

Tackling the UK's rural mobile coverage problem

From 'Inside-out' to 'Outside-in'

Executive Summary

In the last few years, Mentor has developed a fibre network design – extending Full Fibre schemes to tackle the specific needs of mobile – ‘Mobile-Centric’ Fibre. The design helps MNOs to economically increase capacity for 4G - and lay the foundations for 5G.

Today, we are focused on finding a solution for a longstanding industry problem – poor rural mobile coverage. In much of the rural fringe, mobile coverage is either sparse or absent.

People in the countryside are exasperated but don’t want sympathy – they just want decent broadband and mobile service.

The upcoming 700 MHz spectrum auction is attracting lots of attention. Many seem to think this spectrum is fundamental to solving the rural coverage problem. But would the auction winners use their new spectrum to tackle the rural fringe problem – or to improve their existing 4G coverage in dense urban areas?

The Government may attach coverage obligations to the winners of the 700MHz spectrum, but the Mobile Network Operators (MNOs) would prefer to setup a 4-way towers venture to tackle the problem – without coverage obligations.

Would either of these extremes make a big dent in the 9% of the UK that has no service today?

Doubtful.

Whatever the outcome of these debates, conventional approaches to rolling out network from city centres to rural – using an ‘Inside-out’ approach – will never solve it.

Wouldn’t it be more practical to start building a rural mobile network from the ‘Outside-in’ – just like the Governments’ Full Fibre rural broadband programme¹?

It doesn’t make commercial sense for MNOs to build big-ticket infrastructure in parts of the country where profit will always be elusive. So, what’s the answer?

Mentor proposes another way of reaching the poorly covered areas. The proposal is based on creating a Rural Neutral Host Mobile Network, supported by 7 key principles:

- Focus on delivering the 9% by going ‘Outside-in’, rather than ‘Inside-out’;
- Go Mobile-first to maximise who can use the network;
- Build a Rural Neutral Host Mobile Network to serve all MNO customers, through national roaming (in rural areas only);
- Build a simple, high capacity, data-oriented network using 4G only – and prepare for 5G;
- Allocate 700 MHz and 800/900 MHz spectrum to this rural network to minimise network costs, and maximise coverage and network capacity;
- Use mobile network infrastructure to provide a Fixed Wireless Broadband solution providing good indoor coverage and high capacity – and to support local Full Fibre and Wireless Broadband;
- And, finally, share everything – fibre, ducts, buildings and the many other assets available.

A Rural Neutral Host Mobile Network would need both MNO and financial support from the Government. But we also need creative interventions from the Government to make sure the recipients of any Government investment move to an ‘Outside-in’ rollout approach.

It’s time for bold decisions, if we want to solve this problem. We must break new ground and strike out in new directions. Traditional approaches will come to nothing.

This whitepaper probes the benefits of a Rural Neutral Host Mobile Network and spells out why it could be a victory for all stakeholders – the MNOs, the Government, Ofcom - not to mention the people who have been deprived of a decent mobile and broadband service in their homes for too many years.

¹ <https://www.gov.uk/government/news/200-million-rollout-of-full-fibre-broadband-begins>

1.0

The rural digital divide

Mentor has been working on how to crack the twin challenges of 4G densification and 5G mobilisation in our biggest cities². Just now, we're looking at the other end of the demographic continuum – the extremely poorly served rural fringe.

“Our friends in the countryside don’t want our sympathy, they just want decent Broadband and Mobile service.

David Hilliard, Mentor Founder and CEO

Mobile networks are most profitable in big cities but, as you might imagine, operator profit in rural areas is as elusive as delighted customers.

Ofcom believes 9% of the UK's landmass and 0.5% of the population have no mobile service at all. And many don't have a decent broadband service either.

“A phone call with one bar of signal – standing on a wheelie bin at the end of your garden – doesn’t cut it for today’s smart phone users. What they need is decent 4G coverage indoors and – as 5G rolls out – plenty of that too.

David Hilliard, Mentor Founder and CEO

Over the years, there's been repeated attempts by the Government to fix this problem but they haven't figured it out yet.

In the last 10-15 years, BT “won” almost all of the ‘county-based’ broadband projects to extend coverage from what BT claim was commercially viable for them. Examples include Herefordshire and Gloucestershire³:

In the mobile arena, many radio spectrum auctions have also carried rollout obligations. And while coverage has improved for some people – it hasn't for others and the definition of “coverage” is getting more demanding.

This time around, Ofcom wants to target the rural mobile coverage problem again⁴ - and the latest consultations on 700MHz and 3.4-3.8GHz spectrum signal as much. Ofcom recognises that only 66% of the UK's landmass has good 4G from all 4 MNOs, while 9% has none at all.

So, Ofcom may yet attach heavy rural coverage obligations to this 700MHz spectrum.

² <https://mentoreurope.com/resources/blogs/how-to-increase-4g-capacity-and-build-strong-foundations-for-5g/>

³ https://www.theregister.co.uk/2012/12/18/bt_wins_herefordshire_and_gloucestershire_bduk_contract_but_work_wont_be_complete_until_2016/

⁴ <https://www.ofcom.org.uk/consultations-and-statements/category-1/award-700mhz-3.6-3.8ghz-spectrum>

"This is good in principle," according to Marc Allera⁵ "but won't overcome the barriers that make it so difficult to expand coverage, or, do enough to achieve the 95pc coverage target."

The Government's Future Telecoms Infrastructure Review (FTIR)⁶ provides a context for the latest spectrum auction – where the spectrum on offer includes 3.4 – 3.8GHz, (this is really urban spectrum), and 700MHz, (ideal for rural coverage).

But let's be frank – all 4 mobile operators would

love to get their hands on the 700MHz spectrum. It's extremely valuable and will almost certainly deliver yet another substantial windfall for the Government.

The burning question is: will this spectrum, in the hands of new owners, reduce the 9% of unserved rural areas?

What if the operator with the poorest coverage wins it? Won't that just increase the 66% number – and leave the 9% 'wasteland' untouched?

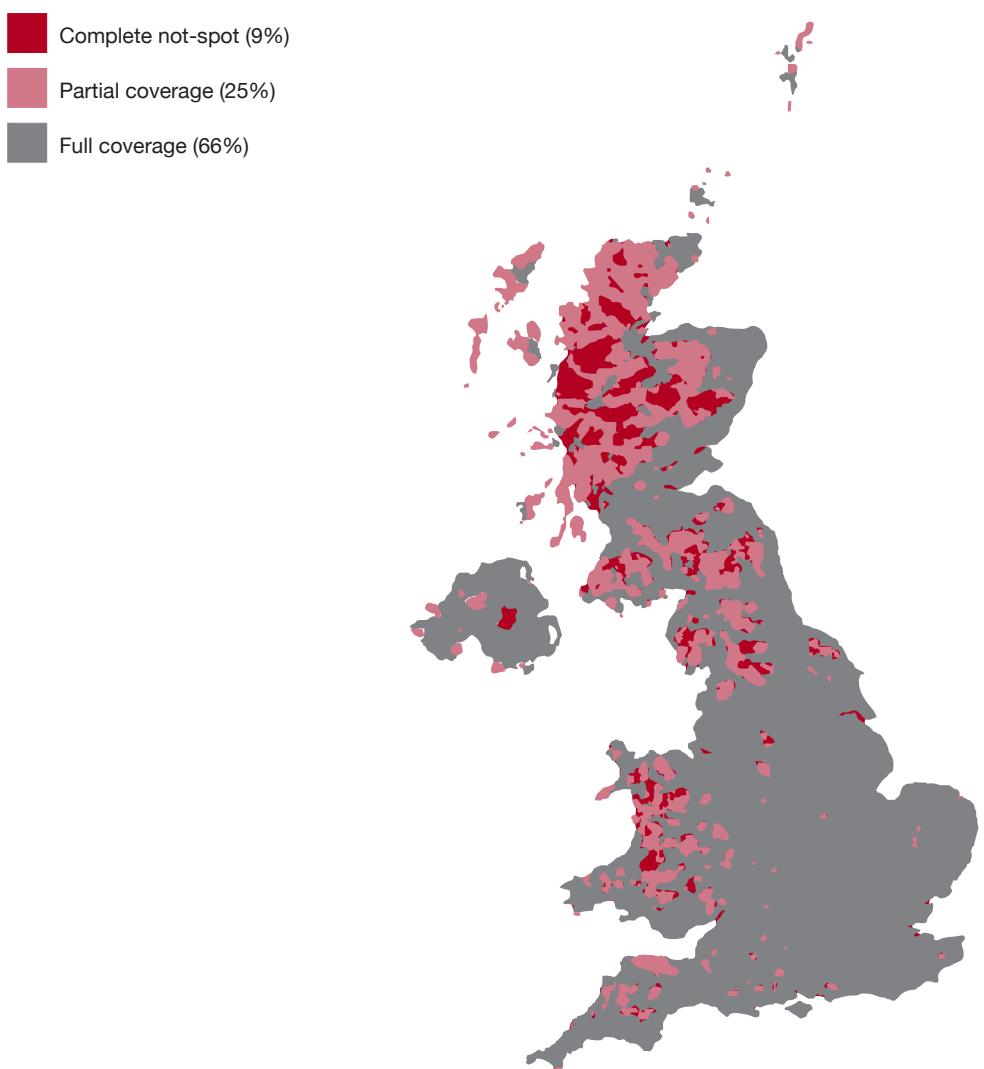


Figure 1. Complete and partial 4G not-spots⁷

⁵ <https://www.telegraph.co.uk/authors/marc-allera/>

⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf

⁷ https://www.ofcom.org.uk/_data/assets/pdf_file/0020/130736/Connected-Nations-2018-main-report.pdf

	Voice Coverage			4G Data Coverage		
	Landmass	Outdoor premises	Indoor premises	Landmass	Outdoor premises	Indoor premises
BT/EE	85.0%	99.4%	95.8%	84.4%	99.1%	88.4%
O2	90.4%	99.8%	99.1%	74.4%	98.9%	94.8%
H3G	84.8%	99.5%	95.9%	78.4%	98.6%	89.4%
Vodafone	90.4%	99.8%	98.6%	78.6%	99.0%	93.7%

Figure 2. Indoor premises voice and 4G data coverage⁸

It's clear BT and Three have the least sub 1GHz spectrum – at 10MHz each – compared to Vodafone and O2, who have nearly 55MHz each.

Naturally, this doesn't mean BT or Three will win the 700 MHz auction, but it does suggest they will have strong appetites to grab the spectrum on offer.

Figure 2 from Ofcom's Connected Nations report tells the story.

Let's imagine, for a moment, BT and Three do win this valuable spectrum. What impact would it have on their coverage?

Both operators would probably focus on rolling it out quickly across their existing network for two practical reasons – to create an extended 4G coverage layer – and improve urban building penetration.

Perfectly logical steps for both companies to take.

With history to guide us, this suggests the spectrum would be deployed from the 'Inside-out' – eventually reaching rural base stations – where it would be used to match the voice landmass coverage of O2 and Vodafone.

Even though Ofcom says landmass coverage stands at 90.4%, the age-old 'Inside-out' approach would have a trivial effect on rural coverage – still leaving the 9% untouched.

Then the ancient rollout pattern repeats itself, once again. And as each wave of new technology is rolled out from the big cities to the countryside, any modest progress made up to that time is then 'reset.'

Everyone knows, the "Digital Divide" places a frustrating brake on economic development in rural areas. It simply blocks residents from experiencing any of the benefits of high-speed Internet access. Past efforts to close the gap have not worked.

While Ofcom's intent is clear enough, it has failed to unscramble the rural issue, time after time. We need a different approach if we want to sidestep another massive let-down.

⁸ https://www.ofcom.org.uk/_data/assets/pdf_file/0020/130736/Connected-Nations-2018-main-report.pdf

2.0

What could make a difference?

“*Discounted spectrum, even making it free, is not going to make solving the “Digital Divide” an economic prospect for any operator. We need to accept this problem needs subsidy and design a solution that gives us the ‘best’ service for the ‘best’ costs; both Capex and Opex...*

David Hilliard, Mentor Founder and CEO

At Mentor, we always follow a “do-the-simple-thing-first” approach.

By that we mean: define the problem, design a straightforward solution for it, and then execute the programme brilliantly to deliver that solution.

In this case, we believe a solution is to build a Rural Neutral Host Mobile Network.

Let's look at some of the detail.

Mentor’s Rural Neutral Host Mobile Network scheme is shaped by 7 key principles:

- 1. Build ‘Outside-In’** – focus on delivering for the 9%. Build coverage without compromise - and definitely not just ‘stretch’ existing coverage.
- 2. Mobile-first** – this maximises network usability, by being available to residents and visitors, indoors and out.
- 3. Rural Neutral Host Mobile Network** – a standalone mobile network will serve all MNO customers through national roaming in rural areas. It sustains consumer choice, maximises potential customer numbers – and minimises MNO operator integration work.
- 4. Focus on 4G, but Prepare for 5G** – avoid investing in legacy mobile technologies. Build a simple, high capacity, data-oriented network using 4G - and prepare for 5G.

5. Sub 1GHz Spectrum – allocate as much as possible to the rural network to get the most out of network capacity - and minimise base station count. This means not just the 700MHz, but unused 800MHz and 900MHz spectrum as well.

6. Enable Fixed Wireless Broadband options
– deploy roof-mounted mobile antennas and in-home Wi-Fi mobile gateways to boost the network capacity and provide deep indoor coverage. Also use the mobile network backhaul infrastructure to light up local Full Fibre and Wireless Broadband programmes.

7. Share everything – make the most of fibre, duct, buildings, power etc, with community Full Fibre schemes and local Government services.

So, what does all this mean?

3.0

What is a Rural Neutral Host Mobile Network?

It's an independent mobile network, designed to provide service in the 9% of the UK currently unserved by the main networks. In essence, it is a "traditional" mobile network but shaped by Mentor's seven principles into an innovative intervention that will solve the 'rural divide', once and for all.

3.1

Build 'Outside-in' rather than 'Inside-out'

Mentor – and the Government – are proposing a radically different approach to solving the rural fringe service problem, by following an 'Outside-in' approach. Instead of trying to incentivise mobile and fixed operators to handle this, build a single Rural Neutral Host Mobile Network to cover the rural areas – by design – and encourage operators and service providers to use it.

But this is easier said than done.

The 9% is not in a conveniently shaped area, where base stations can be planned in a neat grid. The 'not-spots' are heavily fragmented and will need careful planning to unpick these from marginal service areas. In some cases, even asking operators to 'pull back' their coverage so an area can be covered by a base station in a better position.

Changing from 'Inside-out' to 'Outside-in' coverage expansion

Current mobile networks, driven primarily by commercial returns, cover population centres and busy transport routes. Some 'fingers' of coverage extend into rural areas.

Under this model, coverage does gradually increase, but it tends to expand out from existing coverage. We call this an 'Inside-out' approach.

Our contention is that an 'Outside-in' approach should be taken, which focuses on how best to cover the most important not-spots.

3.2

Mobile-first

Let's face it – digging fibre connections to every business and dwelling in the 9% is expensive and time-consuming. And we would still need widespread mobile coverage on top.

Mentor's approach is to roll out 'Mobile-first'. It's faster and cheaper than rolling out Full Fibre everywhere – but offers more limited capacity.

But isn't it better to get some service e.g. 5Mb/s (enough for TV streaming) than possibly wait years for a Gigabit fibre service? Especially when a mobile service could work anywhere in the landscape – not just in a home.

3.3

Rural Neutral Host Mobile Network

A Rural Neutral Host Mobile Network is not a technical innovation. It's a mobile network like any other – the difference is the commercial model it uses. Unlike traditional mobile networks, a Neutral Host has no direct customers. Instead it offers services to other mobile operators through national roaming.

National roaming is just like standard international roaming – except customers are roaming between networks – in the same country.

What's more, we are not blazing a new trail with the integration task between the Rural Neutral Host Mobile Network and the MNOs. Roaming interfaces are well established standards.

Mentor believes this is the simplest way to give people in the rural fringe the best coverage, irrespective of their choice of mobile operator. It also maximises the number of customers that could use the network – and therefore its revenue potential.

There may be genuine concerns from the MNOs about potential customer experience issues with national roaming. But these can be solved. One example might be where customers on the fringes of 2 networks repeatedly flip between them, causing poor service and unnecessary signalling traffic. Transferring some existing operator sites in rural areas to the Neutral Host could minimise/simplify these boundaries.

3.4

4G only, but 5G ready

4G represented an architectural step-change for mobile networks and provides the foundation for 5G. Not just bringing a radically simpler data-centric core structure, but also voice as an application and, credible mobile broadband services.

By focussing on 4G alone, the Rural Neutral Host Mobile Network gets all these benefits – without the complexity of building legacy 2G and 3G networks.

There is one downside – legacy handsets won't work. But, given the pace of 4G Smartphone adoption, we believe this should not exclude any customers from using the service.

In truth, the savings from sidestepping a 2/3G network build would fund a lot of 4G handsets.

3.5

Allocate Rural Spectrum to a single Rural Neutral Host Mobile Network

Mentor proposes earmarking as much sub 1GHz spectrum to this network as possible - to exploit the wide-coverage characteristics of this 4G spectrum. This reduces the mobile base station count – and related costs – to a minimum.

Basically, Ofcom should auction this spectrum at full market value for the 91% of the country already covered, but give the same spectrum to this new rural network for the 9% rural 'not spot' areas.

We suggest giving the Rural Neutral Host Mobile Network 'priority use' of the spectrum over the 91% - and then encourage the MNOs to adjust their coverage plans to resolve any interference and overlap issues.

If auctioned in the conventional way, the 700MHz spectrum will provide 2 well-to-do operators with 21Mb/s capacity per sector, each. Instead, this could be allocated to the Neutral Rural Host Mobile Network, which would give it c42Mb/s sector capacity – and c70Mb/s – if the supplemental downlink (SDL) is used.

But, if most of the usage is indoors, capacity plummets, as the base station has to devote more resources to compensate for poor signal. 5G is not going to dramatically increase capacity here - since its innovations are focused on urban settings.

The bottom line is there's not really enough spectrum to support significant indoor and broadband-like usage.

Adding the 800MHz and 900MHz mobile spectrum to the rural network (plainly unused in the 9%), and leaving some 900MHz for legacy

2G/3G, would give c112Mb/s per sector downlink capacity (and c140Mb/s if the SDL is used).

Deploying rooftop technology with a Wi-Fi in-home mobile home gateway, will provide deep indoor coverage and substantially boost network capacity to c450Mb/s per sector.

Cellular network capacity for rural broadband

Wireless is a great way to reach communities of widely scattered users. And the latest 4G and pre-5G cellular technologies have greatly increased coverage and capacity.

But, the capacity of each base station radio is shared across all active users so, although “peak” data rates can be high, data rates per user are much lower in busy hours. This can be made worse if some users are in poor radio conditions – due to distance, trees/hills, thick building walls or interference.

The radio network must allocate disproportionate radio resources to these users, which dramatically reduces the radio link throughput.

		Spectrum	Spectral Efficiency	Throughput per Radio
Pure Mobile Services	2 Operators, each using half of 700 Band paired spectrum	15 MHz	1.4 bps/Hz	21 Mbps
	2 Operators, each using half of 700 Band including SDL	25 MHz		35 Mbps
	Single Neutral Host using 700 Band paired spectrum	30 MHz		42 Mbps
	Single Neutral Host using 700 Band including SDL	50 MHz		70 Mbps
	Single Neutral Host using 700 Band paired spectrum and 800+900 Bands	80 MHz		112 Mbps
	Single Neutral Host using 700 Band including SDL and 800+900 Bands	100 MHz		140 Mbps
Fixed Wireless & Mobile Services	Single Neutral Host using 700 Band	Fixed Wireless	40 MHz	5 bps/Hz
		Basic Mobile	10 MHz	1.4 bps/Hz
	Single Neutral Host using 700+800+900 Bands	Fixed Wireless	90 MHz	5 bps/Hz
		Basic Mobile	10 MHz	1.4 bps/Hz

Figure 3. Downlink Throughput Capacity for LTE cellular in different scenarios

Figure 3 illustrates downlink throughput capacity, per radio, for LTE cellular in different scenarios:

- For conventional pure mobile, with 2 mobile network operators, each using half of the 700 Band - and for a single Neutral Host using all the 700 Band.
- The benefits of the Neutral Host, using the majority of (rural) spectrum to provide a Fixed Wireless service (external rooftop mounted antenna feeding a mains-powered VoLTE-capable Home Gateway device, acting as an in-home Wi-Fi router). This is complemented by basic mobile service using 2x 10 MHz of paired spectrum.
- Further benefit of the single Neutral Host also using - under a spectrum sharing arrangement - the 800 Band (2x 30 MHz) and part (2x 20 MHz) of the 900 Band, currently licensed to UK mobile operators.

Notes:

- The pink rows in the table include use of the Ofcom 700 Supplemental Downlink (20 MHz). This is not part of a standard LTE Band plan. So, few smartphones will be able to use this spectrum, making its benefit in mobile questionable. Contrast this with the 2x 30 MHz Ofcom paired 700 spectrum which aligns to the standard LTE Band 28.
- For Fixed Wireless, we anticipate a custom-engineered Home Gateway being able to use the Ofcom 700MHz Supplemental Downlink.
- Mobile device spectral efficiency of 1.4 bps/Hz assumes LTE-A and 2x2 MIMO. This is a conservative number - averaging across entire radio cells and including in-building losses, poor gain and limited MIMO discrimination from internal mobile device antennas - and cell edge interference.
- The 5 bps/Hz for Fixed Wireless assumes LTE-A and an antenna with high gain, good 2x2 MIMO discrimination, and directionality reducing interference (between base stations but not between sectors on the same base station). External rooftop mounting is assumed, providing better radio propagation and avoiding in-building losses.
- The Neutral Host's use of 2x 20 MHz of 900 Band leaves 2 x 14.8 MHz of 900 Band for O2 and Vodafone to continue to operate any 2G/3G rural mobile services.
- The external antenna in Fixed Wireless will also benefit coverage. As will the benefit from uplink transmit power - not limited by mobile device battery life conservation.

3.6

Fixed wireless broadband

Economies of scope are fundamental to successful network businesses. Being able to use one set of assets to serve multiple markets is usually good news.

There are nearly 40k rural premises without either mobile or broadband coverage, according to Ofcom. So, this network needs to deliver for both – and it can do that in a number of ways.

Engaging at least one fixed Internet Service Provider (ISP) to deliver a fixed wireless broadband service - for those customers whose best option is to use a mobile service for their broadband - supported by rooftop antennas and Wi-Fi enabled in-home mobile gateways.

This would provide deep indoor coverage and high data speeds through better spectral efficiency.

It's never going to compete with Full Fibre Internet connections. But in areas of very low population density where the cost of Full Fibre could be prohibitive, the alternative of mobile broadband is significantly better than what people have today.

What's more, as the mobile network is built out, new fibre routes will be opened up. It makes sense to use this fibre – not just for mobile mast backhaul – but also to help 'light up' local Full Fibre and Wireless Broadband schemes.

Incidentally, the Government has announced that it has set aside £200m for a Rural Gigabit Connectivity (RGC) Programme⁹ to drive and encourage independent fibre investment in rural areas - including using public buildings as local fibre hubs.

This new fibre should support both rural mobile masts and Full Fibre broadband. Mentor believe the 'Mobile-Centric' Fibre¹⁰ initiative, adjusted for rural, will definitely help.

Transferable experience of working with BT's Duct and Pole (DPA) service¹¹ in the cities will also bring huge benefits.

3.7

Share Everything

The final principle is "sharing". Remote communities know how to help each other and are good at sharing what they have. As the Rural Neutral Host Mobile Network is built, it needs to share whatever it can to help others – ducts, power, buildings, roof tops etc. All these assets will help close the "Digital Divide", one way or another.

⁹ <https://www.ispreview.co.uk/index.php/2019/05/200m-uk-rural-gigabit-broadband-connectivity-programme-starts.html>

¹⁰ <https://mentoreurope.com/resources/mobile-centric-fibre>

¹¹ <https://mentoreurope.com/resources/blogs/can-ofcom-get-its-ducts-in-a-row/>

4.0

So what's in it for me?

That depends on who you are.

4.1

A Rural Customer

If you're a long-suffering resident of the rural fringe in the UK, this could be a massive step forward. Having a decent 4G mobile service – and broadband – for your home or office is very good news. It's not as good as Full Fibre service – but it far outshines the miserable long-line *adsl* performance you've had for years. It also brings fibre that bit nearer to you and your neighbours.

4.2

The Government

If you are in the Government, then this is both good and bad news.

The good news is that your policy to drive Rural Full Fibre from the 'Outside-in' has inspired a similar approach in mobile. What's more, significant synergies can be found between the two programmes. This could be a rare public policy victory – and a chance to resolve this long running sore.

The bad news is you have to find the cash for the subsidy which will inevitably be needed to build and operate the network. At least, in the short and medium term.

You'll also have the unwelcome task of drawing the line on coverage where it's unaffordable to go.

Thinking about the radio plan for the 9%, there will be a spread of base stations – from the most

economically viable to the least. Clearly, we can't afford a base station that only sees a phone once a year from one of the UK's mountain peaks.

4.3

Ofcom

If you are Ofcom, perhaps this is the best news you've had in years. Once you get over the possible "not invented here" effect, the rural problem is solved. And you don't need to find any more money. You can get back to encouraging 5G deployment and refereeing BT. So, perhaps you could take on the task of drawing the line on coverage?

4.4

Mobile Operator

If you are a mobile operator you may think this is a mixed blessing - but we believe it's good news.

The constant challenge of building more and more less economic base stations, could be coming to an end, allowing you to focus on profitable urban coverage and 5G. The market for radio spectrum will then be more rational – economically and strategically – and not distorted by weak attempts to solve the rural fringe.

MNOs may also be worried about the strategic threat of a 5th mobile network – even if it's constrained to the rural areas – and worried about the cost of roaming and customer experience issues.

The recent announcement¹² by all four MNOs, of a conventional 'passive' tower network share,

¹² <https://www.ft.com/content/0c21b3f6-7333-11e9-bf5c-6eeb837566c5>

may give the MNOs some breathing space – but it's unlikely to solve the rural problem. In the wider scheme of things, the MNO concerns are misplaced.

A really helpful international precedent is the Finnish shared network between DNA and Telia Finland – Yhteisverkko¹³. Here, Finland's much larger rural fringe is covered by a Neutral Shared Network but owned by the 2 Finnish operators.

A similar approach to owning the Rural Neutral Host Mobile Network could give the benefits of deep sharing with backhaul, towers, base stations and spectrum – and deals with the strategic concerns about margin being extracted from the ecosystem.

Having this network owned and led by the UK mobile family, would at least ensure the right skills to drive the design and execution of the construction and the smooth running of the network.

Who knows, the operators might choose to extend the sharing even more deeply into the 91% to improve service and economics for everyone.

International experience of Rural Neutral Host Mobile Network - learning from Yhteisverkko¹⁴

The Finnish Shared Network is a joint operation by DNA and Telia Finland, responsible for developing and maintaining a shared mobile network for Northern and Eastern Finland. The 2G, 3G and 4G networks cover half of Finland's total geographical area and serve approximately 15 per cent of the population.

Benefits:

- Improved coverage for mobile broadband and calls;
- Improved mobile broadband throughput speeds and connection quality;
- More extensive, higher quality and faster services for rural and remote areas;
- Providing latest generation LTE Advanced radio network that also supports older terminals (GSM, 3G, 4G);
- Increasing the number of base stations (rooftop and tower sites are combined in the shared network area);
- Doubling connection speeds in rural and remote areas (utilising combined DNA and Telia spectrum capacity);
- Faster rates of mobile network upgrades, delivering services across the network more quickly and cost-effectively.

¹³ <http://yhteisverkko.fi/en/>

¹⁴ <http://yhteisverkko.fi/en/>

Halfway measures belong to yesterday

We have a great opportunity to finally solve the rural mobile coverage problem. It shouldn't be ignored any longer. The time to grasp the nettle and act is now.

Nobody is saying it won't be hard, and tough decisions are required. It demands a change in approach, some fresh thinking – and an injection of pace and momentum. Plans that tinker around the edges of the problem and halfway measures belong to yesterday.

This is an opportunity for the Government to get the structure of the 700MHz spectrum auction right – for the MNOs to break new ground – and for the industry to get a sensible level of financial investment in place to ‘do the right thing’.

The stage is then set for developing a convincing plan to actually get the job done.

The Rural Neutral Host Mobile Network is a radical departure from where we are today – and offers considerable benefits to people now starved of mobile coverage.

It makes little sense to continue following a bankrupt recipe.



Whether we like it or not – the future is about mobile. 5G is a disruptive technology, and will open up new markets, change existing markets – and change the way your company goes to market.

How well prepared are you to tackle the rural mobile coverage problem in the UK to eliminate the “Digital Divide”?

There is nothing ‘business-as-usual’ about programmes like that.

Mentor has three solid decades of experience in running complex business-critical programmes in the UK and European Telecoms markets.

Today, we are helping mobile operators, fibre providers, infrastructure players and the UK Government to figure out how to respond to the challenges of 4G densification and the move to 5G.

With our strong industry relationships and independence – combined with deep design, operational and commercial experience – Mentor is the natural partner to help you develop compelling multi-party business cases for mobile networks; supporting your internal teams; and, helping you get the job done faster than you might think.

Why roll the dice? Get in touch with us now and we can show you how.

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