

Broadband v Ethernet

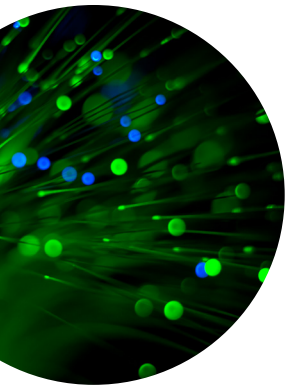
the business buyer's guide

JabbaTalk

Background:

The importance of Internet for the SME

Today, internet connectivity plays a pivotal role in the life of the typical SME. Email has changed the way businesses communicate. Ecommerce is transforming how businesses sell their products and services. And, most recently, SMEs are turning to the cloud for data storage, business software (such as Google Docs and Salesforce) and telephony services (IP telephony).



Without connectivity, most SME businesses would grind to a halt.

Given this dependence on data and connectivity, it may seem strange that many businesses seem happy to select their broadband package on price alone.

This could be for a variety of reasons. Certainly, the advertising of broadband products for the residential market – with its fixation on monthly price – may have perpetuated the myth that all broadband products are the same. Alongside this, a price threshold has emerged, where businesses seem reluctant to pay more than around £1 a day for their internet access.

In this Whitepaper, we aim to provide you with deeper insight into the options available for connecting your business to the internet and the cloud. We explore the differences between Broadband and Ethernet and consider why buying a cheap package could prove to be a false economy.



The Broadband option

Many businesses buy broadband on price alone, failing to recognise the true value of a robust data connection. Only when they lose the connection or experience poor performance does this value become all too clear.

In simple terms, connecting your business to the Internet comes down to a choice between Broadband and Ethernet technologies. To help determine which is the right option for your business, it's important to understand how each of these technologies works. So let's look at Broadband and Ethernet in turn and assess what each one has to offer the SME.



Broadband

A number of different broadband technologies (such as fixed line, wireless, mobile) have been developed in recent years, the two most prevalent in the UK being ADSL and cable modem services. Both deliver high-speed data connectivity typically used by business and homes to connect to the internet. In the UK, cable modem services are provided by Virgin Media, while ADSL)which stands for Asymmetric Digital Subscriber Line) is delivered over phone lines connected to the local telephone exchanges and is widely available from a range of suppliers. And, there's a bigger choice of providers. It is this fixed line ADSL technology we will focus on in this White Paper when referring to 'Broadband'.

ADSL has two main characteristics – it is provided over a phone line and offers more bandwidth to download data than it does to upload it, hence the label 'asymmetric'. This asymmetry stems from the technology originally being developed for the residential market where users are ostensibly more interested in downloading information than sending it. Over time, it has become widely adopted by businesses as well, owing to a number of inherent advantages.

Broadband – the pros and cons:

Broadband uses a shared public network. So, while fast speeds are achievable, there are times when the sheer volume of internet traffic slows everything down.

One of the main advantages of Broadband is its wide availability throughout the UK compared to cable services. This is because it is delivered via the existing telephony infrastructure. So almost every business and home can access it. It also offers the potential for fast speeds at an affordable price.

However, while the headline download speed may look fast, do remember this will be limited by your distance to the exchange and by general internet traffic volume. Upload speeds will be slower.

The way Broadband is delivered is one of its key disadvantages. Copper telephone lines are susceptible to signal loss – so, if your business is a long way from the exchange, you may get a very slow service. Adverse environmental conditions (storms, flooding etc) can also disrupt services.

Progress has been made on this front and Broadband remains the most popular way to connect to the internet. However, it is not as reliable as Ethernet – something that is reflected in Service Level Agreements and fix times.

The other major drawback of Broadband is the fact that it uses a shared public network. So, while fast speeds are achievable, there are times when the sheer volume of traffic slows everything down. For instance, on a typical weekday, there's often a sharp increase in traffic around 3.30pm – 4pm. Why? Because when children get out of school, they jump on the nearest device to start gaming, streaming music or watching YouTube. Business users will suffer if their Broadband provider is focused on residential users. When residential traffic increases, the speed of business connections tends to drop off.

Summary

For the price, Broadband provides value for money and is available almost everywhere. But most packages, even those marketed as 'Business Broadband', may not offer very reassuring service level agreements (SLAs). If your business, like many others, is becoming increasingly data-dependent, you may want to look at options beyond the basic Broadband package.

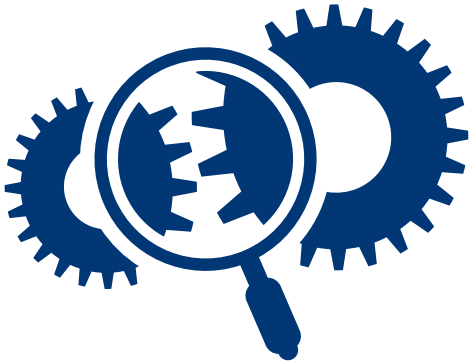
The Ethernet option

Ethernet is commonly known for being the standard used to link computers together on a local area network (LAN). Owing to its flexibility, scalability and robustness, it has now moved beyond the LAN to become the technology of choice for connecting businesses to the internet. These very high bandwidth services (typically up to 1Gb/s but in some cases 10Gb/s) are provided via a dedicated network, so a business does not share its bandwidth with any other business or user. Typically, Ethernet is provided using fibre optic cables. This provides a far more reliable and robust way to connect to the internet.

Ethernet - the pros and cons:

Think of ADSL Broadband as the public motorway of data services, liable to clog up at peak times. Ethernet is your private toll motorway – more expensive, but guaranteed to be faster and more reliable at all times.

Unlike Broadband, Ethernet was designed for businesses, not the residential market. Its key advantage lies in its use of dedicated high capacity fibre optic lines. Think of Broadband as the public motorway of data services – available to all users but liable to clog up at peak times. By way of contrast, Ethernet is your private toll motorway…more expensive, yes, but guaranteed to be faster and more reliable at all times.



Unlike Broadband, Ethernet is a symmetrical data transfer technology – so upstream capacity is the same as downstream. For the many businesses, this is essential – allowing outgoing email to be dispatched faster, FTP uploading to be carried out more efficiently and cloud-based services to be used seamlessly.

The robust nature of Ethernet means that faults and dropped connections, while possible, are extremely rare. Availability is often in excess of 99.9%. Should anything go wrong, fix times tend are much shorter than ADSL. Ethernet SLAs (Service Level Agreements) might typically feature fix times of just a few hours, compared to fix times of one to two days (possibly longer) for Broadband. It is also likely to be supported by a 24-hour support desk.

Service level agreements offered by Ethernet providers cover not only availability but also performance: the speed data takes to traverse the network (latency); how much variability there is in this speed (jitter); and how accurately data is transported (packet loss). Certain applications, like IP voice, can also be prioritised over others. These performance measures and the ability to prioritise are critical for more advanced applications businesses may use, like IP telephony, and other cloud-based services. They are typically not widely available on Broadband services, but are on those sold by providers who specialise in voice applications.

The downside of Ethernet can be cost, typically around ten times that of a basic broadband package, although as Ethernet prices come down the gap is closing. For SMEs with limited IT budgets, this is clearly an issue.

Summary

In terms of performance and technology, Ethernet is clearly superior to Broadband. But for many SMEs, particularly smaller ones, the extra monthly cost puts it out of reach. However, there are hybrid products (which we'll consider in the following section) offering performance closer to that of Ethernet – without the price tag.



Bridging the performance gap

As connectivity becomes an increasingly critical issue for businesses, the need for a more robust, yet still affordable internet connection is growing.

Clearly, a large gap exists between Broadband and Ethernet services. One offers businesses cheap, variable speed internet access – perhaps for less than £1 a day. The other offers a business-grade service with very high bandwidth and a reliable connection, backed by robust SLAs (Service Level Agreements), but at a price.

As connectivity becomes an increasingly critical issue for businesses, the need for a more robust, yet still affordable internet connection is growing. As a result, we're beginning to see a number of hybrid products offering many of the advantages of Ethernet at a more accessible price point. Let's look at the most popular options:

Ethernet in the First Mile (EFM)

EFM is a type of Ethernet service that uses multiple copper lines to connect an office instead of a fibre optic circuit. This provides a dedicated connection to the exchange. However, because the technology is based on copper lines, it is limited in terms of bandwidth and can only reach a maximum speed of 35 Mb/s. Typically the average speed that can be achieved is 15 Mb/s.

EFM provides a much more robust, reliable service than Broadband. The use of multiple lines means that if a fault does occur on one line, the service can continue on the others. EFM is also fully symmetrical – so the upload speed is just as fast as the download speed. This could be particularly valuable if your business uploads large volumes of data or uses IP voice telephony and video conferencing. A word of caution. If you are considering this route, check with your provider as some EFM providers cannot prioritise voice over their service.



Like full Ethernet, you get the stringent performance SLAs with high levels of customer support, but the time to fix is typically one hour more than fibre optic Ethernet. It can also be installed in one month, rather than three months, much faster than fibre optic services.

The cost will lie somewhere between that of Broadband and fibre optic Ethernet.

Fibre To The Cabinet (FTTC)

Fibre to the Cabinet (FTTC) involves running fibre optic cables from the local telephone exchange or distribution point to the street cabinets. From here, the connection to your business is via a copper line. Because this short length of copper line can use VDSL (Very High Bit Rate Digital Subscriber line) technology, higher speeds than ADSL can be achieved.

Download speeds can be as high as 80Mb/s, though this will be limited by the distance from your business to the cabinet. Unlike EFM, the service is not symmetrical – so expect slower upload performance though still much faster than broadband at around 20Mb/s.

A variant of FTTC is FTTP (Fibre to the Premises) where the connection from the exchange all the way to the business premises is fibre optic, eliminating the copper leg entirely. This creates a faster connection still, although availability is currently very restricted.

As FTTC is essentially a Broadband product, services are generally delivered over a shared network with a weaker SLA than Ethernet. FTTC is cheaper than EFM, but more than Broadband.

FTTC is currently available to around 50% of premises in the UK and expected to reach 66% by mid-2014. If you are in remote or poorly connected areas then FTTC may not be an option.

FTTC Ethernet

The UK connectivity market is extremely innovative and fast-moving. The most recent innovation available to business customers is the use of an FTTC connection to provide an Ethernet service. The service differs from that provided by FTTC in that the customer's connection is handed off to a dedicated Ethernet network, rather than a shared Broadband network. This service is provided with the same high performance as fibre optic and EFM Ethernet services and is installed in half the time as EFM. The time to fix a fault is longer, typically eight hours, or one business day. Like EFM, not all providers can prioritise voice over this service.

Price-wise, FTTC Ethernet is cheaper than EFM, but dearer than FTTC and Broadband.

Business-grade Broadband

For some small businesses, a Broadband package may still be the only realistic option if the IT budget is very small. In this scenario, a so-called 'business-grade' Broadband product should be chosen. This will offer features and benefits over and above those available from an entry-level product – which is really just a residential product dressed up as a business product. A dedicated business Broadband provider will focus its efforts on the specific application and peak demand needs of businesses – rather than residential users. This should lead to better overall service quality.

It's important to look for some form of Service Level Agreement (SLA) relating to fix times and customer support. As a business customer, you should get a better service level and priority over residential customers. But the lower you go on price, the less likely this is to be the case.

Perhaps the key consideration is this: how will your provider respond when you have a broadband fault? As a business, faults can hit revenues and disrupt both internal and external communication channels. Be sure that the support you receive recognises the importance of resolving faults efficiently and effectively.

Which option is right for you?

The key thing is not to put your business at risk by underinvesting in connectivity.

The choice between Broadband, Ethernet or a hybrid technology ultimately depends on how important connectivity is to your business.

If losing connectivity (web access, email, ftp capability etc) for a day or more could seriously harm your business, you may want to consider one of the Ethernet technologies we have outlined. The high availability – combined with short fix times should a fault develop – will give your business both continuity of service and peace of mind.

Likewise, if your business is considering or has already embraced 'next generation' technologies such as IP telephony, video conferencing and cloud-based software services, your business really does need a more robust, dedicated network. Again, Ethernet will probably fit the bill.

To make your IT and telecoms budgets stretch further, you could consider a converged Ethernet solution (EFM, FTTC or FTTC Ethernet), which combines both high-speed data and high quality IP telephony in one package. However, availability may be limited depending on your location.

If your IT budget is tight or for those smaller businesses who can't justify the extra cost, a business-grade Broadband package is the option to go for. But choose carefully – make sure the package is backed by firm Service Level Agreements (SLAs) and adequate customer support.

Whichever option you go for, the key thing is not to put your business at risk by underinvesting in connectivity.

Broadband v Ethernet:

The verdict

Recognise the true value of connectivity to your business – and invest in a connection package accordingly.

When you're choosing how to connect your business to the internet and the cloud, you need to look beyond the headline price. Think like a business, not a bargain-hunting consumer.

While Broadband certainly offers value-for-money, it isn't as robust a technology as Ethernet. The use of the public telecoms network means Broadband lacks the performance and reliability today's SMEs need – especially if connectivity is central to their business.

Ethernet, using dedicated fibre optic connections, offers high speed, performance and reliability. It is designed specifically for businesses and backed by a stringent SLA. For that reason, it's a clear winner over Broadband. If your IT budget can't quite stretch to it, there are lower cost options to consider. EFM (Ethernet in the First Mile), FTTC (Fibre to the Cabinet) and FTTC Ethernet are cheaper than full fibre optic Ethernet – but still give the same high quality service with a slightly slower time to fix promise.

Whichever package you go for, make sure it is backed by robust SLAs (Service Level Agreements) relating to fix times.

The important thing is to recognise the true value of connectivity to your business – and invest in a connection package accordingly. Buy the best your business can afford, not the cheapest on offer.

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