Gigaclear: scaling up rural FTTP delivery

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1. Introduction

Gigaclear has become the UK's leading alternative network operator specialising in fibre-to-the-premises (FTTP) delivery in rural areas. It is expanding its footprint rapidly and is acquiring a relatively sizable customer base. Founded on a solid and well-oiled approach to demand registration and order taking, with a clear set of aims, focused business model and strong financial backing, the company is now having to adapt its processes to make the transition from local broadband player to national broadband provider in the rather large niche market that is rural Britain.

The company designs, builds and operates FTTP broadband networks delivering symmetric speeds of 50Mbps to 10Gbps. It owns and operates 66 rural fibre networks and has over 35 under construction across Kent, Oxfordshire, Northamptonshire, Cambridgeshire, Leicestershire, Buckinghamshire, Hertfordshire, Rutland, Gloucestershire, Berkshire and Essex, and more recently Devon and Somerset.

Having spent several years deploying commercially in areas Openreach and others were reluctant to enter, Gigaclear has now embarked on a number of Broadband Delivery UK (BDUK) funded contracts under the Superfast Extension Programme to build next-generation networks in Berkshire, Essex and Gloucestershire, in addition to its continued commercial expansion.

Gigaclear is targeting a market of 1.5 million rural households and businesses across thousands of rural communities. It had around 5,800 customers in August 2016 having passed over 21,000 homes and businesses. It plans to have close to 40,000 premises passed by the end of 2016 and around 100,000 by the end of 2017.

Point Topic recently visited Gigaclear's headquarters in Abingdon near Oxford where we met Matthew Hare, the company's founder and Chief Executive. Gigaclear has grown significantly since our last case study published in December 2013, from 15 employees and 35 contractors, to 150 staff. Following a tour of the site, Hare explained to us how the company is adapting to manage its growing coverage, size and customer base, as well as its ambitions and plans for the future.

2. Background

Gigaclear was established in December 2010 to build ultrafast broadband connections to rural communities. In February 2011 the company applied to Ofcom for Code Powers under the Electronics Communications Code and the following month the regulator published its consultation. The Direction applying the electronic communications code to Gigaclear was issued on 10 May 2011, giving the company powers to carry out street works in relation to the roll out of fibre-based telecoms networks in the UK.

Gigaclear took a majority stake in sub-loop unbundling pioneer Rutland Telecom in May 2011, which is now a wholly owned subsidiary of Gigaclear plc. At that time Rutland Telecom served over 500 residential and business customers in the county of Rutland. Gigaclear needed to demonstrate it was capable of building and running fibre networks and so, according to Hare, buying the capability in

Rutland Telecom was a quick way to achieve this. Since December 2014, all Rutland Telecom operations and support have been managed from the Gigaclear offices in Abingdon.

Gigaclear began construction of its first network in Hambleton, Rutland, in association with Rutland Telecom in September 2011, opening for service a month later. This was followed by another fibre-to-the-home (FTTH) network in the Oxfordshire communities of Appleton and Eaton.

The company's position was boosted in November 2012 when Gigaclear announced it had concluded equity financing from a private group of investors enabling it to substantially accelerate the pace of FTTH rollout. The transaction was arranged by financial advisers Cameron Barney LLP based on a proven level of demand for high-speed broadband in rural and semi-rural areas.

Further funding rounds have taken place as shown in Table 1 below. Two of these rounds in Spring 2014 transformed Gigaclear from a firm backed solely by a small number of private individuals into one backed by over 70 private and institutional shareholders.

Then on 15 September 2014 Gigaclear announced its intention to float on AIM in London to raise additional funds principally from new institutional investors, existing shareholders and certain qualifying customers, to enable it to accelerate the rollout of more ultrafast fibre broadband communities. Floatation was due to take place on 24 October 2014 but was cancelled and rescheduled for 31 October. However, Gigaclear decided to put the floatation on hold due to difficult financial market conditions. According to Hare, "All the work has been done and is kept up to date including having a non-executive board. So we could float tomorrow if we wanted to". Floatation is not a current objective, however. "We are unlikely to go back to the capital markets until we are EBITDA positive," adds Hare.

Two further funding rounds have taken place since then, one in February 2015 and the second in May 2015. Then on 14 January 2016 Gigaclear announced it had secured a EUR25 million committed debt facility from the European Investment Bank (EIB). The loan is being used to support Gigaclear's rural expansion plans during 2016 as it builds to at least 25,000 additional properties. This involves a major investment by the company, one third of which is being financed through the EIB facility. The loan is the maximum available to companies under the 'InnovFin – EU Finance for Innovators' MidCap Growth Finance scheme and was the largest amount the EIB had awarded to any UK business under the initiative.

As of August 2016 Gigaclear had raised £72.5 million in equity, had £20 million yet to draw from the EBI, and £10 million in funding for BDUK projects. Gigaclear says it is fully funded until the end of Q1 2017 and is planning to do another round of funding, the amount to be raised dependent on requirements at the time.

The majority of deployments have been financed entirely by Gigaclear shareholders with no grants involved. The Hambleton network was different, funded by a loan from the community to Gigaclear secured against the assets of the infrastructure. The more recent BDUK-funded contracts are therefore new territory for Gigaclear but the company says it always expected to see a mixture of funding approaches being used.

Table 1: Gigaclear funding history

Date	Details
November 2012	Private group of investors
April 2014	Raised over £2.75 million through an Enterprise Investment Scheme (EIS), which resulted in more than double its original minimum target
May 2014	Gigaclear agreed to an additional investment of £5 million from the CF Woodford Equity Income Fund
2 July 2014	Confirmed successful completion of a new round of equity financing totalling £7.75 million to enable Gigaclear to commence rollout of several additional new networks, with the target of serving 10,000 homes and businesses by the end of 2014
13 February 2015	Round of equity financing in which £6.5 million in funds were raised from both existing and new institutional and private shareholders. The CF Woodford Equity Income Fund added to its initial investment and Forward Private Equity became the company's second institutional shareholder. Following this new round of funding, Gigaclear had over 100 private and institutional shareholders
11 May 2015	Secured £30 million in new equity providing resources for the next 24 months. Prudential committed to invest up to £20 million, managed by Infracapital, the infrastructure investment arm of Prudential. Meanwhile existing shareholder Woodford Investment Management committed a further £10 million of investment
14 January 2016	Secured a EUR25 million committed debt facility from the European Investment Bank

3. The business model

Gigaclear is both an infrastructure operator and service provider, and says it is able to install FTTP networks to provide broadband internet access to homes and businesses in rural communities delivering a return on investment after 5.5 years. This is up slightly from five years due to the density of properties in coverage areas having decreased slightly. Costs are running at around £1,000 per property. In BDUK areas the cost to Gigaclear is around £1,200 per property.

Building a predictive model on a demand-led base

Central to Gigaclear's business model has been its demand-led approach. It developed a strategy of raising interest in individual communities with residents and businesses making expressions of interest followed by orders for service via the Gigaclear website. By pre-marketing and pre-selling broadband orders, the company has been able to reach a penetration level which makes deployment viable, before actually committing to any build.

In October 2016, however, Gigaclear move away from pre-selling broadband provision. Using uptake data already gathered, the operator as developed forecasting tools to predict where it should build. Marketing and selling therefore now begins when building begins, with these functions running in parallel throughout the process. Testing this approach during September 2016 the company says that take-up has proved at least as good in predicted areas as it has in pre-sold areas, and that the

method is resulting in cost savings. According to Hare, "It means the time taken from order to service provision goes down from months to a few weeks. This eliminates a huge amount of the time we were spending having conversations with customers who had not received their service yet." He adds, "It lowers our costs as we do not have to employ as many staff answering calls, and our sales and marketing structure is more targeted".

The company works with communities that meet the following criteria:

- A community that is not currently served, or planned to be served by a high-speed broadband provider
- The community must comprise at least 350 properties, down slightly from a specification of 400 three years ago
- The community must be within 3km of a UK fibre backbone provider, or an existing Gigaclear community
- At least 30 per cent of the community need to be expected to sign up to the service. In fact Gigaclear's take-up is averaging 36 per cent of premises passed.

Developing choice in service provision

Gigaclear provides broadband products as an internet service provider but its core business is the design and provision of infrastructure. Hare says this focus on infrastructure provision rather than services will continue to be a key strategy going forward. Gigaclear's service portfolio is therefore limited in terms of additional products, and it does not directly provide email, security or content offerings. Instead the operator partners with specialist businesses to offer such services and customers also use over-the-top products.

Following an agreement announced in July 2013, a number of ISPs started providing services over the Gigaclear network in early 2014. Using Fluidata's service exchange platform which allows service providers to accept, provision and deliver customer orders across additional infrastructure provider networks, end users are able to choose from a range of providers using Gigaclear fibre. Customers are charged by their ISP with Gigaclear receiving payment from that provider or Fluidata. The technical aspects of this agreement, including connections, were in place by early December 2013.

In August 2016 around three per cent of customers on Gigaclear's network were served by other providers. Table 2 lists the service providers available. Exanet has a direct wholesale relationship with Gigaclear while other service providers use the Fluidata platform.

Table 2: Service providers on the Gigaclear network, October 2016

Residential service providers	Business service providers
Cotswolds Wireless	Amatis
Village Networks	Exa Networks
	IDNet
	RM Education

Having customers served by other providers reduces income and thus impacts return. Yet it also reduces Gigaclear's costs in terms of marketing and servicing those customers. "This is a simple

business – dig holes, put in fibre, get orders. It does not help if we are involved with email and online services, which would earn us more but makes for a more complex business with higher costs. We are good at providing fibre assets and have a strong market position in this," says Hare. However, the company is unlikely to pull out of service provision altogether.

Gigaclear continues to be a lean business but now has 150 staff, up from 15 employees plus 35 people working as contractors back in December 2013. Half are based in Abingdon near Oxford, and half in the field. The company has two additional small field offices and is looking to expand this number. Gigaclear has also added experienced new recruits to its management team including David Newbold from Jersey Telecom and Openreach, and Brett Shepard from Claranet.

4. The service, support and marketing

Gigaclear has a number of broadband packages on offer, as outlined in the tables below. Business products were added in 2014 when Gigaclear decided to break down its products into residential, business and enterprise.

The operator does not provide discounted pricing, saying it ensures charges are clear and transparent. All prices are listed on its website and it does not give special offers even if a customer is about to churn. At a slight premium to BT's pricing the operator says it is still comparable when including line rental, and says that it provides a significantly better product.

In terms of customer split, 95 per cent are householders and five per cent are businesses, with business customers making up 15 per cent of Gigaclear's revenues. Half of properties Gigaclear serves have business activities associated with them including working from home, teleworking and entrepreneurs, and about one in 20 are a business property. The operator does not include homeworkers in its business base, and indeed has no objection to residential products being used for part-time business use.

For residential customers, products range from 50Mbps to 1Gbps.

Table 1: Gigaclear home broadband packages, October 2016

Product	Up to upload/download	One off activation fee	Cost
Home 50 Unlimited	50Mbps/50Mbps	£100	£39.90 per month
Home 100 Unlimited	100Mbps/100Mbps	£100	£45.25 per month
Home 200 Unlimited	200Mbps/200Mbps	£100	£52.45 per month
Home 1Gbps Unlimited	Up to 1000Mbps/Up to 1000Mbps	£100	£74.50 per month
48Hr Boost to Home 1G			£5.00

Source: Gigaclear, inclusive of VAT

Optional parental controls, a My Gigaclear website, telephone support and a Gigaclear hub are included in these prices. Static IP addresses are also included as options for the Home 200 and Home 1G products for £2 per month, and there is an option for unlimited calls with Vonage at £8 per month.

The Gigaclear connection and installation kit is provided as part of the £100 activation fee. It contains a 1Gbps Wireless-n router1 with 4×10/100/1000 Ethernet ports plus fibre connection cable2 in lengths 10m, 15m, 25m, 35m, 50m which are supplied free of charge plus ancillaries. Longer cables are available for an additional fee on request, for example the 75m cable kit costs £48 and the 100m cable kit costs £68. Installation charges start from £129.99 for those not wishing to take the DIY option (see below).

Business customers are offered broadband packages ranging from symmetric 50Mbps to 10Gbps.

Table 2: Gigaclear business broadband packages, October 2016

Product	Up to upload/download	One off activation fee	Cost
Business 50 Unlimited	50Mbps/50Mbps	£166.67	£52.25 per month
Business 100 Unlimited	100Mbps/100Mbps	£166.67	£79.70 per month
Business 250 Unlimited	250Mbps/250Mbps	£166.67	£132.80 per month
Business 500 Unlimited	500Mbps/500Mbps	£166.67	£265.60 per month
Business 1G Unlimited	1Gbps/1Gbps	£166.67	£445.50 per month

Source: Gigaclear

Maintenance terms on business products are three business days for the 50 and 100 Unlimited packages, and one business day for the three higher speed packages. Business products come with a static IPv4 address and Gigaclear is now introducing IPv6 addresses. Features such as 24x7 telephone support and guaranteed '8 Hour fix' are available at an additional cost. Contracts are based on a 12-month minimum period followed by a three-month notice period, meaning initial sign-up is for 15 months. Gigaclear also provides a range of Enterprise uncontended virtual leased line products.

Contention rates for residential services are 25:1; for businesses they are 10:1; and they are uncontended for Enterprise customers. While the initial order period sees the bulk of sign-ups within a community, Gigaclear tends to experience a small but steady stream of new sign-ups in the following months.

Gigaclear is looking to higher speed services and a 5Gbps product for home owners and businesses has been on trial since early 2016 through Gigaclear's existing FTTP network with a handful of customers. The company says there is a waiting list for the H5G and B5G services. Customer premises equipment however, is proving to be a key issue, unable to cope within an acceptable form factor with the significantly higher broadband speeds. This issue is expected to be resolved in the near future and expectations are that 0.5 per cent Gigaclear's customer base will take the product priced at £399.99 per month.

Telephony services are provided via a partnership between Gigaclear and Vonage, an over-the-top VoIP provider, announced in April 2013. For a fixed monthly cost customers can have unlimited landline calls and free call features. Its Talk UK service costs £8 per month plus a £5 delivery charge. The connection fee of £10 is waived for Gigaclear customers. An extra £4 per month can be paid to make unlimited calls to over 60 countries. Up to 50 per cent of Gigaclear customers use Vonage services.

Approach to marketing

Marketing continues to be very hands on for Gigaclear including leafleting, door-to-door and local events in village halls and pubs. "This is expensive but it gives better results than just sending direct mail that is never read," says Hare.

Gigaclear promotes its services in terms of higher broadband speeds that are consistently fast, symmetrical upload and download bandwidth, greater reliability and unlimited use, and in turn the effect these attributes have on rural living and the work-life balance. It also promotes clarity and transparency in every aspect of its business.

High-speed broadband provision is central to Gigaclear's offer. The company now advertises its speeds using the term 'up to' following an assessment from the Advertising Standards Authority in March 2014 that whilst the majority of line-speed data demonstrated that Gigaclear's customers received the stated speed capacity, it was concerned that this was not the case in all instances.

Gigaclear provides detailed information on the costs of its service, emphasising it is difficult to compare broadband charges like for like with a regular wireline service but that overall pricing is comparable yet with a significant improvement in terms of bandwidth. Example pricing shows Gigaclear's Home 50 including phone calls package, line rental and popular call features at £39.90 plus £8.00 so £47.90 total compared with £57.74 to £64.99 on a BT wireline service when including line rental, call plan and popular call features. Customers do not pay a separate line rental to Gigaclear as it is included in the internet access service package.

Local events have been and will continue to be key elements of the company's marketing strategy. Recent events have included those in Hunsdon in Hertfordshire and Roydon in Essex where residents were invited to ask questions about proposed deployments before registering their interest. These types of event are then followed with door-to-door sales encouraging registration and orders, with a webpage showing progress on registration in terms of percentage required for deployment to take place.

Gigaclear also holds events once service is up and running to encourage further orders. In Appleton Village Hall, for example, residents were invited to see demonstrations of what can be done with a 1Gbps broadband service, and the Uppingham network launch was marked by a series of 'open house events' during which residents shared ways to make the most of an ultrafast network including internet telephony, music and video streaming, home working, health and home monitoring.

"It is hard to imagine what life could be like with superfast broadband and changing the way people behave takes time. There tends to be 10 to 15 per cent of residents within a community who 'get it', but you need 30 per cent or more to make a deployment viable. Some residents need to be shown what it means to have superfast broadband; people have got to try it," comments Hare.

Gigaclear has also experimented with a 'money-back' guarantee in some areas, including in Roydon where those placing orders have been guaranteed a full refund if they are not satisfied with the product once it is up and running.

As with any other contract entered into over the phone, online or on the doorstep, residential customers have the statutory right to cancel within 14 days of signing a contract. Gigaclear says that about 95 per cent do not cancel.

Customer care and support

Gigaclear's customer care team use Salesforce and the NETadmin customer management system. This makes it possible for support staff to see all devices linked to its router in a particular property, with permission from the customer, enhancing employees' ability to resolve issues especially those concerning wifi.

As the company has grown, it clearly has to deal with more queries from customers. In terms of any installation problems Gigaclear can send its own member of staff rather than contractors to resolve issues as they can inspect as well. Churn is low for Gigaclear with moving house cited as the main cause of any cancellations.

The main cause for complaint has been project timings and delays in the schedule. Company surveys show that 54 per cent of customers are likely to recommend the service, and staff say they receive very few calls on service not working properly. Around two thirds of calls have been to ask when service is coming. Indeed this has been the key driver in Gigaclear's new predictive approach to rollout (as mentioned above). The company's examination of its processes, especially in terms of how long it can take for a customer to receive service once they have placed an order, in some cases up to a year, has led to sales and marketing beginning at the build stage specifically to address this issue.

Hare says communication is also central to customer care. The company is looking at better ways to do this, for instance personalising emails on updates regarding dig dates and enabling those who have ordered service to opt in for either weekly or monthly updates. The company has geared up its support for greater customer numbers by contracting with Centuria (based in Poland) to provide an overflow and out of hours service.

5. Deployments to date

In August 2016 Gigaclear had around 5,800 customers and had passed over 21,000 homes and businesses. This compares with mid-February 2016 when the operator had 4,500 live customers, had installed a fibre connection to approximately 14,000 homes and businesses, and completed rollout to another 3,500 premises in communities. The company expects to have passed around 40,000 properties in total by the end of 2016. In early August 2016 of the almost 55,000 in delivery, of which 50 per cent were completed, 27,728 were commercially funded and 27,143 were BDUK-funded.

Its most recent new deployment announcement was that on 27 June 2016 when the operator said it plans to deploy an FTTP network in the Blackdown Hills area of Devon and Somerset. The project could see 2,000 properties in the area connected to ultrafast broadband using 120km of underground fibres. Over the coming months, Gigaclear will start to deploy its service across a

number of villages in the Blackdown Hills area including Upottery, Hemyock and Kittisford. Deployments are listed in Table 3 below.

Gigaclear's network in the West Oxfordshire part of the Cotswolds is also under construction. On 10 May 2016 Cotswolds Broadband ("CBB", a Gigaclear subsidiary) announced that work was to begin on the installation of 14 concrete plinths in villages across the district on which fibre cabinets will be installed. It is estimated that work on the whole network will be completed within 12 months. The project aims to fill in gaps not covered by other schemes ensuring that the whole of West Oxfordshire will be able to get superfast broadband.

The CBB project received formal sign off for a £1.6 million grant by the Government in December 2016. West Oxfordshire District Council is also investing matching funds in the form of a loan with another £3.2 million private investment from Gigaclear. The network will be provided by Cotswolds Broadband – Cotswolds Broadband CIC sold its entire share capital to Gigaclear plc in December 2015 and is a wholly owned subsidiary of Gigaclear with a different board. The deal brought a further network to Gigaclear's portfolio, together with pre-procured supplier ITS Technology Group selected following a public tender. The project is to cover an estimated 6,000 properties and a mix of technologies will be used including FTTP and, in very remote areas, wireless connectivity.

Gigaclear has also won three substantial BDUK contracts in Gloucestershire, Berkshire and Essex. Build and customers are ramping up in these areas. By early October 2016 the first area of the Fastershire (Herefordshire and Gloucestershire County Council's broadband scheme) phase 2 rollout across the Cotswolds had reached its halfway mark, with over 3,000 properties in some of the most isolated areas of Gloucestershire covered. Gigaclear was appointed by Gloucestershire County Council as delivery partner for Fastershire's phase 2 broadband roll out in June 2015. It will cover 6,500 homes and businesses in the Cotswolds.

Earlier on 16 December 2015 Gigaclear said that its first property had gone live in West Berkshire as part of phase 2 of the Superfast Berkshire project which seeks to expand superfast broadband coverage to over 99 per cent of West Berkshire by 2017. Residents and business owners in surrounding communities, such as Hungerford, East Garston, Kintbury and Lambourn, were due to come on line in 2016. Gigaclear is investing £16 million, combined with contributions from BDUK, West Berkshire Council, and Thames Valley Berkshire Local Enterprise Partnership.

On 21 December 2015 the first property in Essex to be connected by Gigaclear under the Superfast Essex Rural Challenge Project programme went live receiving upload and download broadband speeds of up 940Mbps. This comes five months after Superfast Essex appointed Gigaclear to deliver its Rural Challenge Project, which will deploy FTTP technology, and only one month after the first stage of digging was announced on 1 December 2015. The ultrafast service is set to rollout across 18 parishes in Epping Forest District. Parts of Abbess Beauchamp and Berners Roding, Bobbingworth, Fyfield, High Ongar, Moreton, Ongar, Stanford Rivers and Willingale are among the first areas to be reached by the project.

The Essex deployment is close to a commercial Gigaclear deployment in Hertfordshire, announced in November 2015 to cover 4,000 homes and businesses. The village of Hunsdon and its surrounds was the first to see marketing. The company plans to invest around £4 million to connect the initial

properties across the county. The Gigaclear rollout will then extend firstly to the surrounding areas of Much Hadham, High Wych, Eastwick, Allen's Green, Perry Green, Green Tye, Widford and Gilston Park.

Gigaclear is investigating the feasibility of employing disused water mains to house cables and is working in partnership with Affinity Water on a pilot project on the utility company's out of use pipes in the Hertfordshire villages of Furneux Pelham and Little Hormead. The project aims to establish the overall feasibility of the concept and its scalability, as well as testing the technical aspects of how to install the fibres through the pipes.

Gigaclear has also been covering business parks, including the park where its headquarters are located in Abingdon. In March 2014 the operator announced it had designed, built and installed a FTTP network at Kingston Business Park in Kingston Bagpuize in Oxfordshire, which went live in September 2013.

Table 3: Gigaclear FTTP deployments up to October 2016

Date announced	Description	Deployment live	Premises passed
12 September 2011	Hambleton in Rutland	Gigaclear started ground works in September 2011; first customers connected early October 2011 and entire project complete by mid-October 2011	66 premises
29 May 2012	Appleton and Eaton in Oxfordshire	Build began July 2012 with first connections live in September 2012	414 premises
6 December 2012	Fyfield and Tubney in Oxfordshire	Live in March 2013	239 premises
19 December 2012	Market town of Uppingham in Rutland	Began construction of network in December 2012; service live in April 2013 in North East quarter of Uppingham including The Beeches	163 premises
27 February 2013	Frilford and Frilford Heath in Oxfordshire	Live in November 2013	292 premises
September 2013	Kingston Business Park in Kingston Bagpuize in Oxfordshire	Business park live	
20 March 2014	Otmoor in Oxfordshire across the villages of Beckley, Elsfield, Horton cum Studley, Noke, Stanton St. John and Woodeaton	Installation work begun	700 premises
29 April 2014	Kent village of Underriver	First phase Wildernesse Estate, Blackhall Lane, Godden Green and Underriver was expected to be complete by early July 2014. A second phase covering Bitchet Green, Stone Street, Ivy Hatch, Plaxtol,	Nearly 2,000 premises

		Ightham Common and Shipbourne	
5 November 2013	Farmoor and Stanton Harcourt in Oxfordshire, Underriver and surrounding villages in Kent	Construction work underway in Farmoor in November 2013, work in Stanton Harcourt commenced in December 2013	1,500 homes and four business parks
20 June 2014	Villages near Peterborough	Villages of Ashton, Bainton, Barnack, Helpston, Marholme, Pilsgate, Tallington and Ufford,	Almost 1,500 premises
24 August 2014	Villages of Northmoor, Moreton and Bablockhythe under scheme in West Oxfordshire	Switched on by then Prime Minister David Cameron in August 2014; part funded Rural Community Broadband Fund	
21 November 2014	Communities in Leicestershire and Northamptonshire in the Welland Valley	Initially in Blaston, Bringhurst, Cranoe, Drayton, Hallaton, Horninghold, Medbourne, Nevill Holt, Slawston, Ashley, Brampton Ash, Dingley, Stoke Albany, Sutton Bassett and Weston by Welland	
1 December 2014	Six villages across Otmoor and villages of Wootton, Standlake and Forest Hill	Continuing with further rollouts across remainder of Wootton, including the Boars Hill area and another new network across Kingston Bagpuize and Southmoor	3,000 premises
22 January 2015	Villages of Ashton, Bainton, Barnack, Helpston, Pilsgate, Southorpe, and Tallington near Peterborough	Live by June 2015	
23 January 2015	Villages of King's Cliffe and Apethorpe in Northamptonshire; second project to deliver across several villages North West of Northampton	Live by April 2015	5,000 premises followed by further 2,500 premises
17 March 2015	North Yorkshire villages of Cononley and Carleton	Local staff recruited for deployment	
25 March 2015	Leicestershire villages in Welland Valley	Supported by the Welland Valley Broadband Group, deployment to the villages of Blaston, Bringhurst, Cranoe, Drayton, Glooston, Hallaton, Horninghold, Medbourne, Nevill Holt, Slawston and Stockerston	
26 June 2015	Gloucestershire County	Rollout halfway in early October 2016	6,500 premises

	Council appointed Gigaclear as delivery partner for Fastershire's phase 2 broadband roll out in the Cotswolds	with over 3,000 properties passed	
1 July 2015	Superfast Essex appointed Gigaclear to deliver its Rural Challenge Project across 18 parishes in north east of Epping Forest District	First stage of digging announced on 1 December 2015. Parts of Abbess Beauchamp and Berners Roding, Bobbingworth, Fyfield, High Ongar, Moreton, Ongar, Stanford Rivers and Willingale among the first areas	4,500 premises
3 July 2015	Contract awarded by West Berkshire as part of Phase 2 of Superfast Berkshire project	First properties live in December 2016, other communities including Hungerford, East Garston, Kintbury and Lambourn, due to come on line in 2016	11,700 premises
6 November 2015	Hertfordshire	Hunsdon and its surrounds first for marketing, then extending to Much Hadham, High Wych, Eastwick, Allen's Green, Perry Green, Green Tye, Widford and Gilston Park	4,000 premises
10 May 2016	Cotswold Broadband project for West Oxfordshire District Council	A mix of technologies will be used including FTTP and, in very remote areas, wireless connectivity	6,000 properties
27 June 2016	Blackdown Hills area of Devon and Somerset	Initial deployment in villages in the Blackdown Hills area including Upottery, Hemyock and Kittisford	2,000 properties

Source: Gigaclear

Network installation

Gigaclear delivers an all-fibre, active, fibre-to-the-premises network, providing a 1000BaseFX Ethernet service to every property it connects to. The operator's backhaul typically runs at 10Gbps and is provided by a national service provider. Gigaclear connects to Telehouse in London and Equinix in Slough. At present the network is single handed but most of it will be dual handed from the end of 2016. Gigaclear uses part of the CityFibre network and has preferred customer status with the wholesale operator through a partnership announced in July 2016 designed to give Gigaclear access to more capacity, faster delivery and more flexible bandwidth across the country.

Each property has a fibre connection installed at its boundary to the highway or private land that the company has permission to access. Inside this connection point are two fibres, one used for service and the second as a spare.

Gigaclear provides and owns the network as far as the connection point at the boundary of a property and the highway; the customer then has the drop fibre installed over their property and router installed within their property. To date customers have had three choices with which to install:

- The self-install option of both fibre and router following Gigaclear's instructions. The company says that not many customers now choose this option although at one time more than one third did
- Using a local tradesman
- Contracting Gigaclear's approved installer, Boxcom, for installation, including fibre connection, testing the installation and connection configuration. An average installation costs £155.

However, from 1 November 2016 all installations will be booked through Gigaclear which will bill the installation service on the first bill. Gigaclear will use its own teams and third party installers. Fixed prices will be offered to most customers with fixed price quotes for difficult or very long installations.

Within the home, Gigaclear provides a Genexis 739 Gigabit router with four Gigabit Ethernet ports and a Wireless-AC WiFi service.

Gigaclear says it works directly with contractors to minimise overheads and has a number of partnerships in place. In October 2011 it announced a framework agreement with ZTE Corporation for the provision of core network equipment for point-to-point fibre network construction. The operator has also worked with fibre specialists AFL to design and plan fibre networks, and with Icotera which provides routers capable of delivering symmetric speeds of 1Gbps. Gigaclear has also been using Genexis Titanium CPE, Keymile Milegate Access switches and Juniper core routers.

In May 2013 Gigaclear signed a deal with OSS provider NETadmin Systems to improve its customer support services to speed up delivery of new network. This has automated processes such as network monitoring, service provisioning, customer management and ticket management.

The network is currently built for 1Gbps symmetrical services. But Hare says Gigaclear will soon be building for 10Gbps symmetrical services and that its existing infrastructure will be upgraded via electronics changes. Gigaclear uses a number of contractors including Boxcom, Fibretech and Complete Utilities.

Gigaclear offers standard wayleaves with standard rates agreed with the CLA and the NFU and does not offer different pricing for wayleave agreements. Sometimes farmers or rural landowners will ask for an installation at a property instead of wayleave fees, for instance if they are a long way from the fibre dig.

Network deployment has continued to see fibre largely buried direct and therefore not in ducts. This means a 50-year replacement cycle. Mole ploughing is used and automation has increased, resulting in a rise in volumes. On the day of Point Topic's visit, Gigaclear had 60 crews out working being inspected by eight of its own engineers.

Gigaclear does not use poles because of the increased requirement for maintenance and different engineering skills which would mean a different business case. This means the company may not be willing to bid for some very rural projects. Gigaclear pays contractors from £2.50 to £80 per metre depending on whether dig is through verge, carriageway or field.

Network maintenance is outsourced to a company which deals with issues on the ground including changing line cards. However for trouble shooting, Gigaclear uses its own engineers who are able to inspect as well as fix problems. In order to help with recruitment, Gigaclear has a programme to take placement students for a year. It also runs its own apprentice schemes including those for engineering, customer care and sales.

Photographs: The dig process

6. Looking to the future

Gigaclear has succeeded in maintaining its core approach and business model in a changing market for rural FTTP deployment. Its commercial, demand-led method has served it well, and the operator continues to have a strong order book of communities that fit its deployment criteria. Recent changes to its pre-selling strategy show the company is drawing on its experience (and data), and is willing to adapt its processes to achieve greater cost-efficiencies and respond to customer expectations.

Gigaclear also appears to be coping with the incorporation of publicly-funded deployments into its business model, and the addition of Berkshire, Essex and Gloucestershire contracts to its footprint will be a major benefit in terms of building scale. Indeed, timing of second phase contracts under BDUK's Superfast Extension Programme has worked rather well for Gigaclear, which had a strong track record in rural FTTP provision by the time these contracts were tendered.

Maintaining its focus on core infrastructure without the distractions of a service-led model continues to be key. Gigaclear has made some progress in terms of attracting other providers onto its networks, through both direct (Exanet) and indirect relationships (via the Fluidata platform). But the momentum for this needs to be maintained in turn to attract more brand conscious consumers and thereby raise penetration levels. This may be more important as Gigaclear comes up against increasing competition. Hare says that 45 per cent of its network has been overbuilt by Openreach. Virgin Media has also deployed infrastructure adjacent to Gigaclear areas. Scale and the continued investment it requires are central to achieving this. And this depends on proving that commercial FTTP technology can be provided profitably to rural and semi-rural communities.