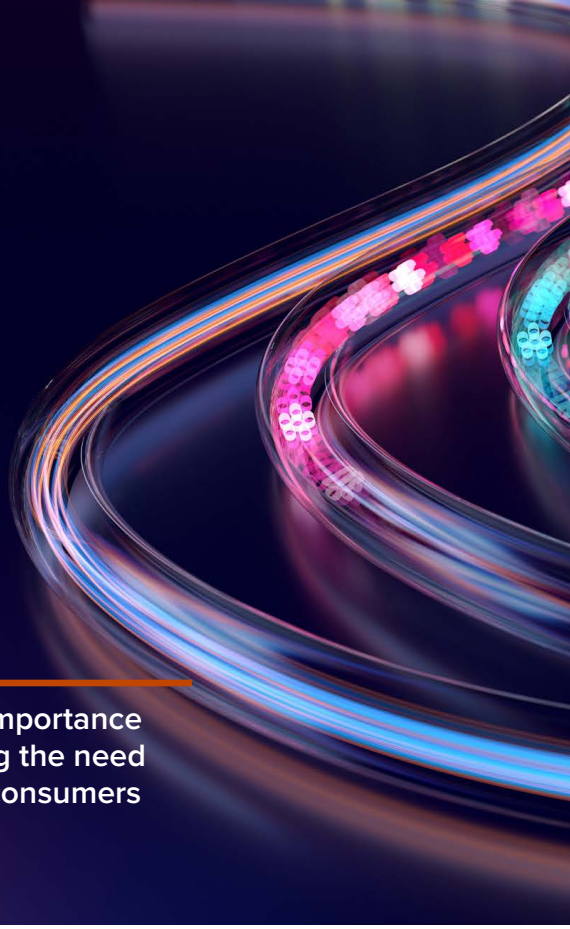


FULL FIBRE CONNECTIVITY: WHAT YOU NEED TO KNOW BEFORE YOU BUY

Dominic Norton from Spitfire Network Services emphasises the importance of understanding the differences in fibre connectivity, highlighting the need to discern variations in quality and technology, while cautioning consumers against making choices based solely on price

People who sell insurance battle with an eternal challenge. At a glance, which is all most people give to the detail when they buy insurance, two competing policies can seem more or less the same. Few buyers have the attention or understanding to immerse themselves in the deep detail that actually differentiates one policy from another. As a result, the decisive factor is very often price; low cost wins the day. It's not until the cover is tested and a claim is made, that the details that make all the difference to the cover's actual suitability become apparent. But by that time, of course, it's too late.

Just like insurance policies, full fibre connectivity setups are not all the same. Although they may all fall under the same general term, they do not all use the same technology or deliver the same level of service. The issue is that, similar to the situation with insurance sales, all fibre can appear to be the same to an unsuspecting customer. This confusion is further compounded by providers who use misleadingly generic names, which can lead to lower-quality options being mistaken for or grouped together with better, but more expensive, choices.

If the buyer isn't aware of the differences between one kind of fibre connectivity and another, then lowest cost becomes the likely decisive factor. It's then, only 'down the road,' when its shortcomings become clear in use, that an unwitting buyer pays closer attention to what they purchased and realises what they should have purchased instead.

So, how does fibre connectivity actually work? What are the differences between the two key but quite different options? And what about making the right choice?

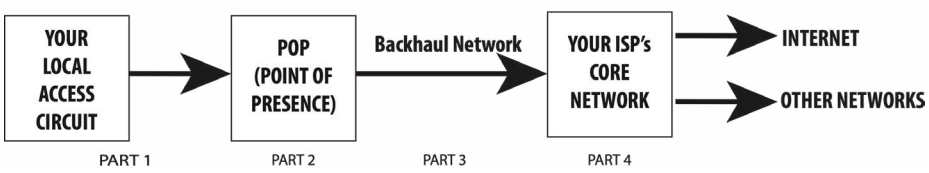
How fibre connectivity works

A fibre connectivity setup consists of four basic parts.

At your premises, you install a local access circuit (part 1) from your fibre connectivity provider. This transfers your data to and from a POP (point of presence – part 2), which may be, for example, located at a BT exchange. From there, your provider uses its backhaul network (part 3) to transfer the data to and from the POP to your Internet Service Provider. Your ISP then uses its core network (part 4) to connect you to the internet and to other networks you may access worldwide.

When you buy an 'internet circuit' fibre connectivity deal from a provider, you're buying all four components of this journey. Now, both the quality of the backhaul (part 3) and the way the ISP core handles data transmission (part 4) are extremely important. For our purposes right now, the critical part

The Full Fibre Internet Connectivity Journey

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to think about is part 1 - that local access circuit. That's the part for which you can very easily end up with ill-suited and inadequate tech, quite possibly helped by providers who'd be happy to let you do so.

The two options for local access circuits

There are two main technologies available for providing premises with a full fibre local access circuit.

The lower-cost choice is GPON (or its higher-bandwidth cousin, XGS-PON). Without delving too deeply into the technical whys and wherefores, GPON is a 'shared user' network technology designed to provide smaller organisations (and consumers) with cost-effective fibre access. Networks using GPON are referred to as 'passive' networks.

For organisations on a tight budget, GPON may prove satisfactory. However, that shared user technology, in which data belonging to multiple entities is sent down the same fibre line, with its non-intended destinations being filtered out only at a late stage, latency is higher and more variable; faults may take longer to locate and so repair; maximum performance SLAs are harder to find; and there's significant potential for network congestion in the future.

In contrast, the other option is Ethernet Access Direct (EAD). EAD-based networks are referred to as 'active' networks. EAD provides each organisation with a dedicated fibre connection (part 1) between its premises and the POP (part 2). The data is sent via that single access circuit only. No other entity's data is anywhere in sight. As there is no shared path, there is no contention, minimal delays, consistent performance, and stable and predictable latency, regardless of other users' activity on the network. Because of this, active networks using EAD can be bought with maximum performance service levels with very low latency.

How should you choose?

There are many GPON-based passive connectivity products being marketed under generic names such as 'Fibre' or 'Leased Line'. These aren't technically incorrect, but they're being used to flatter a solution that will fall short of the expectations of many users.

So, here's how to decide. If you are using business-critical applications that require guaranteed bandwidth, specific performance, and reliability, these may not be reliably delivered by a GPON solution.

You should consider instead an active EAD technology. It may cost more, and take a little longer to install, but for improved security, a maximum performance SLA, ease of maintenance and reliability, you'll never look back.

In contrast, if you want a cost-effective fibre connection, then a passive GPON (or XGS-PON) connection may be adequate. You'll be sharing network infrastructure and will likely have to settle for an average, rather than maximum, performance Service Level Agreement (SLA). (To offer a maximum, the provider would have to reduce the number of users on the shared fibre line, increasing cost and so negating one of the key advantages of GPON!) Lastly, latency will be higher and less predictable. Yet maybe that's actually fine for you?

Now you can decide

The key question to ask of that full-fibre provider quoting something described only loosely as just 'Fibre' or 'Leased Line': "Is that a passive (GPON) or an active (EAD) connection?"

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