

Huawei launches OptiXstar F30 to help optimize the home broadband experience

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Demands on the home broadband network are set to increase exponentially and service providers will need to invest in new advanced technologies to keep up with these demands. The mix of more devices, bandwidth-hungry applications, and greater reliance on the cloud will drive the need for fiber-based gigabit services. But once an operator has offered a gigabit service, it is essential that they can get this level of service, not just to the home but right down to the end device. In discussions with service providers, Omdia knows that if they fail to achieve this, declining customer satisfaction will quickly follow. A high-quality home network, therefore, is an essential part of a service provider's future broadband strategy.

Although developments in traditional home-networking technologies such as Wi-Fi have improved the customer experience significantly in recent years, they still have their limitations, which can impact bandwidth, latency, and coverage. Centralized fiber-to-the-room (FTTR) architectures have been proven to fully optimize this experience. In 2023, Huawei launched an upgrade to its own FTTR portfolio, the OptiXstar F30, which improves the experience further by providing even greater speed, coverage, and throughput, as well as reducing device-roaming times and latency.

If positioned properly, FTTR solutions can provide a number of advantages to the service provider in terms of increasing customer satisfaction, brand perception, customer stickiness, churn reduction, and ARPU growth.

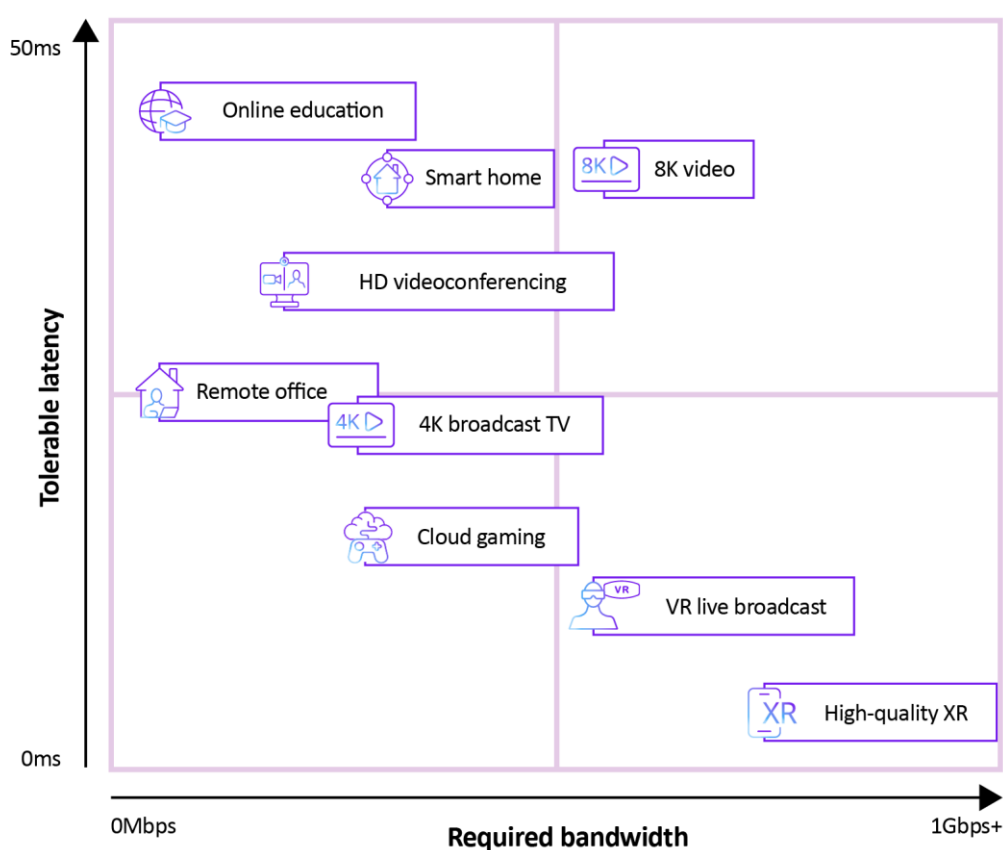
The demand drivers for FTTR

The increasing demand on the home network is driven by a combination of continued growth in the number and variety of connected devices, more bandwidth-hungry applications, and greater reliance on the cloud.

Between now and 2030, shipments of connected devices will have increased by over 40% and installed consumer IoT products by 210%. The types and capabilities of connected devices in the home will also have changed, with most shipments of display devices having full-HD or ultra-HD capability, and shipments of VR-capable devices outstripping those of games consoles.

Digital consumer applications are also developing rapidly, becoming more reliant on the cloud, and therefore increasingly dependent on high-bandwidth, highly consistent, and low-latency networks to function at the required quality. Some applications such as cloud gaming will not require ultra-high bandwidth but will rely on low latency – XR applications on the other hand will need both high bandwidths and low latency (see **Figure 1**).

Figure 1: Application network requirements



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Source: Omdia

This combination of increasing connected devices, bandwidth-hungry applications, and greater reliance on the cloud will drive the demand for gigabit, fiber-based, broadband services. End-to-end fiber networks have been proven to deliver the optimum broadband experience across all metrics, including speed, reliability, latency, and consistency. By 2027, Omdia predicts that there will be over 1 billion fiber-connected households, 420 million of which will be receiving gigabit speeds.

Getting high-speed, low-latency services to the home, however, is irrelevant if that level of broadband quality cannot then be delivered to the devices that need it. Although developments in traditional

home-networking technologies such as Ethernet cabling and Wi-Fi have improved the customer experience significantly in recent years, they still have their limitations, which can impact the customer experience, especially for high-end applications. Replacing the in-home backhaul with a centralized FTTR architecture has been proven in both lab test results and service provider deployments to fully optimize the in-home experience by enhancing speed, latency, coverage, and device-roaming metrics across the whole of the home.

FTTR market update

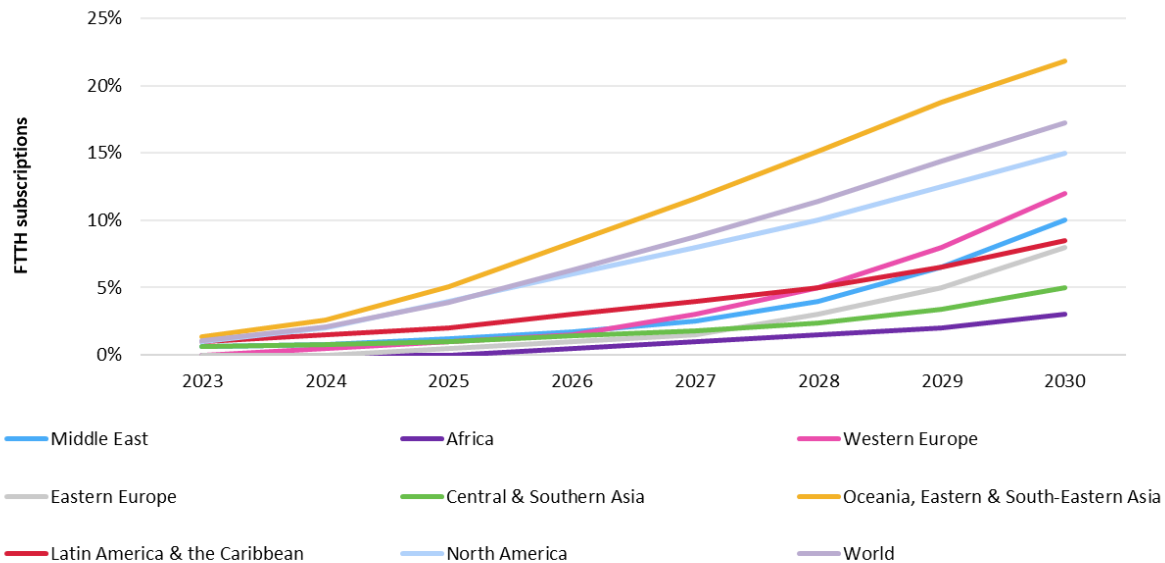
With the release of the OptiXStar F30 series, the FTTR solution has become more mature, bringing better user experience in terms of appearance, Wi-Fi rate, and self-service management. Due to the accelerating growth in FTTH subscriptions, and service providers' desire to market premium-quality broadband services, Omdia forecasts robust growth in the FTTR share of residential FTTH subscriptions across all regions. In China it is already deployed in more than 2 million homes and there are now commercial deployments in countries such as Hong Kong, Thailand, Philippines, Israel, Saudi Arabia, Portugal, and Brazil.

By 2030, Omdia predicts there will be more than 190 million residential FTTR customers, equivalent to 17% of fiber-to-the-home (FTTH) subscriptions (see **Figure 2**). The figure will be highest in the region of Oceania, Eastern & South-Eastern Asia (22%), which is largely driven by China, followed by 15% in North America and 12% in Western Europe.

In the future, with the further popularization of gigabit services, FTTR will enter an accelerated development period. FTTR can not only meet the network requirements of large households, but also meet the network requirements of heavy users such as home workers, gamers, and households streaming multiple HD videos. FTTR will provide a high-quality, ultra-gigabit Wi-Fi experience for a wider range of FTTH users.

The Middle East is a promising area for growth, and we forecast that 10% of residential FTTH subscriptions will have FTTR by 2030. This reflects strong initial momentum behind the technology, with some operators having already launched services. Large villa-style properties in the region are also a good match for FTTR solutions.

Figure 2: FTTR customers as a percentage of consumer broadband subscriptions



Source: Omdia

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Huawei launches OptiXstar F30

In 2023, Huawei launched an upgrade to its OptiXstar F20 FTTR solution, the OptiXstar F30. This upgrade included a new look and feel to the main and sub-FTTR units to make them more aesthetically pleasing and simpler to install, a doubling of the system speed to 2Gbps, and a further increase in performance with regard to roaming, coverage, latency, and throughput.

The ease of installation and the look and feel of home CPE devices has become an important differentiation factor in recent years. With the OptiXstar F30, Huawei has designed a slim product that can either be easily wall mounted or placed on a desk or shelf. The product can also come in a range of colors to match the customers' preferences.

Coverage of the system has been increased in two ways. Firstly, Huawei has increased the possible number of Wi-Fi access points per FTTR network to 17, making the solution more attractive to residential customers with large premises and small businesses. Additionally, Huawei has integrated four-beam polarized and beamforming Wi-Fi antennas that increase the coverage of the Wi-Fi part of the network, both horizontally and vertically, and enable the Wi-Fi signal to "follow" devices as they move around the home.

Other improvements include the following:

- Roaming switchover has been reduced from 50ms with the F20 to less than 20ms with the F30 to ensure that there is no impact on cloud-based applications as devices switch over from one Wi-Fi access point to another
- Latency has been reduced to less than 20ms
- The number of possible connections has been increased to 128, which Huawei claims is four times the industry average, in readiness for the influx of consumer IoT devices.

FTTR deployment challenges and solutions

The installation of in-building fiber cabling in mass-market residential homes is a new venture for many service providers and therefore poses a new set of business challenges. There are some examples of in-building cabling (in MDUs for example) but, on a global scale, this accounts only for a small percentage of households, especially for cases of cabling to every room. However, where a residential building is due to be fitted with indoor cabling, or in cases where existing indoor cabling needs updating, indoor fiber-optical cabling is the obvious choice.

The bigger issue is for the millions of households that have no or very little indoor cabling. Unlike home Wi-Fi, installing optical cable requires engineer installation and is therefore a more costly option for service providers.

Vendors are working hard to minimize these costs, and Huawei has developed a number of software tools and best-practice training courses to help its customers. Huawei has also developed a solution that uses transparent adhesive fiber, so no trunking is required, and zero splicing connections – both of which help reduce installation costs by making the process relatively quick and easy. Based on results from Huawei's customer trials, the average time required to install the FTTR network using its solutions was typically 20 minutes per room.

The value of FTTR to service providers

As service providers migrate to gigabit broadband services, it is essential that they have the capability to distribute these to all corners of the home. Not only is this important for ensuring the quality of experience of future applications (as discussed above), but also purely from a customer satisfaction point of view – if users are paying for gigabit, then they expect to have that level of service right down to the device, wherever they are in the home. From service provider discussions Omdia knows that not being able to meet this basic expectation leads to a swift decline in customer satisfaction and increasing customer service calls. As FTTR is proven to optimize the gigabit experience in the home, then it can bring several advantages to the service provider, as follows:

- Improving the gigabit perception by ensuring consumers truly receive that level of quality throughout the home. This can lead to higher customer satisfaction and reduce customer churn
- Improving marketing and competitiveness of the service provider brand by offering the ultimate broadband experience
- If positioned as part of the top-tier broadband offering, increasing ARPU through a greater percentage of customers taking that top tier
- If positioned as a premium broadband option, further increasing the ARPU through additional monthly fees.

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