Challenges of Deploying 5G FWA to the Home

Thibaud Lepage, Director of Product Management for 5G Fixed Wireless Access, Technicolor Connected Home

As the race to deploy fixed wireless access (FWA) technologies heats up, two distinct categories of network service providers are working to harvest new revenue streams from connected home subscribers: 1) terrestrial broadband access operators that offer fiber and cable services and 2) wireless network providers that serve mobile subscribers.

While each of these players brings interesting competitive strengths in the competition for the hearts and minds of residential consumers, they both have their own sets of knowledge gaps that will have to be filled if they are to achieve long-term success.

To better understand how these two categories can best leverage customer premises equipment to achieve their FWA growth objectives, we caught up with Thibaud Lepage, Director of Product Management for 5G FWA at Technicolor Connected Home.

Here is what he had to say:

There are currently two very different groups of network service providers (NSPs) exploring opportunities to exploit the growing demand for 5G FWA to expand their business.

The first group is made up of fixed-line NSPs—including cable and telco operators—that have a long history of providing broadband access to the connected home via xDSL, cable and fiber optic technologies. In addition to providing broadband access, these service providers have also, in recent years, developed robust Wi-Fi services to offer wireless connectivity within the home. When it comes to FWA, however, they lack experience with cellular technologies—such as those based on the 4G and 5G standards.

The second group of providers is comprised of mobile service operators that have vast experience with cellular technologies to connect mobile devices, but little to no experience in offering broadband access to the connected home, or interconnecting the growing number of devices within residences—which is a category of service that consumers now demand. As a result, mobile service provider offerings are not an optimal solution for the home. They do not offer a way to manage broadband delivery to all users at the local-area networking level the way robust Wi-Fi connectivity does. For these providers, it's all about the gateway—the technology that offers wireless (5G for instance) access to the home.

Technicolor Connected Home has long been a global leader across the full spectrum of broadband access (both wireless and terrestrial) and in-home local-area wireless technologies. We are in a unique position to bridge the knowledge gaps that exist among both groups to provide solutions that deliver first-class connectivity. Our range of products focuses on key features today's consumers expect while simultaneously avoiding situations that will congest networks in connected homes.

Quality Home Gateways Are Crucial For 5G FWA Deployment

Technicolor Connected Home has developed an array of carrier-grade gateways that support a variety of networking configurations.

Our solutions are based on open systems HOMEWARE and RDK-B technologies that are reliable, manage middleware, and enable operators to tap into our thriving ecosystem of partners to bring innovative services to market. In this sense, it makes adding functionality for connected home subscribers similar to adding apps on a smartphone.

HOMEWARE is built on open standards that our engineers have extended to meet carrier-grade requirements. RDK is a fully customizable open-source software solution that standardizes core broadband functions.

Technicolor Connected Home gateways are forward engineered, which means NSPs can generate new services to improve average revenue per user (ARPU). We have designed our offerings to allow NSPs to pre-integrate a wide range of applications they want to deliver to their subscribers. This is facilitated by our robust Technicolor Connected Home HERO partner program [LINK TO HERO PARTNER LIST] so that NSPs can deliver complete lifecycle management of applications as well as maintenance of the gateway itself to subscribers.

And because Technicolor Connected Home solutions have been developed with security as a top priority, our solutions are interoperable with a wide variety of components in a risk-adjusted manner.

Security will be a key differentiator for most NSPs around the world. As we collectively move toward the use of 5G WFA in the home, personal data, privacy and access to home network devices will require additional protection against piracy and network attacks.

That is why 5G CPEs must implement the highest level of security to protect the entire ecosystem—from broadband and wireless connectivity to entertainment and IOT services. Securing device middleware and all the applications running on it will become critical. Technicolor Connected Home employs a rigorous multi-step process to ensure the security of our products and technologies.

First, we conduct a three-step security check during the product development phase of our operations to reduce the risk of vulnerabilities. Every code contribution is verified overnight for security breaches and developers are automatically notified prior to customer acceptance.

Once the development is nearing completion, the complete code is validated by dedicated security teams in both open box (via code review) and closed box (via penetration testing) environments.

Our dedicated teams track software components and technology to continuously check for security vulnerabilities, even after the product is delivered.

Finally, Technicolor products are validated at regular intervals by independent soft-party security labs. This rigorous testing ensures the products and technology are secure.

An Integrated Approach to 5G FWA

While 5G FWA delivers broadband internet access to the home, it is not capable of distributing content to all users and devices within the household. The delivery of internet access alone can quickly become a commodity—or worse irrelevant—if fast broadband cannot be distributed effectively to every device and user within the home.

This is where hybrid 5G home gateways come into play. Excellent Wi-Fi performance is needed to ensure smooth delivery of fast internet connectivity to multiple home users and devices. Not every CPE device is up to the task.

Technicolor Connected Home gateways optimize antenna placement and carefully select technologies for optimum performance. As a result, we enable seamless Wi-Fi roaming—even when consumers move around in their homes.

Through our HERO partner program with companies such as Airties and Plume, we can integrate cutting-edge technologies as well as standard technologies like EasyMesh to ensure compatibility with all retail extenders.

Finally, our test facilities continuously verify the performance of our products in real-life operation, in real-life environments to ensure that our products not only meet consumer expectations but exceed them.

The end result is a range of extremely fast and high-performing Wi-Fi offerings that ensure whole-home coverage. It's an exciting step toward tomorrow's truly connected home.