Would you like better internet service in West Bergholt?

Yes!

What can we do?

Current state of play: UK Government broadband initiatives Superfast Essex (BDUK):



Superfast Essex funding in detail:

	Phase 1: 87% coverage	Phase 2a: 95% coverage	Phase 2b 'The Rural Project' :
	вт	вт	95% coverage Gigaclear
Project Value:	£24.6m (£378 per home)	£18.9m (£371 per home)	£7.591m (£1670 per home)
Public Funding:	£12.92m (£199 per home)	£10m (£196 per home)	Probably about £2m (£501 per home)
Public Funding: Percentage	52%	53%	Probably 25-30% based on figures available from two other Gigaclear BDUK county superfast projects.
Partner	BT	ВТ	Gigaclear
Premises reached (per project)	65,000	51,000	4,545
Starts	April 2014	Summer 2016	November 2015
Completes	Summer 2016	2019	December 2016
Technology	Predominantly FTTC, with some FTTP	Predominantly FTTC, with some FTTP	All FTTP
Speeds	Superfast	Superfast	Ultrafast
	(24Mbps and above)	(24Mbps and above)	(From 50Mbps up to 1000Mbps)
Areas covered	Dispersed all over Essex. Check the map on the superfast Essex website.	Dispersed all over Essex. Check the map on the superfast Essex website.	Pilot focused on East of Epping Forest District.

Current state of play: Government broadband initiatives Superfast Essex (BDUK):

- Current plan (Phases 1&2) is to get us to 95% coverage of 24mbs and above by 2019. What about the final 5%? Further phases for Superfast Essex? Would further phases even involve us?
- Further phases to superfast Essex?: 'The reason why we haven't seen a solid policy for tackling the remaining gap in coverage (5%) is because the Government's original **EU State Aid umbrella agreement for broadband projects (BDUK) expired at the end of June 2015** and they're still consulting upon its replacement, which **might not be ready until around May 2016**; altnets (alternative network providers) may well benefit from this.'
 - 'The Government has today published a new report on the "successful" outcome of their recent **Market Test Pilots**, which were setup in 2014 to help trial alternative network solutions (fibre optic, satellite, wireless etc.) for bringing superfast broadband (24Mbps+) to remote rural areas. The original **£10 million Innovation Fund** actually contained 8 pilot projects, which were all intended to test alternative approaches to the normally BT and Virgin Media dominated national infrastructure solutions'
- Unfortunately, we are not a part of the Superfast Essex scheme. We likely will never be or for significant number of years, there is currently no official plans for further phases for Superfast Essex.

Current state of play: Government broadband initiatives

No new announcements in the 2016 budget:

- 'A Universal Service Obligation should give everybody the legal right to request a broadband connection capable of delivering a minimum speed of 10Mbps by 2020.' How are they going to deliver this? Likely a Satellite Broadband connection! No thanks!
- The Autumn 2015 budget proposed to create a new Broadband Investment Fund, which is designed to help altnets (alternative network providers) to secure funding to build out their infrastructure. But so far we've seen precious little detail on this and still don't know if it will become something real and useful or not.

Current state of play: Government broadband initiatives

The telecoms regulator (Ofcom):

- Feb 25th: 'The telecoms regulator has today published its preliminary proposals as part of a major Strategic Review of the United Kingdom's Digital Communications market, but the big news is they've decided NOT to completely split BT from its national broadband and phone network (Openreach).'
- One of the key changes in last week's Strategic Review, which saw Ofcom move to increase the separation between BT and the division responsible for its UK phone and broadband network (Openreach), was the proposal to **introduce a new wholesale Duct and Pole Access (DPA) solution to help ISPs build alternative networks.**'

How did we get here? Why are we in this position?



BT Monopoly, lack of strong UK government initiatives, weak UK (Ofcom) regulator.

As Sellers:

BT 32% Virgin Media 20% TalkTalk 14% Sky 22% EE 4% Others 8% (altnet providers e.g. Gigaclear, County broadband etc.)

As service providers:

• What this really means:

BT (Openreach) 72%

Virgin Media 20% Others 8% (althet providers e.g. Gigaclear, County broadband etc.)

Source: http://media.ofcom.org.uk/facts/

Let's get this out of the way first, what types of broadband are there?

- Fixed Line Narrowband
 - Dialup
- Fixed Line Broadband
 - DSL (ADSL , SDSL)
 - Cable and Hybrid Fibre (FTTC Fibre to the Cabinet , G.fast (BT), DOCSIS (VirginMedia))
 - Fibre Optic (FTTP Fibre to the Premises)
- Wireless Broadband
 - Fixed Wireless Access (WiFi , WiMAX)

Level 1: Dial up



- We had this Pre-2000s
- I need to make a phone call, please get off the net!
- Ring-ring can I have some internet please.
- Nearly nobody has this anymore and nobody should inflict it on anyone.
- No fibre, all copper material.

Level 2: DSL (ADSL, SDSL)

Our current level of service with BT.

- Provider
- We got this in the early 2000s? Almost everyone in the UK have at least this level of service.
- DSL (Digital Subscriber Line) is a common technology for bringing highbandwidth (broadband) information to homes and small businesses over standard (copper) telephone lines.
- Around 2mbs and less in this village. 1hr 11mins to download a 1GB file.
- Fibre only goes up to the nearest local exchange, BT's is in Fordham.



Level 2.5: Fixed Wireless Access (WiFi, WiMAX)

Our current service with County Broadband

We received this in around 2010? By County Broadband.



County

And

many

other

altnets.

- 'Fixed Wireless Access (FWA) providers (Wireless ISPs WISPs) use specific frequencies of the radio spectrum to transmit their signals through the air (radio waves) and in a similar way to how mobile phone networks operate, doing away with wires. Most wireless ISPs only offer very limited coverage in specific/niche areas (e.g. rural villages), although their price and performance tends to be good.'
 - Speeds vary widely depending on the provider however usually around 10mbs and above.
- In the case of County Broadband the max speed is 32mbs burst speed only for first 120seconds, 40% of this speed after i.e. 12.8mbs max speed. (7min 53secs to download 1GB file).
- At the moment County Broadband has fibre in Colchester via a third party provider. Plans are to bring fibre to the village this year with speeds up to 100mbs and removal of burst speed policy (1min 25secs to download 1GB). However this will still mean that the connection between the node (similar to a cabinet) that brings fibre to the village and your home will still be WIRELESS.



Level 3: <u>Cable and Hybrid Fibre (FTTC – Fibre to the Cabinet,</u> G.fast (BT), <u>DOCSIS (Virgin Media)</u>)

Service level that most people in the country have by now.



Wirqin media

And some altnets.

- Cable and Hybrid Fibre Optic broadband technologies also known as **Fibre-to-the-Cabinet (FTTC)** solutions, represent high capacity internet access connections that can deliver 'superfast' speeds of **at least 24Mbps and up to 76Mbs (5min 57 secs and 1min 53secs respectively)** by combining older copper, aluminium or coaxial lines with the latest ultrafast fibre optic cables.
- We do not have FTTC.
- Started becoming widespread by the late 2000s and is almost at 90% in the UK.
- For us this would translate as Fibre in West Bergholt. Currently with BT it's fibre up to the nearest exchange which is in Fordham, with County Broadband it is up to Colchester.
- DOCSIS (Virgin Media), G.fast (BT) are different technologies that improve upon basic FTTC however they both are still limited by using non-fibre (usually copper or another metal) between your home and the cabinets in the village.



Level 4: Best of the best, the final broadband solution: Fully Fibre Optic (FTTP – Fibre to the premises)

Providers

And many altnets, most well known are: KC, Hyperoptic, B4RN, Gigaclear and CityFibre (Gigler). FTTP services work by delivering a pure fibre optic line directly to your doorstep. Often this means a symmetric 1Gbps connection i.e. 1000mbs for both download and upload (8 seconds to download 1GB!). Highest speed achieved is 31Tbps i.e. 31,000,000mbs.

We do not have FTTP.

- Future proofed for 50 years and more. Once fibre has been laid to your home, no further digging or work inside the village roads should be needed until we are all long gone, except for further upgrades to the node that brings the internet into the village in order to further raise speeds into the future.
- New kid on the block in the UK, around 1% have it, mostly provided by alterts. Many other countries in Europe are in the double digit percentages. For example, Spain and Netherlands at about 15%, Norway at about 27%. Reason: BT Monopoly, lack of strong enough UK government initiatives, weak UK (Ofcom) regulator.
- Since there is no copper, your distance from the nearest cabinet will not effect your level of service. An equal service level for all.
- By having FTTP your house prices will raise by a not insignificant amount +£5000? They will also sell much quicker with buyers knowing your speeds!



We've been left in the cold. What can we do?



LET'S START A COMMUNITY FIBRE PARTNERSHIP!

Let's create a group to campaign for better broadband like we did in 2010.

What is a community fibre partnership?

What are the options for a community fibre partnership that are available to us?

START A COMMUNITY FIBRE PARTNERSHIP! What is that?

We already have successful experience! We had a partnership with an ISP named County Broadband, they came into the village when BT would not invest in any significant upgrades.

A community fibre partnership usually comes in two forms:

Do it ourselves' – We as a community fully fund (investments and loans) into bringing fibre into the village and directly to peoples homes (FTTP). Where possible we also volunteer our time and effort into helping the installation of the equipment and maintaining the network, yes it is possible, example will follow!

'In partnership with an ISP' – The community contribute an amount of funding (donations, investments, or loans) towards the cost of bringing fibre into the village (FTTC) and potentially directly to peoples homes (FTTP).

'Do it ourselves' – An Example

- B4RN is a professionally designed fibre optic broadband network (FTTP), registered as a non-profit community benefit society, and run by a dedicated local team with the support of landowners and volunteers. They offer 1,000Mbps FTTP broadband to every property in their coverage area within North West England, costing households only £30 per month.
- Broadband for the Rural North Ltd or 'B4RN' was launched in December 2011 by a local volunteer group led by industry expert Barry Forde. Registered as a community benefit society with the FSA (under the Industrial and Provident Societies Act 1965) it can never be bought by a commercial operator and its profits can only be distributed to the community.
- The company's initial share offering raised hundreds of thousands of pounds from the local community and the first ground was broken in Quernmore in March 2012. Within months B4RN's affordable, community focused model won it the ISPA's 'Internet Hero' award. By 2015 we had 1000 properties connected and received royal recognition with a visit from HRH The Prince of Wales. We are regularly used as a leading exemplar, by national TV and press, of what is possible both in terms of gigabit fibre and an empowered rural community.'





- B4RN did do it alone in terms of funding, but they had the help of world leading organisations such as Emtelle, Stirling Lloyd, and Lancaster University.
- A difference between their situation and ours is they're much more sparsely populated than us, therefore, they had much more fibre to lay and therefore, a higher cost of fibre material per home. On the other hand, they often had grassland going to their homes and between villages. A majority of it could be dug by community volunteers or with equipment already owned by landowners. Where roads were needed to be trenched and fibre blown through it, Emtelle/Stirling Lloyd carried this out.
- A similarity between our communities is that Chris Conder helped with provision of fixed wireless access (like county broadband) in their community before, however not everyone could get it. Now they have FTTP, could we do the same?
- They also took advantage of EIS (Enterprise Investment Scheme) which allowed the community to gain 30% tax relief on their investments.
- Barry Forde and Chris Conder were both awarded MBE's.



Who are these organisations and what did they do to help?

- 'Emtelle Group is the industry leader in plastic tubing for telecommunications and water piping. As the first high-volume producer in the world of blown fibre tubing, Emtelle's expertise is unrivalled.'
- 'Micro-trenching is a technique for building high speed fibre broadband infrastructure at much lower cost and much higher installation rates than is possible using conventional trenching techniques. Stirling Lloyd leads the world in this technology. 5x the normal installation rate and at 1/3 of the normal cost.'
- Professor Barry Forde used the help of Lancaster University in planning of the network map and routes.



B4RN 'Show and Tell'

- The 9th B4RN 'Show and Tell' day event is on the 26th of April. Please join me, admission to the event is free! We can gain a lot of information and it will be a good experience by visiting them for anyone interested in what a community can achieve regardless of your interest in broadband.
- <u>http://b4rn.org.uk/3039-2/</u> or simply go to the B4RN website <u>http://b4rn.org.uk</u> and click on '**News**' at the top right and then you will find the 'Show and Tell' event news article listed.
- Please register for attendance by emailing <u>simonw@emtelle.com</u> You will be sent further details regarding the full agenda and location.
- Learn about fleeting fibre, waypoints, fusing fibre, splicing fibre, blowing fibre, and what a community can achieve together.
- Videos to keep you interested: Search B4RN into youtube and you should find a playlist with at least 50 videos created by Chris Conder.

'Do it yourselves' – Other Examples

- Other B4RN subgroups can be found here <u>http://b4rn.org.uk/b4rn-service/coverage-area/</u>
- Some of which have their own websites http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/ http://www.gbcic.uk/

In partnership with an ISP – Example?

Future FTTP provider County Broadband?

- We had a community fibre partnership in 2010 to bring wireless internet into West Bergholt.
- We have a past history of success with the altnet, County Broadband, though no commitment to them anymore.
- They are a local business in Aldham, local jobs could go if BT come in with FTTC.
- Could we start a second partnership with County Broadband to bring in FTTP?
- A second partnership would likely install fibre optic cable between the node that brings fibre into the village (coming for free later this year) and our premises: Fibre to the Premises (FTTP).
- A funding arrangement of 25-35% would be needed which is similar to the 25-30% funding arrangement BDUK has with the altnet FTTP provider Gigaclear.
- Total cost of FTTP in West Bergholt would be between £1m-£2.25m
- This would mean funding needed for this project from our community of between about £250,000 and £787,500. This would average (about 1500 homes in West Bergholt) to between about £167 and £525 per home.





In partnership with an ISP - Example BT & Spacebook

- 'A BT Openreach Community Fibre Partnership 'is when we work together with a local community (that is not in our commercial or BDUK fibre roll-out plans) to develop a solution to bring fibre to their community. There usually needs to be a joint funding arrangement, where we cover the costs in line with our commercial model used throughout the country and the community has the option to self-fund the remaining gap.'
- £115,000 for this village to fund the gap for FTTC, about £75 on average per home, no quote yet provided for the cost to fund the gap for G.fast (BT) or FTTP (Fibre to the premises by BT) which I believe can also be discussed.
- Spacehive is a crowdfunding platform which can be used and is encouraged by BT Openreach as a method to raise funding.



Let's review the options available to us:

'Do it alone' like B4RN did in 2011, FTTP level 4.

In partnership with County Broadband, FTTP level 4.

In partnership with BT, likely to be FTTC only Level 3.

'Do it alone' like B4RN did in 2011, FTTP level 4. Advantages

- Possibly the most rewarding option, by volunteering you could gain skills, make friends, and a valuable life experience.
- The advantages of FTTP over alternatives already discussed.
- Any money you give towards this scheme you will see back in return, though not a get rich quick investment by any means! Usually there is a period of time (3 years in B4RN example) before community investors are paid interest (5% with B4RN) and are allowed to withdraw their investments or loans.
- In the example of B4RN, they also setup an offer of free service for a year and a free installation fee for those who contributed an investment over a certain amount.
- The monthly subscription fee we charge people in the village is up to us and the lower cost of running it ourselves means that this fee is usually much lower than a commercial ISPs monthly fees.
- Once we have started paying off those who want their investments back and other substantial fees, we as a community can eventually decrease this monthly charge even to almost nothing within 10 years if we want to, no more monthly internet costs! Or we can use the excess money we receive from the communities internet monthly subscription fee to pay for other things that will benefit the community elsewhere!
- The technology employed is entirely up to us.
- To keep the cost of implementation down we can start off with slower speeds and do further upgrades to the nodes that bring the fibre into the village in the future e.g. start from 100mbs then to 1000mbs then to 10,000mbs and beyond! The major cost is in laying the fibre to peoples homes.
- If any problems occur on the network it will likely be fixed very quickly due to those who maintain the network being located in the village or close by. With pure optic fibre, problems can be isolated to the specific location and fixed within hours, try getting that with BT or Virgin Media. Going forward into the future we can pay a service for repairs to the network to be made on our behalf if a community approach to repairs can no longer be maintained e.g. people leaving the village.

'Do it alone' like B4RN did in 2011, FTTP level 4. Disadvantages

- The most difficult option available to us, there are differences in our location compared to that of B4RN, costly for the community to fully fund.
- Requires technical expertise, knowledge, and advice in order to map out and plan how the network will be implemented, however organisations such as Emtelle, Stirling Lloyd, B4RN, Essex University, Lancaster University should be able to offer their help and current or ex-employees of ISPs, those with technical backgrounds who live in the village or those outside the village willing to offer their support.
- Will require commitment, time and effort from the community by volunteers.

In partnership with County Broadband, FTTP level 4.



Advantages

- Purely a financial arrangement no need for the community to volunteer their time and effort towards digging or splicing fibre, or to maintain the network.
- Any money you give towards this scheme you will see back in return, though not a get rich quick investment by any means! Usually there is a period of time (3 years in B4RN example) before community investors are paid interest (5% with B4RN) and are allowed to withdraw their investments or loans.
- With an ISP it would cost less for the community to fund rather than a 'Do it alone' scheme.
- Midway option to finance.
- Advantages of FTTP over alternatives already discussed.
- Possibly could setup an offer of free service for a year and a free installation fee for those who contributed an investment over a certain amount.
- To keep the cost of implementation down we can start off with slower speeds and do further upgrades to the nodes that bring the fibre into the village in the future e.g. start from 100mbs then to 1000mbs then to 10,000mbs and beyond! The major cost is in laying the fibre to peoples homes.
- If any problems occur on the network it will likely be fixed very quickly due to those who maintain the network being located close to the village. With pure optic fibre, problems can be isolated to the specific location and fixed within hours, try getting that with BT or Virgin Media.

In partnership with County Broadband, FTTP level 4. Disadvantages

- In comparison to 'Do it alone B4RN', County Broadband will own the network and you will have to pay what they say or what one of their third party sellers will charge. Therefore unlike 'Do it alone', once the new network upgrades are built they will ultimately have control on this matter going forward.
- Though not as expensive as 'Do it alone', still requires a not insignificant contribution of investment from the community.



In partnership with BT, likely to be FTTC only Level 3. Advantages

- Purely a financial arrangement no need for the community to volunteer their time and effort towards digging or splicing fibre, or to maintain the network.
- With an ISP it would cost less for the community to fund rather than a 'Do it alone' scheme.
- Cheapest option.

BI

In partnership with BT, likely to be FTTC only Level 3.

Disadvantages

BT

- You're giving a money donation to an ISP of which you will not see a penny back.
- Likely to have a similar level of download speed from County Broadband before BT upgrades their network to FTTC anyway.
- In comparison to 'Do it alone B4RN', BT will own the network and you will have to pay what they say or what one of their third party sellers will charge e.g. Sky, Talk Talk, or EE. Therefore unlike 'Do it alone', once the new network upgrades are built they will ultimately have control on this matter going forward.
- You are having to give a large multi-billion pound macro monopoly extra money in order for them to invest in your area when they already have the money for it and could of easily done so years and years ago.
- Usually only FTTC and like all monopolies they are unlikely to invest for a very long time in any further upgrades beyond FTTC (such as FTTP) for free unless there is further money being given to them by central government or by ourselves. How do I know this? Past history of their involvement in investing in areas like ours and evidence currently across the country.
- The disadvantages of FTTC compared to FTTP already discussed.









'I won't switch to a provider other than BT or Virgin because I want to keep my home landline phone number, even if their broadband speed is faster.'

Lets clear the air regarding BT's phone line: VoIP is the solution! Phone calls over broadband, yes, it's excellent!

A VoIP (Voice over Internet Protocol) service is a home telephone service that uses your internet connection. The calls are generally cheaper than on a traditional phone service, and without BT you won't need to pay line rental anymore. Even better you should be able to keep your old landline number!

Most decent internet service providers (ISPs) other than BT or Virgin will provide you the support, guidance, and advice necessary to obtain your own third party VoIP service.

Market leaders **Vonage** provide a good, consumer friendly service (starting at **£8pm**), however, there are many alternatives you can find by googling for "VolP service". **County Broadband** are about to launch a VolP service soon (starting at **£8pm**).

The VoIP provider will provide a small device that will plug into your router. Your home phones will be plugged into this in the same way your phones are currently plugged into your master socket. There are different types of boxes but they are all small and unobtrusive.

Someone said Virgin Media were considering us at one point, but nothing heard of since.

- But remember virgin coaxial cables are still COPPER (or a non-fibre metal) between the node and your home, NOT FIBRE OPTIC, therefore still problems of interference, copper is an unreliable medium. This is essentially a similar level of service as FTTC. New copper rather than old copper. Virgin are a level 3 service.
- Virgin Media lying by calling their coax cables 'optical fibre' which simply is false:





Stuart Hatto @stuarthatto · Mar 3 Dear @virginmedia this a coax cable not a fibre optic cable

....

13 5 9 3

Some useful information if you have poor service and you ISP claims otherwise

- If you are receiving poor service you must firstly find out if your connection to your home network is not at fault, if not, then it will be the fault of the ISP and you need to provide evidence of this to convince them.
- When testing your connection, an ISP is more likely to believe and acknowledge you if you connect your computer directly, via an Ethernet cable to your router but even better if you connect directly to your modem i.e. bypassing the router as a source of fault entirely.
- Some methods of testing your internet can simply be to check on Microsoft Windows and go on your home 'network sharing centre' to see where a disconnection begins, inside your home network or outside. For performance related problems: speed tests, ping tests, traceroutes, or if a website is not working try <u>http://www.downforeveryoneorjustme.com/</u>
- Finally as a final resort only:

If your provider fails to repair a fault by when they say they will or you are unhappy with how long it is taking, you should follow their formal complaints procedure. Details should be available through their website or customer services.

If your problem is still unresolved after **eight weeks** you can submit your complaint to an independent Alternative Dispute Resolution (ADR) Scheme.

If your problem cannot be resolved, ask your provider for a 'deadlock' letter so that you can refer your dispute to the relevant ADR scheme directly before the eight week mark.

Ofcom has approved two ADR schemes - CISAS and Ombudsman Services: Communications.

Your provider will tell you which scheme it is a member of, or you can use an <u>ADR checker</u>.

Software, hardware, and websites to test your service: Speed tests, ping tests, internet white boxes, and traceroutes.



Useful websites, information and sources for this presentation.

- <u>http://www.ispreview.co.uk/index.php/2016/02/still-no-united-kingdom-on-world-ultrafast-ftth-broadband-ranking.html</u>
- <u>http://www.ispreview.co.uk/broadband_fibre_optic.php</u>
- <u>http://www.ispreview.co.uk/index.php/2016/02/government-publish-results-from-alternative-uk-rural-broadband-pilots.html</u>
- <u>http://www.ispreview.co.uk/index.php/2015/06/cybermoor-hunt-gbp150k-to-expand-fibre-optic-broadband-in-northumberland.html</u>
- http://b4rn.org.uk/
- <u>http://b4rn.org.uk/3039-2/</u>
- <u>http://www.ispreview.co.uk/index.php/2016/03/virgin-media-adverts-still-cant-tell-copper-coax-fibre-optic.html</u>
- <u>http://consumers.ofcom.org.uk/internet/problems-and-complaints/broadband-landline-faults/</u>