

Internet service providers (ISPs)

For most firms, a direct connection to the Internet is too expensive. Instead, an Internet service provider (ISP) acts as a gateway, providing the link between your own computer system and the Internet. An ISP can also host your website, making it permanently accessible to other web users.

But you should choose your ISP carefully. The quality and range of services ISPs offer and the way they charge can vary widely. Getting the right ISP is essential if you are going to make the most of the Internet.

This briefing outlines:

- Working out what you want from your ISP.
- Finding the right ISP.

1 What do you need?

Before you start shopping for an ISP, think about what you want to do on the Internet now — and how your needs might change in the future. You'll need some idea of how much capacity you will require and how much help you will need from an ISP.

1.1 Web access and email are the most **basic** uses of the Internet.

- Estimate the initial usage (including emails per day incoming and outgoing, hours per day accessing websites) and multiply both by the likely number of users. Then double the answers — because you'll spend more time online than you imagine. This will give you an indication of the kind of connection you will need. See **3**.

1.2 How many email **addresses** will you need?

- Some ISPs have limits: this is important if you want to give each employee a separate email address.

1.3 Do you want to use your own **domain name**?

- This will give your business its own web address for your website and email addresses.
- It looks more professional if you use your business name rather than the ISP's name.

1.4 Do you want your ISP to **host** your website?

- Your website may be a single information page or a full e-commerce site.

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The kind of website you have will make a difference to which ISPs you can use and how much it will cost. See 2.

1.5 Will you want to use **Internet telephony**?

- Internet telephony, or Voice over IP (VoIP), uses the Internet to make and receive phone calls at very cheap rates. This may be worth considering if you frequently need to call overseas.
- Ensure the VoIP offers a consistent minimum level of service, as unlike email and web access where it doesn't matter if you have to wait a second or two for the page to load, it does matter if your telephone conversation cuts in or out or gets disconnected.
- Some ISPs offer a premium package that will guarantee a minimum QoS (quality of service) so you can feel more comfortable running applications such as internet telephony.

1.6 Will you need **interactive** facilities?

Data sizes

Understanding data measurement — measured in kilobytes (KB) and kilobits (Kb) — will help you negotiate with your ISP in their language.

A The **size** of files is measured in kilobytes (KbB), while **transfer speeds** are measured in kilobits (Kb). A kilobyte is eight kilobits.

- Larger files and greater speeds are expressed in megabytes (MB) and megabits (Mb) — a thousand kilobytes and kilobits respectively.
- A thousand kilobytes or kilobits make a gigabyte or gigabit.

B File sizes depend on the length and **complexity** of the content.

- A three-line email might be around 4Kb.
- A four-page Word document may be 100Kb.
- A ten-second audio file may be 50Kb.
- A ten-second video file may be 250Kb.

Consider what kinds of files you will want to transfer through your Internet connection and how important speed of transfer is. This will help you to select the best connection method for you.

- Collaborative applications such as whiteboarding (where all participants can make and see changes to a document or a diagram in real time) and videoconferencing (where participants face a small camera and a microphone, and everyone can see and hear everyone else) can cut down on meetings and improve communication.

If you do, check your ISP and your connection method can handle these requirements.

1.7 Assess the degree of **technical support** you will need.

- Different ISPs provide different levels of support, including technical support over a free, standard-rate or premium-rate phone line, or by email.

As far as possible, make sure that your ISP can handle any future requirements too, as changing ISPs can be time-consuming and disruptive.

2 Hosting requirements

If you want your ISP to host your website, there are a number of other factors you will need to take into account.

2.1 The **size** of your website will determine the amount of space you need.

- More information and graphics will take up more space.
- ISPs often offer some free storage space.

2.2 The amount of **traffic** through your website will affect your choice.

- You need an ISP that can handle the expected level of site traffic effectively.
- Make sure your ISP will be flexible if your downloads exceed a set level.

A good ISP will give you extra capacity (bandwidth) to cater for any peaks in demand.

It will only charge you more if you remain over your allocated bandwidth for a set period (usually a month).

Others may charge you more straight away and then increase your bandwidth. In the interim, people may not be able to access your site and you could lose business.

2.3 The **speed** with which your ISP serves up pages of your website is important.

- If your site is slow, visitors will lose interest and go elsewhere.

Generally, visitors should receive your home page within 20 seconds.

- There are other factors that will affect the speed of your site.
For example, the speed of a visitor's connection and the amount of graphics on your site.
- If your website is complicated, does your ISP offer co-location?
Co-location is where an ISP has a dedicated computer housed at its premises, meaning that your connection speed is guaranteed.
The computer itself can be your own or rented from the ISP.
- In the UK, a facility exists to check ISP performance (see www.webperf.net for more information).

3 Connection speed

Once you know what your requirements are and how much data you will want to transfer through your ISP, you can choose the best type of connection.

Free ISP services

Free services are not usually suitable for businesses.

A A free ISP can be cost-effective if you are a very **light Internet user**.

But there are disadvantages:

- Reliability and speed are often poor.
- There is usually no service level agreement in place. If things go wrong, you may have no recourse.
- You cannot generally use your own domain name.
Internet and email addresses which contain the name of a free ISP do not give a good impression.
- Technical support is generally limited and often only available through premium-rate telephone numbers.
- Advanced services are not supported.

B The free web-based **email services** can be a useful addition to your main ISP.

- You can arrange to forward your email to a web-based service when you are abroad.
You will be able to collect your emails using local Internet access.
But web-based email services suffer from the same drawbacks as free ISPs.

Not all ISPs offer every kind of connection, so you can filter some out at this stage.

3.1 The simplest — and slowest — connection is through a **standard phone line**.

- This is suitable for light users, very small firms with few users or low data-transfer requirements.
- A standard modem can theoretically download at 56kB per second, but in practice it reaches a speed of around 40kB per second.
Therefore, a four-page Word document sized 100Kb would take around 20 seconds to download through this connection.
- A single ISDN line downloads at around 64kB per second and a double line will reach 128kB per second. The 100Kb Word file would download in around 13 seconds on a single ISDN line and seven seconds on a double.

3.2 Always-on connections are more suitable for most businesses, especially if you want to transfer data regularly or in large chunks.

- Dependent upon your area, you may be able to get a (SDSL, ADSL or cable) connection.
- For rural areas where ADSL will not reach, there are alternative broadband services such as satellite broadband, or even 'community' type WiFi (wireless network) services, whereby a street or office 'share' a single connection.
- In some areas ADSL is now available up to 8Mb. ADSL is not symmetric, so if you are planning to 'host' anything yourself, the speed in to your server will be considerably slower than your access out.
- Broadband download speeds currently range from 512 Kb to 10Mb per second or so, depending on your location and provider. Consider how much speed you will need now and in the future, as re-grading to a faster connection can incur charges.

3.3 If you have very high usage requirements and rock-solid reliability is essential, you should consider a **leased line**.

- This is the most expensive option and is only worth considering if your business has a large number of employees or is completely dependent on the Internet.

4 Making the choice

4.1 Decide what **services** you require.

- Some ISPs offer their own content, which is only available to subscribers.
- Most businesses can find the information they need on the Internet rather than using an ISP's content.

4.2 Decide what **remote access** you need.

- Many ISPs have an international presence, allowing you to access their services from other countries without having to make an international call to connect.

4.3 Ask around. Word-of-mouth **recommendations** can be useful.

- Check with contacts who have similar requirements from their ISP.
- Check other sources of help and advice (see **6**).

4.4 Compare **costs**, including:

- One-off set-up fees.
 - Monthly or annual charges.
 - Usage fees based on the volume of email traffic and the traffic from your website.
 - Any charges for web space.
 - Charges for web design or technical support.
- Costs can vary widely and will depend on the range and quality of service you need.
- Fixed-price deals can be very cost-effective for business use.

4.5 Find out about prospective ISPs' **service standards**.

- Many ISPs publish information about their current performance — including the speed of core areas of their networks — on their websites. If not, check ISP performance at www.webperf.net.

4.6 Never choose on **price** alone.

- The hours spent with no Internet connection and the loss to your business is not worth the few pounds you might save. Decide what factors are critical to your business (UK phone support, fast performance etc) and then find an ISP that can supply these for a price within your budget.

5 Contracts

5.1 Many ISPs offer **pay-as-you-go** services through a modem and standard telephone line without any need for a contract.

- You should check the service agreement.

5.2 Contracts are increasingly **flexible**.

- ADSL is available on a three-month contract from many ISPs. Don't be tied in for longer than you need to be.

5.3 Make sure any **domain names** are your property.

- If you need to change your ISP, you will want to retain the same domain names. Check the ISP uses suitable domain-name registries. For example, Nominet for .uk domain names (www.nominet.org.uk).
- Make sure that domain registrations clearly state that you or your company is the owner (registrant) of the domain.

5.4 Focus on what will happen if there are **problems**.

- A good, business-focused ISP will offer a service level agreement setting out what you can expect. For example, the maximum amount of time the ISP's own computers can be out of action each month and a response time to deal with any problems you have.
- A service level agreement should also state the compensation you will get if service falls below the specified standards.

6 Help and advice

6.1 Visit the **Internet Service Providers' Association** website at www.ispa.org.uk.

- Members of ISPA sign up to an industry code of practice that covers areas including quality of service and pricing.

6.2 The **DTI's best practice** website (www.dti.gov.uk/bestpractice) offers a range of publications, case studies and information and online advice.

- Resources include step-by-step guides to making the most of your Internet connection and useful links to additional sources of information.

6.3 Your existing **IT experts** or advisers may be able to help you.

- If you are investing significantly in your web presence, it may be worth paying a consultant to help you select the best ISP.
- The British Computer Society can provide names of consultants.
- Call 01793 417417 or visit www.bcs.org and click on Advice.

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