TXO

Whitepaper

Maximising the value of street cabinets

The evolving role of street cabinets in the UK's continuing full fibre journey

September 2023

Phone: +44 (0)1291 623 813
Email: hello@txo.com

TXO.com

Serving over 150 countries in 13 languages

Contents

Introduction

In 2021, Project Gigabit was launched with the aim of expediting the UK's post-Covid recovery, igniting the growth of burgeoning industries and promoting economic growth throughout the nation. The UK Government's target is for gigabit broadband to be available to 85% of the UK by 2025 and nationwide by 2030, supported by a £5bn investment war chest made available to ISPs that are aiding the cause.

Project Gigabit has coincided with a huge amount of investment flooding into the UK broadband market, as investors look to capitalise on the opportunity for alternative network providers (Altnets) to capture customers in areas under served by the legacy internet service providers (ISPs).

This has resulted in the continuous growth of Altnets in recent years – there are now approximately 127 rolling out fibre across the UK. Recent data from Intelligens Consulting found that the top 10 alternative fibre operators have built fibre at a rate of 48,500 premises per week over a six-month period. Combined with VM02 and Openreach, this is expected to connect 78M homes by 2026.

This has led to a surge in fibre street cabinets being installed across the UK, in addition to the mass of legacy copper street cabinets across the nation. These street cabinets, which have become a common piece of street furniture, are often considered a necessary evil and an annoyance for many communities.

However, many cabinets possess surplus power, connectivity and physical space. Future-thinking ISPs are looking ahead to new applications and use cases that can support local communities and drive new revenue opportunities.

Not only are these key factors at play, but it will also be interesting to see the gradual impact of BT's proposed exchange shut down (from around 5,500 exchanges to c.1,000), and whether it will create an increased demand for additional cabinets.

To explore what these future use cases may look like, and to gauge if (and how) ISPs are planning to leverage new technologies across their cabinet estate, the TXO research team spoke to service providers, investors and telecom consultants across the UK. This paper presents a summary of these findings and discussions.

Community considerations

ISPs face something of a balancing act with their fibre rollouts. While speed is undoubtedly the priority, installing cabinets requires building physical infrastructure in residential communities. These street cabinets have been installed in communities up and down the country, with the government providing service providers with the licence to install them in almost any location without the communities or local councils able to protest or advise on placement.

Service providers need to be wary not to disrupt or alienate the customers they are racing to serve.

With many homes due to have multiple options for their fibre provider, this is gradually becoming critical. Providers who get it right (or, simply don't get it wrong compared to a competitor) could stand to profit. Owen Williams, a freelance technical consultant who worked with Virgin Media for nearly 30 years, is a firm believer in this, saying: "It's really important not to upset your local community. After all, they're the people who are going to buy your services – or not, if you make them unhappy during installation."

The degree to which providers are conscious of this seems to vary. Cabinets can go completely unnoticed in the local community, provided they're placed in the right positions and not oversized. TXO spoke to a number of ISPs who take great care in choosing where to place cabinets. As one Altnet put it: "Nobody wants a cabinet outside their window." Another said "providing you're not putting them in someone's driveway, people are mostly blind to them, but spacing and blending is certainly something that needs consideration".

Yet historically it seems not all providers get this right. Writing for ISPreview, telecoms and broadband journalist Mark Jackson notes how "over the years we've seen plenty of justified disputes about the poor placement of broadband street cabinets by UK ISPs and network builders." Some ISPs use cabinets with noise sensors for this exact reason, however it's worth noting that there is currently no legal or legislative requirement for them to do so.

Beyond poor placement of cabinets and installations sometimes being labelled as "eyesores", the main reason cabinets can disrupt their local community is through noise from internal fans keeping equipment cool. Some ISPs use cabinets with noise sensors for this exact reason. For example, Truespeed are looking to trial a solution of this technology across their cabinet estate, but it is important to note that there is not currently any legal or legislative requirement for an ISP to do so.

Beyond residents, ISPs also need to consider relationships with governing bodies and local councils. Due to the importance of planning permission for fibre rollout, this seems higher on the priority list for many Altnets. We spoke to several providers who offer connectivity free of charge to community services such as schools or care homes.

Whilst some argue that connecting local institutions is a civic duty of ISPs, others also recognise the tactical value of such projects – adding value to councils and potentially adding weight to their case for planning commission for building street cabinets.

There's potential to build a strong relationship here. Owen Williams explains: "For example, by offering (a local council) a year's worth of free data, this will also benefit the community in the long term."

Offering value-added services

ISPs are starting to consider additional uses for street cabinets, looking for ways they might add value to the community, the council or local authorities, in addition to creating new revenue opportunities.

While some providers are thinking ahead, it's worth noting that others haven't begun looking at these types of use cases yet. For example, a Head of Infrastructure at one Altnet remarked, "I do think it's a good question to consider what a cabinet can deliver for the community."

Street cabinets have ample power and connectivity and are often already strategically spread out and placed across populated areas. Several ISPs we spoke to as part of this project are already considering their options post-rollout.

> Success will not be defined by how quickly they can build new infrastructure, but by how they can more effectively monetise what they have.

Electronic vehicle charging is already being rolled out, repurposing some Openreach cabinets. The consensus among many of the technicians we canvassed was that most street cabinets possess enough power to support EV charging without needing significant upgrading.

However, the main question is, what does this business model look like for an ISP? BT claims that almost 60,000 of its cabinets would be suitable for EV charging points, giving it the scale to make building a business unit dedicated to this service financially feasible. But for smaller ISPs who might only have 20 charging points, the economics would look very different

Other ISPs also questioned the practicality of having EV charging at cabinets, with cars potentially blocking access to the cabinet for maintenance engineers. As one ISP has put it,

> You need to think about what the cabinet is there for. It's there for the delivery of fibre. You need access to it 24/7 if anything goes wrong. You don't want people parking up and blocking the door if you need access to it at four o'clock in the morning.

Making cabinets smart

The most common types of applications under consideration by ISPs are sensor-based solutions. This is fairly logical considering many cabinets already house sensing equipment. Currently, these are purely operational, with ISPs leveraging the data to manage their cabinet estates, pre-empting problems before they occur.

For example, heat sensors are used to monitor the internal temperature of the cabinet and activate fans when needed. Some monitor the sound of these fans, and internal webcams are fairly common as a security measure to track when the cabinet is opened (and by whom). However, ISPs are considering the potential of cabinet sensor data beyond this. External sensors could collect all manner of data on the local environment, which could further support preventative engineering for any problems caused by the wider environment around the cabinet estate such as heat and excessive water.

Further potential use cases ISPs are exploring here include:

Air quality

Particularly in built-up areas or roads with high traffic, some ISPs are considering the value of measuring air quality via street cabinets. Such data could prove valuable to help monitor and improve air quality, protect public health and comply with government regulations under the Local Air Quality Management framework.

Water/humidity

While some cabinets are fitted with internal moisture sensors to monitor potential water damage to equipment. For example, sensors low to the ground could be used for identifying drain blockages and early flood warnings for councils and utility companies in the area.

Temperature

Likewise, moving temperature sensors outside of the cabinet could also be used to monitor local weather – particularly for fast-changing UK weather spikes and seasonal variance – as well as provide data for environmental initiatives. Owen Williams suggests that "you get a much better picture of external temperatures if you're getting it from multiple sources and locations."

Video

With the power and connectivity required to support real-time video feeds, some Altnet professionals are optimistic about the potential of video surveillance applications running via street cabinets to prevent unauthorised access. While this would naturally require authorisation from authorities, video feeds could be used for CCTV, traffic monitoring as well as collating data for planning and investment departments for schools, hospitals and housing in the area.

Sound

While some cabinets are already fitted with audio monitoring, these are typically internal decibel sensors to monitor noise levels from the equipment. Some ISPs are considering how possible partnerships with authorities could be used to monitor noise pollution from traffic or construction in the area for example.

Spotlight

Could cabinet data end the Ulez row?

An FSCTE (Fellow of the Society of CATV Engineers), Owen Williams is a firm believer in cabinet estates' ability to enable councils to make data-led decisions. He pointed to the controversial expansion of London's Ulez (ultra-low emission zone) as one example of this.

By placing air quality sensors across cabinets throughout Ulez zones, Owen argued that **authorities would have the data to not only make more informed decisions to begin with but would be able to measure KPIs and prove to the public that activity and policies were actually making a difference.**

He states that "you'll never please everybody, but If you can prove to people that what you're doing is making a difference, you might make more people understand the reasoning behind it."

Edge infrastructure to support content and wireless services

Some ISPs also believe in the value cabinets could have to the wider network. In providing "last mile" connectivity, street cabinets are already edge resources, but the feeling is that there is untapped potential in the role cabinets could play here.

One example given was establishing peering arrangements with a major service provider like Netflix. This means that instead of routing traffic through various internet providers and ASs (Autonomous Systems), traffic could be handed off directly to specific servers, potentially reducing latency and improving data analysis capabilities. Such arrangements could be used to gather insights into the kind of data being held and used in households, and potentially enhance the user experience by reducing latency for popular services like Netflix or Microsoft Teams.

Other experts are keen to explore the potential of leveraging cabinet infrastructure to support wireless networks. Mobile operators could leverage cabinets to support masts or as a means to reduce how many masts would be needed across a single town. Cabinets could be used to house the computing power required for individual cell towers, centralising resources and potentially reducing the need for physical infrastructure. However, opinions are split here as to how effective this would be due to the potential need to add more power to the cabinets to facilitate this.

Case study

Truespeed

Somerset-based ISP Truespeed is one example of an altnet exploring options for sensing solutions in its cabinets. It's currently scoping an internal monitoring solution for 180 cabinets with a range of sensor types, including humidity, water ingress, temperature, movement and noise monitoring.

Crucially, these sensors will all be internal. Similarly, the data collected is only going to be used by Truespeed themselves for operational monitoring. However, Michael Michael, Head of Network & Service Operations at Truespeed, was optimistic about the potential of using the solution to explore commercial agreements with partners and move sensors outside of the cabinet as part of this.

The solution is still early in design and testing, but it shows how ISPs are already exploring the future of their cabinet estates.

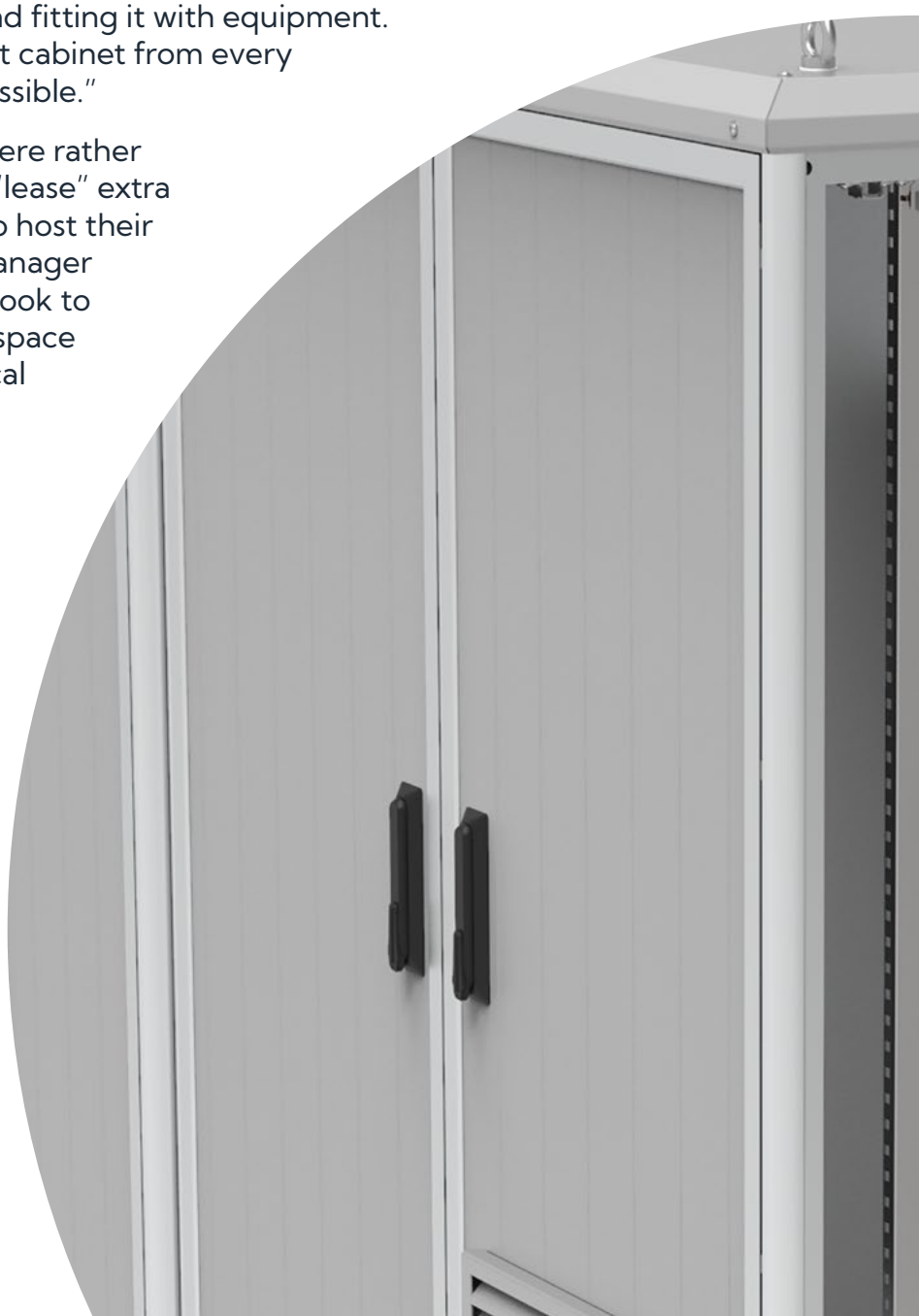
Value-added partnerships

While many of the experts we canvassed were optimistic about the technical feasibility of these additional uses for street cabinets, how to effectively monetise such services could take shape in a multitude of ways. However, **there is consistency in the message that building stronger partnerships, locally and regionally, is the way forward for ISPs.** Once these partnerships are built, trading of data will become more frequent and standardised.

But if Altnets can find new revenue streams from their cabinet estates, they will naturally recoup their initial investment faster and set themselves on the path to profitability. Owen Williams explains this line of thinking, "If I'm going to spend £120K putting a cabinet up, and fitting it with equipment. I want to take money back out of that cabinet from every source possible, at every moment possible."

Some point to alternative models where rather than selling data directly, ISPs could "lease" extra space in their cabinets for partners to host their own equipment. One ISP Delivery Manager pondered this: "I suppose you could look to a model where you could be leasing space in your cabinet for capturing analytical information from the surrounding area. Noise pollution, air pollution, weather, rainfall stats etc. There are huge opportunities."

Michael Michael, Head of Network & Service Operations at Truespeed, explained that "the other thing you have to consider is how would you make that information available to a third party. It's about ensuring that you've got a way of collecting that information and presenting it in a secure way to a partner."



A new partnership opportunity for ISPs

While the focus of several of the ISPs we spoke to remains fixed on their core remit of delivering fibre, many others are already exploring creative uses for their cabinet infrastructure. We are undoubtedly still in the early stages of this, with even the most forward-thinking Altnets just in the preliminary solution scoping stages.

While the industry will no doubt watch Openreach's EV charging pilot with great interest, it seems for ISPs, collecting and potentially commercialising data through cabinet sensors is the preferred approach.

If cabinets are going to effectively evolve and find additional uses, finding the right partners with a real need for this data is crucial. There are two distinct currencies at play here – while monetising data or cabinet space might be the preferred option, many are also considering the strategic value of these additional services to build stronger relationships with local authorities and residents.

With over 150 Altnets operating across the UK, these new services could start to become a differentiator for some ISPs. Time will tell what the best strategy and business model might be for service providers, but the opportunities are ready and waiting.

About TXO

TXO is the world's leading provider of critical telecom network hardware and asset management services. Bringing together our extensive network equipment expertise, we provide a wide range of FTTx street cabinet solutions designed to meet any deployment or expansion strategy.

With close to one million parts, our huge stock of multi-vendor networking equipment sets us apart from the rest. Through a combination of our products and services, we can enhance your productivity and secure the future of your telecom operation. Additionally, we design solutions specifically tailored to your business and using our extensive product knowledge, help with the maintenance and progression of your telecom network.

We also provide asset recovery solutions for our clients across a wide variety of disciplines, such as telecoms, data centres, utilities, oil, gas & renewable energy and civil, government & critical comms. Here our goal is to support your company to achieve its sustainability targets while maintaining your high standards.

We're certified with ISO 9001, ISO 14001, ISO 45001, ISO 27001 and TL 9000 and we are a licensed AATF adhering to WEEE compliant processes. In addition, we hold certification from EcoVadis in recognition of our exceptional levels of corporate social responsibility and we are keen to share this with all of our clients.

Our vision is to be the world's local partner for sustainable communication networks. We view this as our contribution to the circular economy and a greener planet.

To find out more about TXO and how you can join the circular economy, please email us at hello@txo.com.