Altnets
Telecoms Infrastructure Specialists

ISPAUK

UK Telecoms Industry Procurement Research Report 2024

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Opening Statements

Steve Leighton, ISPA Council Chairman

"We are at a pivotal time in Project Gigabit, the UK Government's plan to upgrade the nation's hard-to-reach communities to lightning-fast broadband.

"It's definitely possible for us to reach the target of connecting every home in the UK to gigabit-ready broadband by 2030. The issues internet service providers (ISPs) face over the next period are not so much around accessing the materials for the buildout and installing the infrastructure, they concern connecting end-users and building a strong business case for investors to continue to support their work.

"We know that rolling out high-quality connectivity across the UK is essential for us to remain a competitive and economically prosperous nation – and we are in danger of being left behind by some of our global competitors. Decent broadband is no longer a 'nice to have' for households; it has become an essential utility for most people, meaning the work ISPs are undertaking gets more important by the day.

"This Report, the first of its kind produced by a collaboration between ISPA, the UK's trade association for ISPs, and telecoms procurement specialists Altnets, examines the future of the market for small, independent ISPs, known as alt-nets. We spoke to some of the industry's top CEOs, manufacturers and supply chain specialists in preparing the Procurement Research Report 2023. Thank you to everyone who engaged with us and shared their valuable insights."

Paul Britnell, Co-Founder and Director of Altnets

In 2024, the primary focus for investors and network operators will be achieving a significant return on their investment, with a particular emphasis on acquiring new subscribers or retaining current ones.

Community engagement plays a critical role in ensuring the success and sustainability of any alt-net. Generating income, especially recurring revenue, is essential not only for maintaining a network operators viability, but also for sustaining investor interest and enabling broadband providers to deliver promised services to communities.

Recognising the intricate complexities involved in constructing a high-quality network is crucial. However, navigating this terrain can pose a monumental challenge and at times it may be difficult to see the bigger picture or forecast for the future.

Looking ahead to the future, increasing customer uptake and effectively servicing users are pivotal for the survival of ISPs. The success of both current and future services hinges on establishing a robust supply chain to create network excellence that will service the ISP consumer base and meet their evolving needs.

Scope

This Report, authored by Altnets and supported by ISPA, sets out to review the UK Fibre To The Home (FTTH) sector and the progress of its deployment in order to understand where we are, how we got there and what lessons can be learnt. We have taken the opportunity to view the fibre industry through the lens of the supply chain, exploring how procurement strategies have shaped the successes and been complicit in the setbacks.

Executive Summary

UK fibre operators can ensure future commercial success built on robust network infrastructure by adopting the procurement strategies covered in this report into their business. There are many ways to supplement in-house operational teams, such as the industry expertise available through supply chain consultants who offer fully managed services and advice.

The longevity that persists beyond the completion of building full fibre networks in the UK will not just be local social and economic benefits, but the development of national skillsets for deploying rapid utility and technology upgrades. This could be vital to the UK's future, as other network infrastructure renewal will be required over the coming decades.

The fibre industry should be seen as the leading light for future infrastructure upgrades, with its innovative approach having enabled the rapid deployment of an emerging technology. This will be a legacy that shapes our position as a leading technology nation in the world.

Procurement and supply chain expertise are an often under-resourced and overlooked part of the delivery process and will be at the centre of current and future successes for ISPs. The challenges faced when building full fibre networks across a unified country with devolved national and local government structures, internal and external market pressures and numerous global crises can only be overcome by organisations that value their supply chain.

The Road to Nationwide Gigabit Broadband – Where We Are Now

The birth of Project Gigabit

Since 2010, UK communications network operators have been building fibre optics into their networks. Companies like Gigaclear, KCOM and CityFibre were early adopters into the fibre market. Their ambitions were to build full fibre networks and provide viable alternatives to the traditional UK incumbent providers, Openreach (BT) and Virgin Media.

Gigaclear homed in on the difficulties of rural communities to access even copper-based broadband networks. KCOM built a concentrated full fibre network in the Kingston upon Hull area and CityFibre targeted urban areas where consumers were expressing a wish for greater choice.

Capitalising on these areas of opportunity, the UK network operator space started expanding from around 2015, leading to a wider market space to build and operate fibre networks. We have since seen an increase of new-to-market operators that are looking to compete nationally with incumbent providers. These operators have become collectively known as alternative networks, or "alt-nets", creating a diverse consumer market within the broadband sector across the UK.

This led to the UK government launching Project Gigabit, which built on the previous superfast broadband rollout programme. Project Gigabit focused public investment on rural and hard-to-reach areas, with the support of Building Digital UK (BDUK – formerly Broadband Delivery UK) which is an executive department of the Department for Science, Innovation & Technology (DSIT), a new ministerial department established in 2023.

Project Gigabit comes with £5bn of funding to deliver gigabit-capable networks to all UK domestic and commercial premises by 2030. This funding has been supplemented by vast private investment into the emerging alt-net market.

The current state of play

The UK has roughly 30 million domestic and business premises whose connectivity needs to be converted to a full fibre network. With the help of alternative networks (alt-nets), millions of homes across the UK have already been connected to gigabit-capable broadband networks.

The UK Government's gigabit targets are:

85% gigabit connectivity by 2025

99% gigabit connectivity by 2030*

*Nationwide coverage means "at least 99%" of premises

During January 2024, gigabit coverage across the UK finally hit 80%. This leaves almost a fifth of the nation waiting for a gigabit-ready connection – most of who are located in rural areas where connections are more challenging to build. In England, only about 40% of rural premises are gigabit capable, in Scotland this drops to approximately 29% and in Wales to 38%.

The role of the regional alternative networks

The timeframe for delivery of full fibre networks across the UK has driven the expansion of the UK telephone & broadband connectivity sector, in order to supplement the traditional UK incumbent providers, Openreach (BT) and Virgin Media. Alt-nets have been pivotal in driving the pace of full fibre availability in their regionalised build areas and technology innovation within the sector.

Statistics on alt-nets' connectivity rates vary, dependent on how they report their progress and whether they include fibre to the premises (FTTP) and fibre to the cabinet (FTTC) in their figures. It was reported that alt-nets had capability to connect over 8.2m UK premises at the end of 2022, up from 5.46m in 2021. This equates to about 25% of the nation. Additionally, 2.3m of those premises were classed as harder to reach by Ofcom[1]. Indeed, in January 2024 Think Broadband estimated that almost 61% of all UK premises were connected via FTTP, with just over 30% of connections established by new-to-market alt-nets[2].

Additionally, figures published in spring 2023 showed that alt-nets have signed up around 1.5m premises to their fibre networks, which is roughly 20% of built connections.

An industry report published in spring last year had predicted that alt-nets would reach connection levels of 14.2m[3] premises by the end of 2023, but build rates have definitely slowed since this forecast was made. There are challenges ahead for the industry which we will go on to explore in this Report.

[1] https://www.ispreview.co.uk/index.php/2023/05/alternative-full-fibre-isps-cover-8-2-million-uk-premises-as-build-slows.html

[2] https://labs.thinkbroadband.com/local/

[3] https://www.ispreview.co.uk/index.php/2023/05/alternative-full-fibre-isps-cover-8-2-million-uk-premises-as-build-slows.html

The Challenges and Opportunities of the UK Fibre Rollout

1. Socioeconomic Factors

Overview

Fibre rollout started to gain pace initially in the middle of the last decade, before Project Gigabit was launched in 2019 and this accelerated even further. However, the scale and the frequency of challenging events from the period spring 2015 – autumn 2023 caused huge uncertainty in domestic and global financial markets. It may well have forever changed how global politics, international trade, and consumer & domestic lifestyles are viewed. The purpose of this Report is to outline these pivotal happenings that have shaped all aspects of the narrative of the UK fibre rollout. All sections within this Report have been and should be viewed through the lens of these events:

- Three UK General Elections in four and a half years
- The UK exiting the European Union (EU) after the Brexit referendum (and the lead-up to this being implemented)
- Legal changes to import and export operations between the UK and EU
- Outbreak of Covid19 leading to a global pandemic and the shutdown of international travel
- Global microchip shortage
- Suez Canal blockage standing an estimated $9.6bn of global trade
- Russian invasion of Ukraine and subsequent global sanctions
- Economic recession and rising interest rates in the UK

UK network operators, as well as global manufacturers, suppliers and distributors, have endured through all of the above. This is a testament to the resilience of the UK industry and its supply chain facing these challenges head-on. Socioeconomic factors have prompted all parts of the system to evolve in an agile way to still deliver at speed.

The events listed above all had their own unique challenges for the supply chain, many of which happened congruently. This created a real-time stress on the supply chain resulting in extended lead times and scarcity of certain materials.

Any ISP that had proactively engaged with its supply chain, providing forecasts and sending forward orders to procurement partners, had an advantage over those who took on a much more ‘just in time’ (JIT) approach.

Since early 2023 we’ve seen improvement in the global supply chain, as lead times have come down and material supply is once again robust. Most manufacturers have settled back to the product lead times seen before the outbreak of Covid-19.

Procurement challenges

The Project Gigabit target requires a rapid delivery pace. Due to the speed at which builds are being rolled out, sometimes design and surveying teams cannot provide accurate data to forecast for future material demand. A lack of forecasting affects all levels of the supply chain,

as manufacturers do not fully understand future demand, and therefore cannot plan accurately. During 'normal' times the detrimental effects of JIT procurement tend to be minimised or masked by broad availability. However, as we've seen over the last few years, when the supply chain is stretched and demand outstrips availability and capacity, those companies who don't undertake proactive engagement with their supply chain usually suffer the most.

2. Consolidation and Attracting Investment

Overview

Consolidation, mergers & acquisitions

The UK fibre rollout created an opportunity for new operators and investors to enter an emerging market. Where previously the copper market was dominated by two or three national infrastructure providers, the fibre market is fertile ground for new players. The arious pressure points covered elsewhere in this Report – competition, skills and socioeconomic factors – have led to some companies successfully navigating the pitfalls whilst others have unfortunately succumbed to these pressures.

It is expected that consolidations, acquisitions & mergers will become commonplace in the years to come, as the fibre industry matures and the most successful alt-nets or established national operators make moves to solidify their competitive position within the marketplace. This was seen in 2023, with the Fern Trading investment group consolidating its own group of alt-nets (All Points Fibre, Giganet, Swish Fibre and Jurassic Fibre), whilst Voneus has acquired Cadence Networks, Broadway Partners and SWS Broadband.

Growth via future build paired with acquisition, rather than growth by build alone, looks like the next phase for UK network operators. In this scenario, a real area of focus for any organisation looking to merge or acquire another network is the ramification of integrating not just the physical network infrastructure, but also the software within active routing and switching equipment. This equipment is intrinsic to the operability of network connectivity and many global vendors are not immediately and easily cross-compatible.

Faisal Ahmed, Managing Partner, Axxeltrova:
"As the alt-nets space consolidates, there needs to be an understanding of the costs associated with integrating the separate networks into the acquiring partner. Investors and C-Suite stakeholders within companies leading mergers, acquisitions or consolidations are mainly concerned with the interoperability of active equipment within the various alt-nets networks - specifically what the integration costs and timeframes are. Costs could be smaller if companies use the same operating systems and have similar architectures. Otherwise, associated costs of integration are factored in during the valuation of the company being acquired.

"High integration costs won't necessarily deter investors. However, reducing complexity and timescales in integration processes will impact the valuation made by investors. As the alt-nets sector has evolved, investment companies have become more selective and strategic about which opportunities they will look at."

It's key for network operators to be aware of such issues which could affect them in the future if not now and for owners and executives to consider the potential impact on valuations.

Attracting investment

A significant proportion of the UK's alt-nets investment has so far been funded by private equity investment funds. These investors started to scrutinise metrics closer in 2023, with an increased emphasis on return on investment (ROI). This requires alt-nets to become more uniform in the verbiage around the data shared with a shift away from "homes passed" towards "ready-for-service (RFS)".

This is helping to paint a clearer picture of fibre rollout progress and potential customer opportunities. Without private investment the alt-nets industry stalls, and so now more than ever we need transparency on RFS, including both past and projected RFS targets for 2024, 2025 and beyond.

Historically, many network providers have focused on densely populated areas like cities and large suburban zones, while rural areas were targeted by more specialist Wireless ISPs (WISPs) who transitioned into fibre with the announcement of Project Gigabit.

This has caused a division between underserved rural areas and overbuilding in urban areas. In areas of overbuild, alt-net ISPs are operating at a conversion rate of around 20% of properties, whereas rural operators are seeing numbers closer to 30%. These numbers are below the expectation of ROI metrics and could cause further inter-portfolio consolidation in future.

Steve Leighton, ISPA Chairman & NED Ambassador for Voneus:
"The challenge the sector faces at the moment is one of investment which is linked to the take up challenge."

The risk is that investors are getting nervous without ROI, as they can see that the need for the continuation of building the network is there but the customers are not (yet).

Martin Warne, Key Account Manager, OFS:
"2024 is going to be a further year of 'deep breaths' and see alt-nets refocusing on their network build programme. Companies will focus on customer connections and want to build out in the right manner so investments aren't going to waste."

Procurement challenges

Technical and operational challenges will exist when integrating disparate network topologies and the costs associated can be difficult to control without a range of interoperable options.

3. Ramping Up vs Restraints in Regulations

Overview

Private equity investment has supplemented the £5bn pledged by the UK government for Project Gigabit and market forces have been left alone to decide how to go about achieving the goal of 100% fibre connectivity. Thus far, the rollout has been overwhelmingly funded, planned and built by the private sector, with the government investing in areas the sector will struggle to build or leave last.

There are conflicting and compelling reasons as to why the government preferred this approach over specifying how the rollout should operate, what the structure should be, and how it should be managed. Rather than getting more involved in the planning of builds, the government would be of most help by removing red tape and planning regulations that make the rollout unnecessarily complicated, particularly in rural locations.

Ultimately, the complexity of building in all of the potential geographical environments across the UK meant having a de-regulated rollout to allow new-to-market companies (alt-nets) to take on the challenges. Whether it be the highlands of Scotland, the moorlands of Devon or the flood-threatened Fens in East Anglia, there was never going to be a "one size fits all" approach.

However, there are areas where some industry leaders feel governance on broadband upgrades could, and should, have been more robust and regulated. For example, there could have been environmental directives to support the creation of more sustainable infrastructure that will last at least 25 years.

Regulatory changes are a challenge to smaller businesses, which often lack the immediate resources to quickly adopt new legislation and rules, whereas larger corporations can adapt more quickly. This was seen post-Brexit, with the implementation of new documentation and processes for imports from the EU.

As Environmental, Social & Governance (ESG) and Corporate Social Responsibility (CSR) become more of a focus for businesses across the UK, there will be a push for alt-nets to become greener and more sustainable, starting with their supply chains. This will put pressure on companies in terms of reporting carbon footprints and transparency on origin of materials sourced or procured. If alt-nets' procurement teams are not already gathering this information from suppliers, it would be beneficial to start doing so.

Fibre optic manufacture is not traditionally an environmentally friendly process, but many manufacturers are trying to become carbon-conscious and invest in alternative production methods. The supply chains that produce the materials that go into fibre optic manufacture are also being driven to become more environmentally-minded.

A very timely issue occurring within the regulation of the UK fibre industry is the addition of a levy on fibre optic cables manufactured in China. New trade 'remedy measures' will be imposed, including anti-dumping duties that range from 23% to 46.2% and new countervailing duties ranging from 10.62% to 11.79%.

There is speculation that this is seen as one measure to curtail the use of fibre optic cables which may have not been through EU testing measures. Although certain, primarily Asian, countries may be able to provide fibre at a lower cost base, turnaround times could be seen to affect build time and the potential need for future remedial work. At the same time, the UK government has already shown its preference to work with like-minded allied nations in its national infrastructure upgrade programmes.

Another issue is consumer protection measures. Although these measures are positive and protect the consumer, they may limit rollout. The introduction of one touch switching, the new process for switching broadband and landline providers, brought in last year by Ofcom to make it quick and easy, is potentially expensive for some of the alt-nets to implement.

Additionally, while PIA (Physical Infrastructure Access) has played a big part in driving infrastructure competition and build, there is a challenge around its quality and consistency. This is not surprising given the amount of duct and poles across the UK, but PIA does need to be able to support new full fibre broadband installations.

"PIA that requires repairs or upgrades in order to be used is a barrier to alt-nets rolling out full fibre networks, especially for rural builds. This is something the regulators could have actioned sooner in order to support smaller ISPs." – **Helen Wylde-Archibald, CEO of Wildanet.**

Procurement challenges

Performing the due diligence on your supply chain to understand all the ESG performance data can seem like a daunting task. It could mean pivoting from one manufacturer or supplier to another, and each item could have a knock-on effect to associated equipment.

4. The Manufacturer's Perspective

Overview

The manufacturers we spoke to for this report portrayed confidence in their supply chains. Manufacturers currently have enough raw materials to supply the global telecoms market, and the fibre supply is healthy and sustainable as new markets emerge.

Good news for the industry!

Sustainability

Generally, businesses are starting to pay closer attention to where their products have originated from – as are their consumers. Sustainability and carbon footprints have become more relevant to us all in the UK and cable manufacturers are increasingly focused on their own ESG credentials. Using greener products and logistics solutions is a win for alt-nets and their consumers.

Kevin Moulton, UK Sales Director, Fibrain:
"Sustainability and carbon footprint are huge considerations for the telecoms manufacturing industry. A shipment from India or China can take 8-12 weeks to reach the UK. From Fibrain's factory in Poland, products can be sent in a truck and only take 2-3 days. Furthermore, the manufacturing process is greener than the process in Asia, as manufacturers in Poland have to follow strict EU regulations and businesses are conscious of process control and recycling."

As we look to the future, further industry and governmental regulation (or legislation) on carbon footprints will impact supply chain decisions, based on manufacturers' green credentials. This will include the emissions associated with both the manufacture and the transporting of materials.

Global competition and product selection

The specification and manufacturing quality of fibre products can be variable, with batch testing and inventory control rarely available. This is relevant to the previously mentioned tax levy on Chinese fibre optic 'anti-dumping' measures announced in June 2023.

It is dependent on the network operator as to whether they adopt a specification that would preclude to provision of low-quality manufactured products from cheap labour market areas, or not. Yet, even with a high specification it is incumbent on procurement teams to understand how to identify the correct products. Company KPIs (Key Performance Indicators) for staff can incentivise cost saving within the supply chain.

This may reflect how much a company can save on a CapEx scenario. However, it is likely that lower quality materials will have major impacts on OpEx expenditure, due to required ongoing maintenance and/or replacement of materials.

This is where expert procurement teams show their value, as going for the lowest cost is not necessarily the best option when these products are more liable to be faulty or require replacement, ultimately adding costs in the long run. It is better to select quality products that will fulfil specification standards and are made to last.

Martin Warne, Key Account Manager, OFS:
"Manufacturers that build more products are less reliant on imported goods. At OFS, as we make our own fibre we aren't reliant on import supplies to build our cables. We know that the fibre supply is plentiful, therefore alt-nets can be reassured by positive long-term forecasts for fibre cable procurement."

Raw materials

The manufacturing specialists who contributed to this report were not worried about any immediate raw material shortages in the industry. That is not to say there will be no unforeseen risks to supply chains. One of the most volatile materials which experiences regular market fluctuations is petrochemicals, which would then affect the price of plastics e.g., cables, ducting and chambers.

The industry has already been affected by global microchip shortages, which impact the manufacture of several active fibre products. Microchips being produced in the US, Mexico and possibly, in the future, the UK itself would help with shortages. This gives an indication of how global manufacturers are looking to duplicate their operations in more geographically accessible areas, rather than just manufacturing in the cheaper Asian labour markets.

Helen Wylde, CEO, Wildanet:
"Working with knowledgeable procurement specialists, alt-nets can secure long-term contracts in their supply chain. In order to succeed, companies need to always look forward and interact strongly with their supply chain."

Procurement challenges

Matching manufacturers and suppliers to budgetary goals can be at the detriment of specification requirement. This does not have to be the case, but network operators need to be prepared to choose quality over cost savings should that conflict arise. Providing their internal resource with this clarity can improve material selection processes.

5. Consumer Take Up

Overview

All network operators and ISPs are facing the same challenges in trying to convert customers from copper to fibre. This is as much a technology challenge as it is a consumer challenge. To date, full fibre take-up by the consumer has been disappointing from the ISPs' point of view, with about 31% of UK premises switching their broadband to full fibre so far[4].

Due to the various national targets around connectivity in the early 2010s, many UK premises already have good connectivity which meets their current needs. The 'Superfast' and 'Ultrafast' campaigns led to large areas of the UK connected via FTTC connectivity. These connections range from 30Mbps-80Mbps and for many households enable connectivity to facilitate daily life.

Therefore, people are not motivated to change providers as their needs are currently met. However, as more bandwidth is used by new technologies such as the Internet of Things, the use of streaming services and increase in online gaming, people are going to need greater speeds, and soon.

So, why aren't end users in areas where full fibre networks are now available converting to these connections? This could be down to a lack of awareness about better networks, loyalty to their current provider, general apathy about UK broadband providers, or in some cases the misrepresentation of FTTC as "full fibre".

The FTTC issue is important, as it creates a market barrier for ISPs – consumers in this situation believe they already have fibre, so are simply not going to switch. At the end of last year, Ofcom introduced rules around the use of different language to prevent confusion among consumers[5], which should help alleviate this issue in the future.

It is clear that no single solution exists to break down the barriers to take up. One thing is for certain though, that if network operators do not build quality, reliable networks they will not achieve their targets nor create a reputation for their brand to convince consumers to switch.

Procurement Challenges

Part of the process of converting customers includes installing new equipment to and inside properties. Certainly, where poles do not exist or cannot be installed, this will include excavating outside the property to install the cable underground. Procuring the correct equipment for all these variable access types can create large material lists which impact forecasting.

[4] https://www.ofcom.org.uk/news-centre/2023/full-fibre-broadband-reaches-above-the-halfway-mark-in-wales#:~:text=Take%20up%20of%20full%2Dfibre,wide%20take%20up%20of%2028%25

[5] https://www.ispreview.co.uk/index.php/2023/12/new-ofcom-uk-rules-to-stop-misleading-use-of-fibre-broadband.html

6. Geography

Overview

Hard-to-reach communities are one of the major challenges facing full fibre rollout. They form the most underserved areas of our digital society and this impacts all aspects of life, from education through to employment, local economy and wealth generation.

For alt-nets these regions can be a good opportunity to enter the fibre network market, as they have been left behind by traditional networks. Rural areas are usually low on existing infrastructure and all builds need comprehensive surveying and planning to deliver.

There is also the question of consumer penetration once you build to a town, village or hamlet. Therefore, accurately calculating the Cost Per Premises (CPP) is a vital tool for rural alt-nets. This requires an intimate knowledge and understanding of the supply chain.

Full fibre builds in general have slowed across the UK in 2023, as operators shift their focus to connecting end users rather than continuing to roll out networks at the same pace. Conversely, rural alt-nets have maintained a high pace for network rollout due to the lack of existing superfast/ultrafast broadband in these areas. Rural connectivity is increasingly difficult, though, due to several factors:

- Geography and topology can prohibit certain deployment methods, meaning some areas need a hybrid of ducted, overhead and even radio/5G to complete the build
- Bureaucratic planning laws, wayleaves and multiple landowner/local authority stakeholder relationships to navigate
- CPP will be substantially higher due to lack of dwelling density in target communities
- Access to Openreach/carrier network exchanges is reduced in rural areas, an issue exacerbated by the Openreach Exchange Exit plans, removing the option of physical infrastructure access (PIA)

Wayleaves, local authority and stakeholder engagements are a time-consuming and delicate part of rolling out any utility infrastructure in a rural area. ISPs have a legal responsibility to landowners to consider, as well as both legal and ethical decisions regarding environmental and ecological impacts, whilst deploying a network. With that said, community and stakeholder engagement is paramount to the public perception of the brand and will be a key driver in consumer take up.

Procurement challenges

Rural connectivity can require a diverse portfolio of deployment technologies, therefore procurement teams need to have relationships with a wide and equally diverse group of manufacturers and suppliers to meet the needs of the network builds.

7. Skills Shortages

Overview

There have been a few factors that have contributed to a general skills shortage across all levels of the telecoms sector. Less than a decade ago, the sector in the UK was built around less than 20 network operators. Now there are over 150 companies listed with code of powers to install fibre infrastructure.

This is an issue, as fibre optic installation needs to achieve a high standard of delivery whilst maintaining the high pace of build required to meet Project Gigabit targets. That combination of requirements demands a large, skilled labour market that did not exist domestically in the UK five years ago. It's not just the fibre engineers that are needed; as mentioned in the previous sections telecoms experience and skills are required from top to bottom; from the boardroom, to the network design personnel, to the procurement teams and customer connections teams - all these skills are equally important.

Kevin Moulton, UK Sales Director, Fibrain:
"The biggest hurdle in telecoms manufacturing at the moment is the resourcing and the manpower."

The industry skills shortage is a problem[6] caused by multiple factors, including congruent fibre rollout schemes globally, the rapid expansion of the FTTH market outstripping available domestic resource, and multiple socioeconomic factors. For instance, there was a larger resource pool of fibre splicers and civil labourers pre-Brexit, but as immigration and visa laws have changed, many of these workers are no longer in the UK.

The conversation around skill shortages often centres on the deployment and engineering skill sets. Viewing fibre skills in just this way undermines the importance of telephony and fibre optic experience in boardrooms, supply chain and procurement teams, and design teams within alt-nets.

In the last six years, with the emergence of so many independent alt-nets into the market, these skill sets have become stretched. A solution for many of these skills and services could be sourced via external managed services, as the importance of bringing this industry knowledge into a business will have a huge impact by reducing costs and improving quality in all areas.

Retaining good people and training them will be vital as the industry continues to grow. Although there are a number of independent training providers and industry accreditations, there are no immediate government-led solutions to the skills shortage in the FTTH sector. Alt-nets are devising and implementing their own training schemes, or utilising generic employment schemes, as a response to this shortfall.

[6] https://www.euractiv.com/section/economy-jobs/news/brexit-uk-immigration-system-found-to-contribute-to-labour-shortages/

Wildanet's Technical Training Academy

In September 2023, southwest network operator Wildanet opened its Technical Training Academy in Cornwall, providing industry-leading training to the next generation of telecommunication engineers.

The Wildanet Technical Training Academy will support the continued rollout of the company's Full Fibre network across the region and the creation of new local jobs. It is a home-grown answer to a resource shortage, providing the cutting-edge training facilities and programmes vital for the region's digital future, social inclusion and economic growth, not previously available in Cornwall and Devon.

The Academy includes an industry-leading 'pole field' – the only facility of its kind in the South West – where engineers can be safely trained in scaling and operating on utility (or telegraph) poles up to 9m (30ft) tall.

Investments from alt-nets, such as this, not only increase the chance of success for the industry, but also show the incredible social and economic value ISPs can bring to local communities.

Procurement challenges

Procurement resource coming into the industry, no matter how experienced in procurement otherwise, could struggle to get up to speed with the requirements of the sector whilst understanding product compliance regulations and standards.

This includes Declarations Of Performance (DOP), Construction Products Regulations (CPR) or BS7671 Standards for fibre optic products. Failures in adhering to these standards could have serious ramifications for network operators in the future, such as having to remove infrastructure that isn't up to standard, or in extreme cases a risk to life from unsafe materials. Installations simply must be compliant; the consequences of not doing so can be hugely costly to a business, or even life-threatening.

8. Global Competition

Overview

Growing markets in the telecoms sector around the world could become a pressure point for UK alt-nets in the coming years. Increasing competition for build materials could result in upward pressures on pricing and lead times. However, arguably this also creates an opportunity for alt-nets and manufacturers to enter new markets.

Mike Brooman, Head of Supply Chain, Community Fibre:
"The US's huge push to connect its rural communities will definitely have a global impact once they turn the tap on in a couple of years. The fibre market is currently stable; increasing demand from players like the US is likely to lead to market price increases and even supply shortages for UK alt-nets."

The classic supply and demand scenario is likely to mean material prices increase in the future. As demand from markets such as the US ramps up, products could be redirected away from the UK. Also, exports from US based manufacturers could increasingly be retained internally for the domestic market. For example, if the emerging US fibre market utilises a lot of domestic telecommunications products, the country's key manufacturers may have to reduce exports to Europe whilst they explore ways to increase manufacturing capacity.

In any case, demand for these products outside of the US will experience new pressures around availability and price. We've seen in Europe that FTTH rollouts create exponential growth over the initial 2-5 years of build, so when the US rollout enters a similar phase, we can expect to see the same trends. This will undoubtedly affect the global supply chain.

Name redacted by request, Head of Procurement & Logistics, UK based rural alt-net:
"Alt-nets need to be forecasting their supply chain needs at least two years ahead, so they can make orders now ahead of any potential price rises."

Procurement challenges

It must be acknowledged that the UK and global telecoms supply chain has weathered the storms of recent global events. Clearly the supply chain has proven it can be robust if managed well, with good communication, planning and forecasting into your suppliers.

Conclusion

As this report has shown, the UK fibre rollout has, in the main, successfully endured several major socioeconomic events during what is still less than a decade of deployment on a national scale. These turbulent times have nurtured a reliable and robust supply chain that should continue to weather any future storms.

But there is a learning phase from the past decade that alt-nets need to embrace as they mature from being emerging disrupters in an established telecoms sector to becoming a major part of the solution to reaching UK-wide full fibre networks. As we grow as a digital society, we will need connectivity for the Internet of Things (IoT) but also supporting the elderly in-home, removing digital exclusion for the young and vulnerable, increasing UK productivity and GDP. Getting full fibre networks right is critical for the future of the UK as a global economic power.

Therefore, for the UK and its network providers, the need to convert, service and retain consumers is now the aim for all, not only the alt-nets. Whilst they're no longer solely focused on constructing out a network to reach premises, the focus must remain on building quality and longevity over everything else.

Network operators should still explore their supply chains fully and ensure they are identifying the most appropriate products for their builds. Moreover it is incumbent on them to understand they have agency in the supply chain process and continue to challenge their suppliers to improve the material options and broaden the pool of solutions.

Building successful networks also means understanding the correct usage of fibre types based on applications and their adherence to UK standards and European CPR (Construction Products Regulation) compliance. Access to pre-qualified technologies covering these various regulations is key. It is often assumed that higher quality must also equal higher costs; this does not have to be the case. Selecting compliant products which are efficient and best quality leads to a high specification, long-lasting build.

In terms of securing the all important consumer take-up, the product sets and solutions required now need to factor in a different stakeholder audience. Previously, installing spine and last mile cabling involved maximising network architecture requirements, not considering public and consumer aspirations for aesthetics – mainly because they're underground or on a pole. Customer connection products are now secured to the dwelling and include internal cabling.

In order to satisfy the consumer stakeholder, whether a resident or landlord, aesthetics will be paramount. There are many discrete cabling and termination solutions to minimise the impact of cable entries into properties as well as maximise aesthetic opportunities. For example, discrete internal cabling systems for single- or multi-dwelling units would contribute significantly to unlocking landlord relationships and increase customer penetration success. Alongside this, smooth installation and a quality customer experience will be key, as word of mouth serves as a potent sales aid for alt-net service providers.

Understanding that supply chain and material decisions will have an impact on the consumer success of the network can be forgotten in the fervent rollout process, therefore making sure those decisions have a positive impact isn't always easy. Again, this requires an engagement with the totality of the UK fibre supply chain and not just current and incumbent suppliers. Looking further ahead into the future, one area which will be of significance to investors, operators and potentially a more educated consumer base will be the environmental, social and corporate governance (ESG) of a network provider. Investing now in a sustainable supply chain can save alt-nets money in the long run, as well as meaning that they are already potentially compliant with any updated regulations regarding carbon footprints or ethical procurement.

Sustainability credentials should always be part of an alt-net's business case. Approaching a supply chain consultant or managed service provider can reduce the timescales for identifying potential ESG improvements and benefits, as they will have already reviewed multiple options for each product.

In an industry with increasing numbers of mergers and acquisitions, software integration issues can affect an ISP's prospects. If this is the case for a business, integration should be discussed with the supply chain, who can help by providing technical support and alternative open-vendor options, removing some of the unknowns and stress involved in the consolidation process.

The key for UK alt-nets will be robust forecasting within their supply chain. This provides security by locking in manufacturing space and securing the best available price points. Selecting a knowledgeable manufacturing or supply chain partner has never been more important to safeguarding an alt-net's future material needs.

So, from all the stakeholders interviewed for this report and all of the lessons learned since full fibre networks became an industry in and of itself, what above all are the key learning points?

Whether you're a finance officer, fibre planner, network architect, build partner or head of procurement, early engagement with the totality of the supply chain is crucial for the success of network deployment. The three main reasons for this are: **Knowledge, Pace and Quality**.

1. Knowledge

Having a clear understanding of a company's fibre build is fundamental so that the correct procurement strategy is put in place from the start. However, without early engagement, a network design department could risk designing a network that the supply chain cannot facilitate within the desired deployment timescale. There are so many options and solutions in the market today, without knowledge within a team or via an external managed service, a network operator may make a choice that will adversely affect their timeline, their budget and/or the overall quality of materials available. Lack of engagement often leads to 'just in time' procurement and in turn a lack of control over what equipment is then procured. **Additionally, supply chain consultants can provide specialised and definitive guidance on products and their conformity with installation standards and specifications within the UK and EU, something which is of paramount importance in the sector.**

2. Pace

Enabling the rapid deployment of a fibre network is dependent on material supply. Managing to complete network builds as quickly and efficiently as possible increases the opportunity to successfully convert Ready For Service metrics into active customers. This is the goal of all ISPs and network operators and is only possible with proactive forecasting. This requires good communication and early engagement between design, operations, and supply chains to ensure the uninterrupted and scheduled supply of material. **Control of the supply chain is what drives efficiency and keeps a network operator competitive in its market.**

3. Quality

With many ISPs entering their OpEx phase during a period of global inflation which is driving investor scrutiny, now more than ever operators need to ensure the quality of their network. Associated costs for remedial work, whether due to poor materials, poor installation, or both, will have huge impacts on any potential return on investment. By investing time in understanding the supply chain issues around quality, costs can be mitigated. Internal procurement teams need to have strong links to technical resources to review manufacturers and suppliers. This can be a time-consuming exercise and the adoption of an external consultant or managed service could help network operators achieve the highest possible quality. Supply chain consultants can aid with product and material specification by providing access to manufacturers where they have already undertaken the due diligence. **If investment is committed to building networks to the highest possible quality, costs are saved in the long term, faults and ongoing maintenance are reduced and the consumer experience is improved. This investment will have a sustained impact on customer loyalty and increase the chance of overall business success.**

UK fibre operators can ensure future commercial success built on robust network infrastructure by adopting these three key procurement strategies into their organisations. There are many ways to supplement in-house operational teams with industry expertise available through supply chain consultants who offer fully managed services and advice.

The UK fibre industry should be seen as the leading light for future infrastructure upgrades. Its innovative approach, operations and delivery skillsets will be a legacy that shapes our position as a leading technology country in the world. Procurement and supply chain expertise will be at the centre of these current and future successes.

Contributors

With special thanks to the following industry-leaders for the time taken to share their expert insights into the industry.

Helen Wylde-Archibald,
CEO, Wildanet

Steve Leighton,
ISPA Chairman and
Chairman of Voneus

Faisal Ahmed,
Managing Partner,
Axxeltrova

Andrew Ferguson,
Broadband Data Scientist,
Think Broadband

Kevin Moulton,
UK Sales Director,
Fibrain

Mike Brooman,
Head of Supply Chain,
Community Fibre

Martin Warne,
Key Account Manager,
OFS

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H CREATIVE SERVICES

020 3997 8994

sales@altnets.co.uk

www.altnets.co.uk