

Case Study: **Giganet**

Telent helps Giganet unlock its full potential in the South of England



Fibre-to-the-Premises (FTTP) networks continue to be rolled out within metropolitan and rural areas across the UK with high-speed home broadband and business internet services no longer a 'good to have', but a 'must-have'. As our lives increasingly depend on access to hyperfast digital services, alternative network providers are stepping up, addressing rising demand, and accelerating growth by building new full fibre networks across the UK.

In 2019, Giganet set out to propel the UK forward in the delivery of full fibre infrastructure and bridge the digital divide. After decades of under investment, shoddy customer service, and lack of competition, Giganet, supported by investors Fern Trading Ltd and advised by Octopus investments, set its sights on building a new core network to support the roll out of full fibre to previously neglected communities in the South of England. Giganet's expansion plans now also include a national network to serve the Midlands, North of England, and Scotland.

Over the next three years, Giganet is firmly on track to connect over 500,000 UK homes and businesses to their award-winning brand of full fibre through the deployment of their own full fibre network infrastructure, and across CityFibre and Openreach. Working ethically and with a focus on the environment, together, Giganet is offering the market the opportunity to not only upgrade to a better home broadband connection, but to receive a better level of service all round. With a reach of over 8 million premises already, it was paramount that Giganet delivered its new core network in 2022 to align with the company's overall

growth strategy. To achieve this, Giganet required a partner with the expertise to help build out the core network and unlock its full potential.

Empowering Giganet's growth

All the way from its "concrete to cloud" solutions for a range of network infrastructures, Telent has proven experience in building high-quality, future-proofed network infrastructures for its internet service provider customers. Giganet required such a provider to partner with on the design, consultancy, and technology guidance to ensure evolution and expansion to new sites.

With end customers lined up in their droves, Telent was acutely aware that Giganet had a raft of registrations of interest poised to sign onto its service. If the core network was not delivered on time, it would cost Giganet heavily - both in terms of subscriber revenue and brand reputation. Giganet published both Fundamental Architectural Principals and a Network Requirement specification, with Telent tasked with designing, building and project managing the delivery of the new core network. Telent needed to

deliver a high-level design, low-level design, and build and test the network design, including traffic simulation in its Camberley lab facility.

Giganet chose Juniper Networks for the core network due to its heritage within the service provider market and the compelling scale versus price point provided. The Juniper solution that was deployed leveraged market leading, proven carrier grade infrastructure, including MX, QFX, ACX and PTX technologies.

Telent's service provider lab has more than 17,000 square feet of floor space and seventeen 47U network cabinets with DC and AC power available in all racks, housing a multi-vendor hardware portfolio stretching across numerous technologies. A further 2,000 square feet in the facility is dedicated to the technology and innovation centre containing development and testing facilities for carrier class and enterprise IP networking. It is capable of traffic generation up to and including 100G interfaces and can provide a full range of protocol emulation. This multi-vendor lab environment was able to emulate and replicate a real-world network for Giganet to provide proof of concept, type approval and traffic generation simulation capability.

Replicating a real-world network

Telent leveraged its investment in testing equipment to replicate Giganet's network like-for-like to increase efficiencies and reduce the chance of any potential errors. In the lab the network design was put through its paces from performance, availability, and predictability perspectives. It was crucial that when the network was live, Giganet, a consumer-obsessed company, knew precisely how it was going to react at different subscriber volume levels, and what would happen in potential failure scenarios. It was essential that Telent tested the outcome if an element was to become overloaded and determine the limit and scale of the network. Type Approval testing verified it worked as promised and provided Giganet with absolute confidence that when its new network went live it would cope with the volume of customers and perform as designed.

A replica of Giganet's Adtran XGS-PON network was staged within the Telent lab to simulate the end-to-end subscriber connectivity from the residential gateway through to the core network. This included Juniper Networks for the access, aggregation and MPLS core network, and A10

Networks for the Carrier Grade Network Address Translation (CGNAT). The core network equipment was installed and commissioned by Telent in Giganet's data centre locations, and its Point of Presence in BT exchanges. From these exchanges, Giganet is now connecting its XGS-PON Fibre Access Cabinets, as well as interfacing with CityFibre and Openreach's networks which enables the delivery of full fibre broadband services to end customers.

Giganet's network design was delivered on-time with the ISP now perfectly positioned to deliver high performance connectivity and provide excellent customer service.

An array of teams at Telent helped worked on the project across a host of areas on the design, installation, and project management elements. This included Principal Engineers, Senior Engineers, Test Managers, Test Engineers, Project Managers, Programme Managers and the BAU team. The Telent team continues to have regular weekly calls with the Giganet team, working collaboratively and providing the aftercare to ensure Giganet can deliver connectivity effectively to its subscribers.

"Telent's capability to augment our in-house engineering team with their skilled network engineers, Camberley lab facility and project managers enabled us to accelerate the network design, testing and commissioning process. Telent helped complement our growing in-house engineering team in the early development stages of our new core network design and build. This laid the foundations from which our in-house engineers were able to confidently expand the capabilities and scale of the network as we deliver against the business strategy. We enjoy our continued collaboration with Telent as their field engineers and PMs assist us as we deploy additional Points of Presence in data centres and exchanges nationally across the UK."

Matthew Skipsey,
Chief Technology Officer at Giganet