Guide

Networks: We Need a New Approach

Considering the Options

Between Ethernet services, ADSL, fibre broadband and Ethernet in the First Mile (EFM), businesses have never had as many high-speed network options as they do today. Whatever your requirements, whatever your budget, there will be more than one product that should fit your needs. What's more, while market consolidation has thinned the numbers down, there are still dozens of suppliers out there, all with their own portfolio, and all trying their best to deliver great services at more affordable price points.

On one level this is great for businesses, but it's also a recipe for confusion. There are so many different products, with different speeds, different costs and different installation times, and with too much focus on products, price and headline bandwidth. Businesses see that product X offers similar bandwidth to product Y but costs significantly less, and they don't always understand why. Yet the really important thing isn't the product, but how the business intends to use it. Maybe if we started with applications and requirements, then used that to guide our network decisions, it would be easier to make the right choice.

It's time to take an applications first approach

The simple fact is that networks are a complex issue, and the requirements of a business that needs to link up Electronic Point of Sale (EPOS) terminals to head office may be different from the needs of a business that wants to invest in cloud-based applications. These in turn may be different from the needs of a business that's pushing into unified communications and video conferencing. Beyond the usual price/performance balance, businesses need to think about the risks they face should their network go wrong, and how quality of service (QoS) features and Service Level Agreements (SLAs) can protect them. Rather than looking at things from a products-first perspective, it's time to take an applications-first approach.

The Confusion

Any confusion in the market is easy to understand. There's considerable overlap between super-fast fibre products running at up to 36Mb and 72Mb, EFM services running at 10Mb to 35MB and entry-level Ethernet products, yet substantial variations between the three on price. Some business-grade products, particularly Ethernet, seem to come with disadvantages, including longer lead times and additional installation charges. They may come with longer contracts, or with more complex or expensive regrade options if you need to change connections later. It's no wonder that many businesses don't know where to start.

Managing Risks

Finding the right network product needs to be partly about allowing businesses to get the most out of their next-generation applications, but also about reducing the attendant risks. Many providers and their enterprise customers make a decision on the network based on the size of the business, rather than the requirements of an application or the risks involved should the connection fail. That's why you'll find retailers running several point-of-sale (PoS) terminals over a single consumer-grade broadband connection, or an office running multiple Web-based applications, voice and even video lines over a connection that's not fit for purpose.

There's a temptation for businesses to match the network to the size of the business; to think "we're a medium-sized business, in a medium-sized office, let's keep our network costs as low as possible." What's more, some take the view that, because they've been using low-grade services for the last few years and nothing has gone wrong, nothing will go wrong. Why pay more?

Yet take a look at it from a risks point of view. A leading floral suppliers wholesaler relied upon low-cost IP VPN links between their branch stores and head office. Each store used different technologies and different suppliers, and the

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connections were frequently unreliable, leaving the stores unable to process transactions, resulting in lost business.

Think about it. A retailer's EPOS terminals might have many hundreds even thousands of pounds depending on the number of transactions running over them during a single day. If stores can't transact, they lose money, and that loss could have serious implications for the cashflow of the business as a whole. Even in companies where transactions aren't an issue, loss of the network can be damaging. It can hold employees back from working on an urgent case or project, and if it prevents communications or causes inconvenience for a customer, there could be damage to reputation too. It might not even take a complete loss of the network to have serious effects. Insufficient bandwidth or network congestion could mean poor-quality voice and video calls, or even a loss of service for some users while someone else is on a call.

It's time to tailor the service to the application. Consider what you need, who's going to need it, and what costs and issues you might incur should those people not have access.

This is why having a business-grade network with proper traffic management is so important; you're not just paying for a box-ticking feature, but taking appropriate steps to ensure that business-critical traffic can get through. In fact, paying extra for a more resilient service with dedicated bandwidth, QoS management and rapid, responsive support can be like paying the premiums for house insurance. You might not need to claim, and you probably hope you never will, but if you do need it and don't have it, the effects could be devastating. So, in modern business, the effects of poor or an unreliable network can be very serious indeed.

That's also why businesses need to think carefully about failover options. Conscientious providers will normally recommend some kind of backup connection for business critical applications, whether that means a mobile data connection, fibre broadband or a second Ethernet line. With the floral supplies wholesaler, their unreliable connections were replaced with new broadband links to the branch stores and a fibre broadband link for the head office. This made their core network much more resilient. However, extra lines for IP VPN failover were also added, ensuring that, whatever happened, they could continue to transact.

It was the same for a company that specialised in high-end nightspots. Here EPOS systems, e-mail and shared applications were all plagued with instability, because the company's network wasn't adequate for its needs. The organisation moved from a slightly ad-hoc IP VPN to a robust Leased Line solution providing guaranteed throughput plus a separate ADSL circuit for backup. It's not just about providing an adequate network, but ensuring that core business functions can keep going no matter what happens to the principal connection. Your business or your application might not ever need a failover solution, but having one and not needing it is a whole lot better than needing and not having.

Performance

Performance can be another source of confusion. After all, if you have the choice of an affordable super-fast fibre broadband service running at up to 36Mb and an EFM service running at 35Mb, then you might think that they'll both offer similar bandwidth. Not necessarily. All fibre broadband products are subject to factors including contention with other users and distance from the exchange, which means that speeds will vary, even during the course of a single day. Ethernet and EFM services give you exactly the bandwidth that you pay for, all of the time. What's more, where fibre broadband services are asymmetrical – traffic flowing to your network moves faster than traffic flowing

out – Ethernet and EFM services are symmetrical, with traffic flowing in both directions at equal speed. With data-intensive applications, including video-conferencing, telephony, cloud-based applications or data backup and disaster recovery, the difference can be crucial.

Recently a large enterprise working in the frozen food sector, had consolidated its core systems in a central Data Centre, but while this was helping them reduce costs, it also turned the network into a bottleneck, where slow connection speeds, a poorly managed service and limited resilience affected availability – and so the bottom line. Practically anything would have been an improvement on the existing 2MB MPLS network, but they were moved to a high availability Fibre Ethernet network, linking their sites to the data centre and the disaster recovery site. It's not merely a question of performance, but of guaranteed availability.

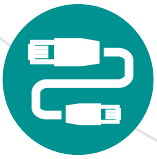
This doesn't necessarily make Ethernet and EFM a better choice than fibre for every business, but it means you need to take a careful look at the applications you're planning to run and the number of users you need to support. At the moment, video conferencing and unified communications applications, such as Microsoft Lync, are the preserve of larger enterprises, but they are trickling downwards into smaller businesses. Not only do they save companies money, but they can also give employees a presence at meetings or client-side discussions without the need to travel. That's good for the employee, and good for the bottom line.

Bandwidth is important for these applications, but it's not the only factor. Again, proper QoS management can play its part, prioritising this kind of traffic so that these data-intensive applications stay smooth and responsive. A national charity with seven core offices and over 250 service locations, was keen to embrace video conferencing, but its current ADSL, SDSL and leased line network had no QoS features whatsoever. It wasn't up the task. It was shifted to a higher-bandwidth, Ethernet-based IP VPN solution, but QoS was also applied to the primary sites. The result? No matter how busy the network became, video meetings could go on unaffected.

Lead Times, Contracts and Agreements

One huge advantage for affordable fibre broadband services is convenience. You can have a service setup within five working days, with sub-£25 activation costs and contracts running anywhere between one month and one year. Ethernet and EFM services might have lead times of between 15 and 65 working days, with installation costs running into hundreds or even thousands of pounds, and contracts of up to three years.

Why? Partly it's a question of the costs of setup and the tools available for providers. While fibre services can be provisioned rapidly and almost automatically using self-service tools, Ethernet and EFM services typically require a higher level of planning, more equipment and more engineer time. In fact, they might also involve more long-term monitoring and support. A business isn't buying an off-the-peg product, but a service that needs a level of customisation to their needs, frequently involving active participation from a wholesale provider. This can mean a longer wait and a higher upfront cost, but these are balanced by the benefits long-term.



It's also worth noting that, just because you're committed to a two or three year contract, that doesn't necessarily mean that you're committed to using the exact same service. Most providers will have options for regrading Ethernet and EFM services, ensuring you can scale upwards to handle more users or more demanding applications in the future. With an EFM

service, for example, bandwidth can be scaled upwards at short notice to handle anticipated peaks in demand.

Most importantly, these contracts work in the customer's favour too. Business-grade services come backed up by a Service Level Agreement (SLA), committing the provider to set levels of availability, service and performance, and defining what the customer can expect in return should those levels not be met. Some see the SLA as a guarantee of availability, but it's better seen as the provider putting its money where its mouth is. The SLA tells you that if the provider fails to deliver a decent, reliable service, then you can have money back and/or take your business elsewhere, without penalty. The strength of an SLA is a great indicator of how much a provider trusts its own products.

Putting solutions first, not products

As we said, networks are a complex issue. It's impossible to talk about it without talking about products, and customers need to understand how these products compare in terms of risks, costs and long-term value for money. Yet many business customers would be better served by a shift from a products-first perspective, which tries to fit specific products to specific categories of business, to a solutions-first approach, which looks at the requirements of the business and its applications and finds the network package to fit. Instead of saying fit the network to the size of the business, we could start looking at the business's needs now and in the future, and how best to balance features, costs and risks.

For example, you may be looking at moving email, CRM, document-management and backup from internal servers to cloud-based services. It's a great idea. You can enjoy cutting-edge applications at a lower and more predictable cost, while reducing your time spent in administration. However, think about the risks and the requirements. What will your business lose if your network goes down for a day or longer? Could you end up losing man-hours, sales, business opportunities or reputation? Will your entire team be able to work simultaneously in the available bandwidth?

Perhaps, then, it's worth paying extra for a business-grade connection with adequate guaranteed bandwidth, backed up by a comprehensive SLA. A small consultancy might be fine with fibre broadband and 3G/4G connectivity for backup, but a larger office needs network with more bandwidth and resilience baked in.

And while you're there, think about future needs. Will your business grow? Are there more applications you might want to adopt in future? Could you save money with a move to IP-based telephony or unified communications? Instead of plumping for a low-grade network now and keeping fingers crossed that it will scale up, you might want to opt for a service with scalability built-in.

Say you have a company with a head office, a handful of small branch offices and EPOS, database, IP telephony and disaster recovery applications. Fibre broadband might be perfectly adequate for the branch offices, where the risks are smaller and less focused, but make head office central to collecting EPOS data and disaster recovery and the risks and requirements mount up. At this point, it pays to look at deploying EFM or Ethernet-based products where the applications and attendant risks demand.

Conclusion

In other words, it's time to tailor the service to the application. Consider what you need, who's going to need it, and what costs and issues you might incur should those people not have access. Don't just think about the best case scenarios, but also about how the business will cope should something go amiss. Only when customers and providers work together, walking through all the risks and requirements, can everyone be sure that they end up with the right network.

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