

# Analysys Mason is well-placed to advise telecoms operators on FTTP deployments

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Optical fibre is indisputably accepted as the highest-capacity and most future-proof infrastructure medium for fixed digital communication networks. Fibre has been in use for long-haul high-capacity backbone networks since the 1980s (terrestrial and submarine cables), but the transition of access networks from legacy copper pair cabling to brand new fibre-to-the-premises (FTTP) technology has accelerated worldwide during the last decade. The migration has been slower in some parts of Europe and the Americas (compared to that in some Asian countries or the Nordics, for example), but the COVID-19 pandemic has been driving global demand for high-quality and high-capacity broadband connections.

This migration and modernisation of fixed networks represents the largest (and costliest) telecoms infrastructure undertaking since the initial roll-out of the then telephone-focused copper networks, which began in the early twentieth century. It is therefore only natural that the roll-out of FTTP raises numerous issues: logistical, operational, technical, financial, etc.

In addition, FTTP networks offer opportunities in developing economies, which often lack a legacy fixed (typically copper) infrastructure for mass-market use. In these countries, the market for fixed broadband services is often non-existent and there is strong potential for up/cross-selling mobile-only users.

Analysys Mason has performed over 200 projects related to fibre deployment in the last 3 years. These projects have covered many aspects of fibre including research, strategy, transaction support, network and business transformation, and operational aspects. This article highlights several of the common issues that we have encountered in these projects. Other articles in this series explore how to [reduce barriers to FTTP deployments](#) and [avoid network overbuild](#).

## Planning the roll-out

The planning for rolling out millions of FTTP lines in a short timeframe is challenging but is a key component for the success of a fibre initiative. Operators must take several aspects into careful consideration to mitigate risks, including:

- securing the supply chain
- preparing high-level designs and geotype sampling to estimate reasonable roll-out costs and avoid overruns
- defining an appropriate roll-out architecture, which has a direct impact on the network cost of roll-out and the balance between fixed (cost per home passed) versus variable cost (cost per connected home), and will also affect the level of competition and the wholesale market structure (typically passive versus active network operators)
- the mix of internal and external resources
- ensuring that IT systems allow rapid commercialisation
- prioritising roll-out zones

- co-ordinating internal departments before, during and after roll-out
- assessing the speed of roll-out that can be supported given the processes in use.

Analysys Mason has extensive experience of helping operators to determine and implement the most appropriate and relevant choices for their specific roll-out footprint and objectives.

## Understanding the civil works-related technologies

The roll-out of a new fibre access network requires extensive civil works infrastructure, either underground or overhead, to run the fibre between the various flexibility points (mutualisation points, local exchanges, in-building or on-façade splitter boxes...).

Analysys Mason has an excellent overview of the various types of roll-out techniques that have been used worldwide, and their pros and cons.

## Assessing the value chain of the roll-out, operations and maintenance

The number of fibre roll-out initiatives worldwide has led to the creation of a complex value chain, relating to the roll-out, operation, and maintenance of these new networks. This value chain is notably more complex than it used to be for copper roll-out, mainly because of the use of outsourcing, the use of co-deployment to share the massive deployment cost, and the emergence of wholesale networks.

As a result, new players have emerged.

This value chain will evolve as each country moves from a roll-out phase to a more operations- and maintenance-focused phase. Analysys Mason is used to working with all major stakeholders in this complex value chain.

## Migrating from legacy copper and cable to all-fibre networks

With the roll-out of new FTTP access networks inevitably comes the question of how to migrate existing copper pair cabling or HFC cable-TV networks to FTTP technology.

In both cases, modernising the networks requires operators to lay fibre closer to the final customer, which eventually raises the question of deciding between a progressive modernising of the current infrastructure (be it copper or cable) or a complete migration to a full-fibre access network. Typical issues at stake include: fixed/variable roll-out costs, maintenance costs, product portfolio, migration approach, customer communication, whether appropriate organisations are in place or can be put in place to support the deployment, coordination and steering, marketing activity required, etc.

Analysys Mason has considerable experience conducting techno-economic studies regarding selecting the highest value solutions. Analysys Mason are also experts in supporting our clients in designing, planning, and delivering operational migration approaches.

## Externalising the fibre network into a separate dedicated vehicle (that is, fibre carve-outs)

As mentioned previously, more and more operators have created (or carved out) special purpose vehicles (SPVs) to own and manage their fibre networks. These SPVs are generally (at least temporarily) co-owned by the operators that are rolling out the FTTP network as well as one or several external investors, often infrastructure investment funds. The initial telecoms operator can own part (or not) of the fibre network, and will typically operate and maintain these fibre assets generally as wholesale-only operators, offering various fibre-based infrastructure products to retail service providers, who in turn will address B2B or B2C markets.

Analysys Mason has led many strategy and transaction support projects related to fibre investment and fibre carve-outs more specifically all around the world and therefore has a thorough understanding of the issues at stake.

## Assessing the sustainability of fibre-based networks

Climate change, carbon emissions and energy efficiency have become major concerns for many players in the telecoms industry, and the impact of digital infrastructure in an increasingly digitised society is being more and more scrutinised.

As an integral part of this digital infrastructure, operators must assess the environmental impact of fibre networks, especially FTTP networks, from sourcing of the components and roll-out, to operations, maintenance, and overall longevity of the infrastructure.

Analysys Mason has a deep knowledge of the environmental aspects of FTTP networks, especially when compared to competing access technologies.

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