. It is also possible to allocate some reserved capacity on your main optical fibre internet just for your VoIP application (typically 2 Mbps on a 10 Mbps optical internet connection).

  Some providers also offer optical fibre service with embedded Qos technology, like MPLS (MultiProtocol Label Switching). MPLS puts a tag that identifies the content of each packet that travels on your network and attributes priority to bandwidth sensitive packets. As an exemple, this technology will give priority to the packets related to a VoIP phone conversation over some YouTube video that is being watched somewhere else in the office. Some traffic can also be blocked completely like : streaming videos, streaming radio, IP TV, etc ….

- Avoid cheap providers such as Vonage, Skype, etc. This service is fine for a residential application but do not put the reputation of your business on the line for the sake of saving.

- **Is VoIP the right technology for me ? :**

  - **For the right setup you will not save money on the phone system. Performant VoIP phone system are not cheaper than traditional hpone systems**

  - **You should get VoIP if :**

    - **The additional VoIP benefits are appealing for you and your business model**

    - **It's important for you to follow the current techlogical trends. All economic indicators clearly show that VoIP is exploding :**

      ## The IP PBX market prepares for take-off.

      - ✓ It happened in 2005. Orders for IP PBX lines exceeded those of traditional PBX (In-Stat). The report predicted that the vast majority of the 6.6% annualized PBX market growth rate through 2009 would be IP.

- ✓ An In-Stat analyst opined that "with closer ties to data, this new vehicle is influencing corporate power structures and will ultimately have even more far-reaching effects on how business is done around the globe."
- ✓ Market research firm Dell'Oro Group forecasts a three-fold increase in IP PBX sales to a projected US $ 2 billion by 2010. Their report also predicted that sales of IP telephones would exceed $ 4 billion by that year.
- ✓ According to the report, other PBX segments are not expected to fare so well by 2011. Hybrid IP/TDM PBX revenues are predicted to decline starting in 2010, and by 2011, traditional PBXs are projected to make up less than five percent of the total market revenues.
- ✓ Strategic research firm Atlantic-ACM predicts that the sector will grow from US $ 6.4 billion (£3.2 billion) in 2006 to $ 15 billion (£7.6 billion) in 2012. The market for business VoIP and IP VPN (virtual private network) services is due to more than double over the coming five years, according to new figures.