

ACMA VoIP Homepage

Voice over Internet Protocol (VoIP) is the name for the different technologies that allow telephone calls to be made over broadband internet connections. VoIP technology encodes voice communications into a digital format for transmission.

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Introduction to VoIP

Voice over Internet Protocol (VoIP) is the name for the different technologies that allow telephone calls to be made over broadband internet connections.

Phone calls from a regular home phone that we're all familiar with are made using the telephone network. When we pick up the phone and hear a dial tone, we have accessed a line on the network and that line stays open between us and the person we're calling until the end of the call.

VoIP calls don't use the phone network. Instead they take route calls via the internet. To send voice across the internet, the voice information is converted into a digital format and transmitted in packets of information in the form of data. The data packets are then sent across the internet and efficiently put back together at the other end for the receiver to hear.

When considering adopting a VoIP service, it is a good idea to be aware of the characteristics of VoIP services so you know how VoIP may change your telecommunications experience.

You should be able to obtain information about the types of features offered by a VoIP service, the types of equipment you might require to access the services, the costs related to the service, any limitations of the service and what your rights are in relation to complaints about the service. This should help inform your decision about whether to subscribe to a VoIP service, and if so, which VoIP service best meets your needs.

The following sections outline some of the advantages VoIP services may offer consumers, and also some of the unique features and potential limitations of some VoIP services when compared with a regular fixed line phone service. This information is intended to complement that which is normally supplied by VoIP providers.

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Potential advantages of VoIP

Key Points:

- VoIP offers free or very cheap calls
- Why VoIP is cheaper than calls made on the normal telephone line
- Enhanced Features

VoIP services offer an alternative to regular fixed line phone services that may provide benefits to consumers.

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VoIP offers free or very cheap calls

The main benefit of VoIP is that some providers offer free calls between their VoIP customers, and very low cost calls to other numbers including long distance and international calls.

Examples of charging structures for VoIP include:

- Free, usually between users on the same service
- One-off charge per connection
- Connection fee plus charge for time connected
- Cost per second/ minute
- Subscriptions

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Why is VoIP cheaper than calls made on the normal telephone line

Call made using a regular or Public Standard Telephone Network (PSTN) phone line take up the full capacity of two phone lines, the caller and the person called, for the duration of the call. The line is in use even when one party is listening and nothing is being transmitted from his or her end.

In a VoIP call, the conversation is split into packets of data which are then re-assembled at the receiving end. This uses capacity on the Internet more efficiently than capacity on the phone network for regular fixed line calls, which can translate into savings for the consumer.

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Enhanced Features

Many VoIP services provide enhanced, and easier to use call features without the additional costs that are sometimes incurred if these features are enabled using a regular fixed phone line. These include:

- voicemail,
- electronic notification of voicemails,
- opportunity to block calls from certain numbers,
- conference calls,
- routing to a selected phone number
- instant messaging,
- video calls
- file transfer
- ability to send text or visual information during a conversation
- ability to send files, such as a photo or document to the person with whom you're speaking
- higher definition voice conversation
- use your VoIP phone number no matter where you are
- make and receive VoIP calls over any broadband internet connection

Some enhanced features of VoIP services may only be available if both the person making a call and the person receiving a call are users of a PC-based VoIP service (often the same provider). This means, VoIP services may offer instant messaging, video calls and file transfer integrated with the voice service. These features may be useful if you want to send textual or visual information during a conversation or send files, such as a photo or document to the person with whom you're speaking.

Some VoIP providers can offer a higher definition voice conversation than that provided by a regular, fixed home service for calls that start and end on the internet. This is because these VoIP providers can make use of the greater capacity available on a broadband internet connection by comparison with a normal phone line to provide quality approaching that of a compact disc.

Some VoIP services offer the opportunity to use your VoIP phone number no matter where you are – so you can make calls and receive calls over your VoIP service anywhere a broadband internet connection and relevant equipment is available, including other States or countries. For example, from an internet café when you are travelling.

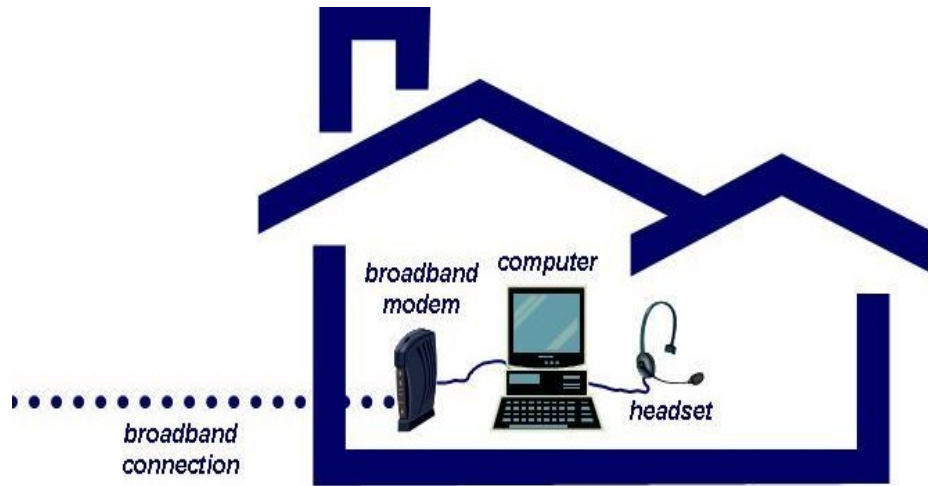
Not all VoIP services provide the capability to make calls to normal phone numbers. And not all VoIP services give you a phone number so you can receive calls from regular phone lines.

Some small businesses have benefited from the data characteristics of VoIP, using their VoIP service to transmit both voice and data.

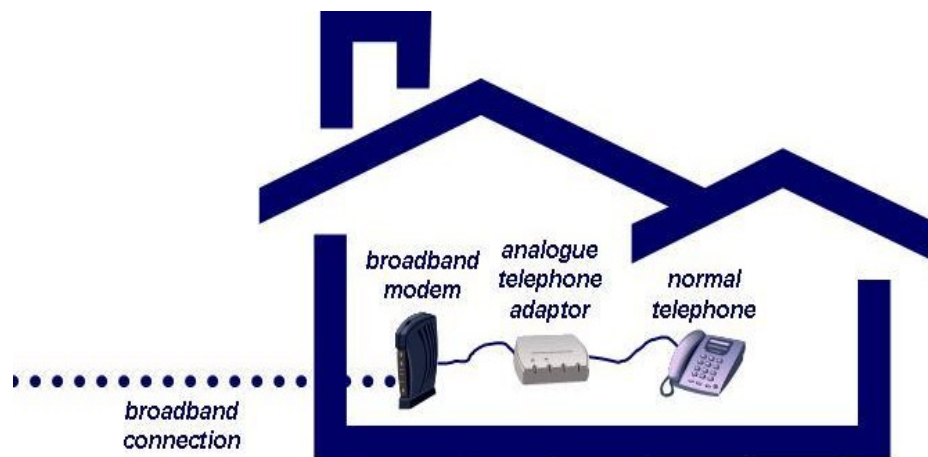
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Types of VoIP services

There is no one type of VoIP service. There is considerable variation among VoIP services as to the features they offer, the equipment required to operate them, and the way they operate. One of the most important distinctions between VoIP services relates to whether they require a computer to operate. One type of VoIP service operates via software running on a computer that is connected to a broadband connection (illustrated below).



The other type of VoIP service does not require a computer, and operates via an analogue telephone adaptor that is connected to a broadband connection (illustrated below).



broadband

While all VoIP users will require a broadband internet connection to access services, the other equipment you will need to access a VoIP service depends on the method of service provision offered by your VoIP provider.

The table below provides a guide to what you may require depending on the VoIP provider's services.

| | | |
|--|--|---|
| How does the service operate? | VoIP services that operate via a computer Uses software which runs on a computer with a broadband internet connection | VoIP services that operate independently of a computer Uses a dedicated device which plugs directly into a broadband internet connection |
| Where is the 'intelligence' required to operate the service | In VoIP software provided by the VoIP provider Microphone and speakers that connect to the computer | In an analogue telephone adaptor provided by the VoIP provider or available from an electronics store |
| What is required to make & receive calls? | OR | |
| | A headset that connects to the computer | |
| | OR | A normal telephone handset (or a cordless telephone base station) |
| | A special telephone handset that connects to the computer using a USB port | |
| | OR | |
| | A special device, known as a dongle, that is connected between | |

a normal telephone handset (or cordless telephone base station) and a computer

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How do I subscribe to a VOIP service?

If you don't already have a broadband connection, you will need to contact an internet service provider to arrange this.

If you decide to subscribe to a VoIP service you need to contact a VoIP provider.

Some internet service providers also offer a VoIP service.

Some VoIP providers only offer sign-up online.

VoIP providers may also offer the equipment required for their VoIP service through stores, especially electronics stores, which are bundled with a subscription to the service itself.

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Things to check with a VOIP provider

Like all phone providers, VoIP providers differ in terms of the services they offer.

Ideally, VoIP providers should make information available about

- the types of services they offer;
- the types of equipment you might require to access the services;
- the costs related to the service;
- any limitations of the service; and
- what your rights are in relation to complaints about the service.

(Provision of this information by VoIP providers has been encouraged by the Australian Communications Industry Forum, an organisation that fosters cooperation among providers in the communications industry.)

This information should help inform your decision about whether to subscribe to a VoIP service, and if so, which VoIP service best meets your needs.

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Checklist

The following questions may be helpful to ask about your own expectations and requirements of a VoIP service, and of the various VoIP services available to you.

1. Does the service enable you to call other users not using the same VoIP service; for example, can you make calls to mobile numbers, normal home lines, international numbers, 13 numbers, 1800 numbers, and other VoIP services?
2. Can you receive calls on your VoIP service, and are you assigned a phone number that other people can call?
3. What are the call costs for people wanting to call your VoIP service?
4. Do you need to purchase software or extra equipment such as an analogue phone adaptor to use the VoIP service?
5. What is required to setup/install the service?
6. Is a high level of computer literacy required to install/set-up service?
7. Is there a helpline/adequate customer service/adequate online help and is it readily available and useful?
8. Is there a test number that can be called at any time, particularly at setup/installation time, to check if the service is working properly?
9. Are there any arrangements for access to emergency calls, and what are they?
10. What is the quality of the service like?
11. What will the company do if the service is unavailable?
12. If the VoIP provider is based overseas, is the pricing of its services potentially subject to currency fluctuations?

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Key issues to consider before getting VoIP

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Emergency Calls

Key Points:

- Ability to make emergency calls
- Power
- Locating you in an emergency

Some VoIP providers may not be able to provide access to emergency calls. If it's important to you that you can make emergency calls from your VoIP service, check with your VoIP provider about access to emergency calls.

The quality of service provided over some broadband connections can be variable, which may impact on the ability of an emergency services operator to communicate clearly with the caller.

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Locating you in an emergency

It is important to note that, as with mobile phones, emergency services can have difficulty identifying the location of a call made over a VoIP service.

This is because calls from many VoIP services are capable of being made from anywhere in the world where a broadband service is available, rather than being in a fixed location like the regular fixed home phone. As such, when a call is made to emergency services from a VoIP service, it may be necessary to provide specific location information to the emergency services operator.

It's also worth being aware that if your VoIP service doesn't give you a number for receiving calls from regular phone lines, emergency services also won't be able to call you back after you've made an emergency call in the event they need further information.

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Power

VoIP services are dependent on access to the internet, either through a computer or a broadband modem.

If there is a power outage that affects the power supply to the computer or the broadband modem, the VoIP service will not be available. This includes calls to emergency services on 000 (or 106 for people with speech or hearing impairments that use a TTY or modem).

This situation is not unique to VoIP services. Mobile phones and cordless phones are also being dependent on a power source, and households which rely on such phones as their primary means of making calls often have a regular, non-portable fixed line phone that can be plugged directly into a phone socket. These phones receive power direct from the phone network in the case of a blackout allowing ongoing availability of phone services, including calls to emergency services. A similar back-up arrangement is worth considering in the case of VoIP services.

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Cost

Key Points:

- Consider the overall cost of calls and equipment

Consumers can benefit from alternative charging structures offered by many VoIP providers.

Consumers that choose the right VoIP service and call plan may find that some or all VoIP calls are cheaper than calls made over the regular, fixed home line; in fact, many of their VoIP calls may be free.

It is important to note, however, that there may be some additional set-up or ongoing costs to enable access to VoIP services.

In order to access a VoIP service you may need to purchase software and to purchase or rent equipment. If you are on a capped download rate you should note that the use of VoIP will contribute to your download.

Contact VoIP providers to determine the cost of equipment and software that you might require to access the VoIP service before you sign up.

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Quality

Key Points:

- VoIP has potential for variation in quality
- Broadband connection can affect your VoIP
- Headset/ Handset quality is important

Many VoIP services provide a better quality voice transmission than many would be expected from mobile calls, and some can even provide a better quality than calls made on the regular fixed line home line.

As mentioned under **High definition audio**, some VoIP services can offer an enhanced audio quality that is not available over the regular fixed home phone line.

However, VoIP services may be subject to more variation in the quality of calls than calls that are made over a PSTN line.

Calls made over a broadband connection are subject to variable performance due to competition for resources on the connection—for example, if the broadband connection is being used to download a large file while a VoIP call is in progress—or where the connection meets the public internet.

Check with VoIP providers about the information they can provide on the quality of their service.

The audio quality of your equipment may also factor in the clarity of audio you receive over VoIP. If headphones or microphones are faulty, it will make it difficult to talk or be heard.

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Security

Key Points:

- Protect your information
- Protect your computer
- Protect your cash

Protect your information

As VoIP calls pass across the internet and through third-party providers and ISPs, there is a risk that your communications could be monitored by any of these parties.

This is similar to the risk that an e-mail travelling the same path across the internet could be monitored.

Consequently, unless your call is encrypted by the VoIP service or you are using a Virtual Private Network (VPN) connection, you should be careful conveying sensitive information, such as financial details, in a VoIP call in the same way you would if you were entering sensitive information on a web page or e-mailing it.

You can obtain more information about protecting your privacy on the internet at www.privacy.gov.au/internet/internet_privacy

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Protect your computer

If you send and receive any information via a computer modem, you need to ensure you protect your computer from harmful viruses or.

Some helpful tips include:

- Get anti-virus software and make sure you keep it up to date.
- Use a firewall
- Check e-mail attachments for viruses before you open them.
- If something looks suspicious, don't open it! Find another way to check the information with the person who sent it.

Other useful links:

- [Australian Communications Industry Forum \(ACIF\)](#)
- [Australian Competition and Consumer Commission \(ACCC\)](#)
- [Australian Direct Marketing Association \(ADMA\)](#)
- [Australian High Tech Crime Centre \(AHTCC\)](#)
- [Australian Securities and Investments Commission \(ASIC\)](#)
- [Coalition Against Unsolicited Bulk Email \(CAUBE\) Australia](#)
- [Crime Prevention Branch, Attorney General's Dept](#)
- [Department of Communications, Information Technology and the Arts \(DCITA\)](#) formerly the [National Office for the Information Economy](#)
- [International Telecommunications Union \(ITU\)](#)
- [Internet Industry Association \(IIA\)](#)
- [Office of the Privacy Commissioner \(OPC\)](#)

- [Organisation for Economic Co-operation and Development \(OECD\)](#)
- [Scamwatch](#)
- [South Australia Internet Industry Association](#)
- [Western Australia Internet Association \(WAIA\)](#)

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Protect your cash

VoIP is a great tool for talking to other people, but you need be alert for scams and exercise the same caution you would if you were on the telephone or emailing.

Visit www.scamwatch.gov.au for more information about avoiding scams.

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