Pre-connectorised fibre and digitalised ODNs are important components of successful FTTP roll-outs

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Interest and investment in FTTP are at high levels around the world. Operators are aiming to roll out FTTP rapidly and cost-effectively in many countries and are also looking to drive subscriber conversion rates on established networks. Moreover, operators with existing FTTP subscriber bases are trying to deliver an optimal customer experience. Fibre operators must ensure that their optical distribution networks (ODNs) can meet these challenges in order to meet their overall business objectives. This article looks at how FTTP operators can use digitalised ODNs and pre-connectorised fibre to deliver successful FTTP roll-outs.

Digitalised ODNs will become increasingly prevalent during the next few years

Digitalising the ODN involves automating the construction, installation and maintenance processes that have often relied on error-prone manual recording and labelling of ODN resources. Digital tools such as AI-driven image recognition and mobile apps can be used to significantly increase the efficiency of processes that were previously long-winded and labour-intensive.

ODN digitalisation can deliver benefits throughout the fibre lifecycle. Many operators rely on sub-contractors to carry out their FTTP roll-outs but operators require tools to supervise their work and ensure that it meets required quality standards. In addition, using digital tools can help operators to understand which fibres are connected to which ports, thereby reducing the need for second visits when FTTP installations have not been carried out correctly. In our survey of large FTTP operators worldwide, 60% highlighted avoiding repeat visits for FTTP installation as an important benefit of ODN digitalisation. Another important reason for digitalisation is that it can enable operators to locate faults in the ODN more easily, which can reduce costs and service downtime while also improving the customer experience.

At present, digitalisation of the ODN is at a nascent stage but is becoming more prevalent. One vendor notes that 60% of its ODN port shipments incorporated digitalisation via QR codes in 2021, up from 27% in 2019. We expect strong growth in the number of operators using digitalised ODNs over the next few years and there will be several drivers for this.

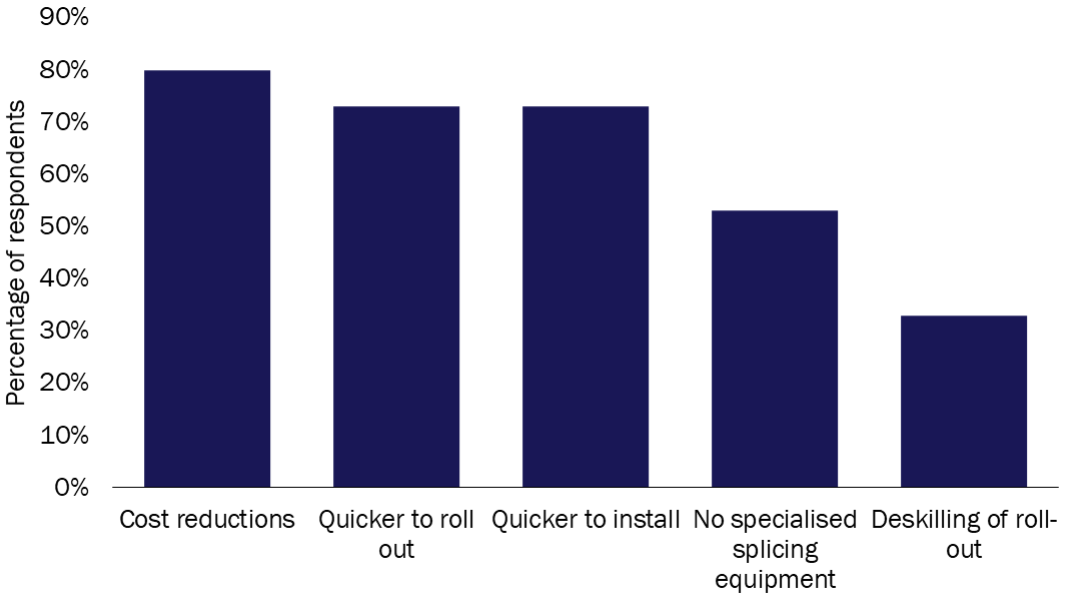
- **Growing FTTP overbuild** will push fibre operators to deliver a high-quality experience by ensuring that the subscriber installation process goes smoothly and that fault downtime is minimised.
- **The increasing number of FTTP homes passed and subscribers** will make manual ODN resource management increasingly untenable and operators will be under more pressure to get the fibre installation process right.
- **The COVID-19 pandemic** has served to reinforce the value of a reliable broadband connection, for example, because of the significant growth in home working. ODN digitalisation can reduce fault downtime and can assist in providing the reliable connectivity that end users value.

More operators will understand the value of pre-connectorised fibre over the next few years

Pre-connectorised fibre refers to when connectors are added to the fibre cable in the factory. Connectors can, in effect, be plugged into each other and here we define pre-connectorised fibre as that which uses hardened connectors that can be exposed to the elements. Alternatively, the ends of fibre cables can be joined together using splicing, which can provide a reliable means of connection but also faces some challenges.

Pre-connectorised fibre can deliver benefits throughout the fibre lifecycle. It can reduce costs because, although the initial material costs may be higher, pre-connectorised fibre removes the need for skilled splicers and splicing equipment. Deploying pre-connectorised fibre is also rapid, which can deliver benefits during both the homes-passed and subscriber-installation phases. Analysys Mason conducted a survey of major FTTP operators worldwide, and operators are perceiving multiple benefits from using pre-connectorised fibre (Figure 1).

Figure 1: Benefits of pre-connectorised fibre solutions

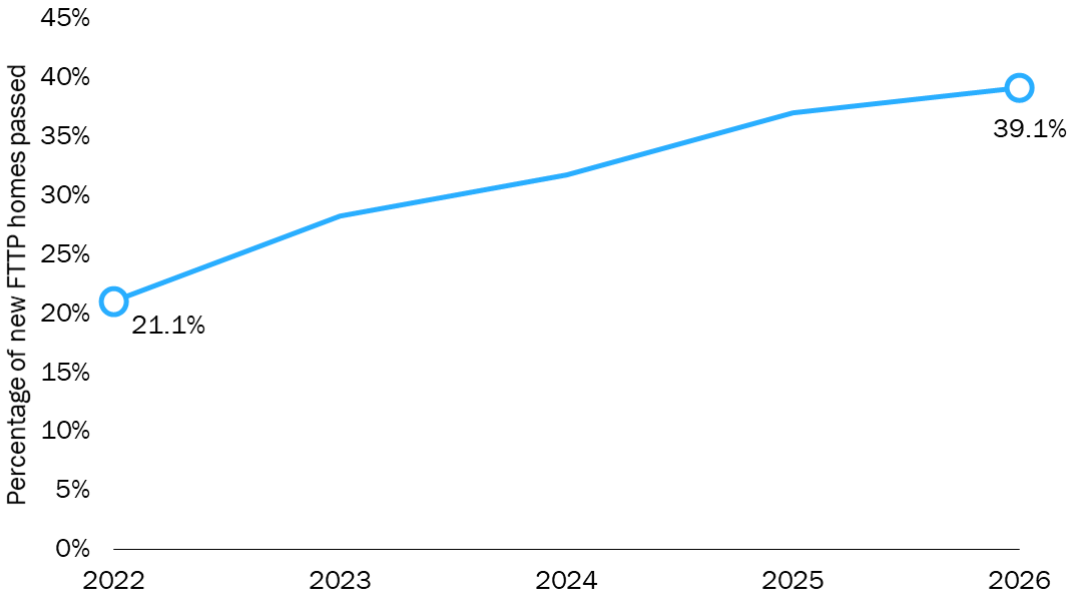


Source: Analysys Mason

Question: "What do you believe are the most important benefits of pre-connectorised fibre solutions for FTTH networks?"; *n* = 15.

We estimate that around 21% of new FTTP premises passed in 2022 will use pre-connectorised fibre (Figure 2). Most of the homes passed with pre-connectorised fibre will be in North and South America, and some European countries. The proportion of new FTTP homes passed that will use pre-connectorised fibre in 2026 will have increased to 39%, which will reflect continued usage in the Americas but also growing usage in Sub-Saharan Africa and parts of the emerging Asia–Pacific region.

Figure 2: Use of pre-connectorised fibres in the ODN, worldwide, 2022–2026



Source: Analysys Mason

We expect the use of pre-connectorised fibre will increase for several reasons. In the next few years, more mobile network operators (MNOs), cablecos and players that are new to the telecoms segment will begin to roll out FTTP. Such players lack traditional expertise in splicing and so pre-connectorised fibre is a good fit for them. Pre-connectorised fibre can also help to increase the speed of deployments to meet government targets for FTTP coverage. As interest in FTTP investment grows, so do the risks of fibre overbuild. Pre-connectorised fibre can allow an operator that is facing competition from another potential deployment in the same area to roll out fibre more quickly, which will give them an important first-mover advantage. Growth in FTTP subscriber numbers will also drive operators to use pre-connectorised fibre. Without the need for fibre splicing fibre installation times can be reduced, which means more installations can be performed per day. This can then reduce waiting times to have fibre installed, which could also improve subscriber take-up rates.

For more information on trends in the use of pre-connectorised fibre and ODN digitalisation, see our report: *Optical distribution networks of the future: pre-connectorised and digitalised*.