# CUSTOMER FACTS

Voice over Internet Protocol (VoIP)

Voice over Internet Protocol, or "VoIP," is a relatively new type of telecommunications technology that converts analog voice signals from a phone or headset into digital data and transports the bits the same way that e-mail messages and attachments are sent. The major difference for consumers is whether the service uses VoIP end-to-end (never touching the public telephone network) or just uses VoIP to transport signals along some portion of the message's journey from caller to caller. There are several "flavors" of VoIP, each one with implications that consumers should understand before signing up with a given provider.

The first type of VoIP uses the local public telephone network just like traditional phone service, but calls between cities are converted into data and transported over broadband networks, then reconverted to analog signals on either end. This application of VoIP technology has been in use for several years by long distance carriers.

The pioneers in the VoIP industry are "peer-to-peer" providers, which simply provide a software application for your computer that does the analog-to-digital conversion and transmits conversations over the Internet rather than over the public phone network. There's no actual "service" provided by the VoIP provider, just software and customer support. With peer-to-peer VoIP service, you can only "call" others who also use peer-to-peer VoIP software on their computers; it's a limited service but it's relatively inexpensive. This type of service isn't meant to replace your traditional phone service but can save you a little money on what would otherwise be long distance calls to those other VoIP subscribers. Many businesses have developed internal phone systems using peer-to-peer VoIP networks that allow calling between offices located anywhere in the world, thus avoiding local and long distance calling fees.
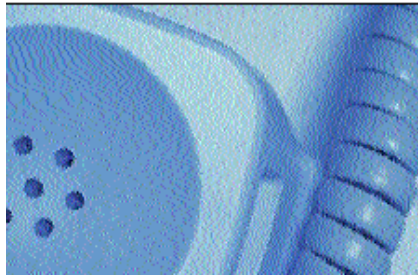
Another class of VoIP – we'll call it "hybrid VoIP" - allows you to use your phone to make digital calls to anyone who has a phone, not just other subscribers to your VoIP provider. The conversations are converted into data but are then transported to an Internet "gateway" that routes your call to the number you're calling, whether it's a traditional phone on the public network or another VoIP subscriber's computer. Several major cable companies now offer digital phone service that is actually hybrid VoIP. Each call is transported over the cable network as VoIP before being passed, through a gateway, on to the public phone network to be completed just the same as a call from a regular landline phone. It's hybrid VoIP that is growing the fastest and generating the most questions and concerns. There are key differences among these hybrid VoIP   services that consumers should take note of before choosing a provider.

The Advantages of VoIP

The biggest advantage of VoIP service over traditional phone service is price. It's generally cheaper to buy an unlimited local and long distance calling plan from a VoIP provider than from your landline phone company. It costs a lot less for the Internet phone companies to provide your service because they don't have to build or lease networks of fiber optic cable and copper wire. And because VoIP is a largely unregulated "information service" rather than a phone service, VoIP providers currently don't pay the access charges and fees that get tacked on to landline phone bills, making VoIP even cheaper by comparison. You do have to have a broadband Internet connection like digital cable or DSL and figure this cost into your total cost of phone service. But many consumers who already have a broadband connection can save by subscribing to a VoIP service.

Because VoIP is an Internet application, some providers allow you to check your voice messages directly from a computer and easily manage and share messages just like e-mail. VoIP providers offer a range of features that take advantage of this important difference between Internet calling and traditional calling services.

The other key advantage of VoIP is that it can be tied to an Internet address, which can move with you anywhere. So with a VoIP modem and phone adapter connected to your laptop, you can make and receive calls to and from your local phone number no matter what area code - or international code - you're in at the time. The VoIP provider makes sure its system works with the traditional phone network. Not all VoIP platforms allow "nomadic" calling, so check with your provider (or the ones you're considering) if this might be a useful feature for you.

VoIP and 911

Since November 28, 2005, all VoIP providers that allow you to make calls to and from the traditional telephone network (that excludes peer-to-peer VoIP software providers) must supply 911 emergency calling capabilities to their customers. Prior to that date, some VoIP services couldn't tell emergency operators who was making a 911 call and where the caller was located, both critical pieces of information to local rescue, police and fire departments. Today, all "interconnected" VoIP providers must deliver all 911 calls to the local emergency call center; deliver the caller's callback number and physical location to the call center; and let their customers know the capabilities and limitations of their VoIP 911 service.

Other differences between VoIP and traditional phone service

- If your broadband Internet connection goes down, your VoIP phone may not work. Some providers offer a service that will forward incoming calls to an alternate number (such as a cell phone) in the event the VoIP connection fails.
- Landline telephones are powered by the local phone company's network, so they keep working when you lose power. Since most VoIP services are tied to computers, they shut down when the power goes out. You can buy a backup power supply for your computer to keep your computer and phone working, but if your broadband service is provided by your cable company, the cable delivery system itself may be without power, leaving you without phone service during a power outage. Consider the cost of a backup power system before making a decision to jump to VoIP.
- If you have a security/alarm system, contact your service provider to make sure your system will work with a VoIP system. Some VoIP providers claim their service will work with most alarm systems while others are offering their own proprietary alarm services. But a few providers clearly state that their service will not support third party security systems.
- If you make international calls to landlines or wireless phones using VoIP, your provider may tack on fees for connecting those calls, which drives up the cost of the service. Read the fine print concerning international calling rates and restrictions before signing up.
- VoIP directory services are in their infancy, so don't expect the same level of operator service with an Internet phone.
- It's not clear how regulators will deal with telemarketers who send "VoIP spam" messages to VoIP phone subscribers. Traditional phone users can sign up for "no call" lists to avoid being deluged by telemarketing calls, but there is no such list to restrict Internet spammers.
- Some VoIP users have reported problems with using a fax machine over VoIP. You may have to change your fax settings to send and receive faxes over VoIP.

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