

Robert Kenny

UK fixed broadband, 2025

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About the author

Rob Kenny has extensive experience on issues of broadband strategy, policy and regulation, and has undertaken numerous projects in this area for telcos, investors, trade bodies, regulators and governments. He was an advisor to Malcolm Turnbull, then Australia's Minister for Communications. Previously he headed strategic planning for Hongkong Telecom, and corporate development for Level 3.

Disclaimer

The opinions offered herein are purely those of the author. They do not necessarily represent the views of all Communications Chambers members.

Introduction

This paper considers what the UK fixed broadband market may look like in 2025. Over the last twenty years, this market has gradually been becoming simpler. There has been a long wave of consolidation; more recently a shift to very widespread FTTC, providing uniform offers to most of the country; and improved speeds from Virgin in their coverage area.

However, we are in a period of transition, with levels of fixed network investment not seen since the roll-out of the cable networks in the '90s. Further, that investment is not just by the traditional players. Numerous alt-nets are deploying fibre, with different routes to market and target customers. Thus we are seeing both a network change and a refragmentation. The market will become both more complex and more chaotic (in the sense of less predictable).

This paper sets out what we can expect in five years, and how market dynamics are likely to change.

Recent history

Until recently there has been broad homogeneity of fixed broadband across most of country (with some important exceptions, notably areas lacking any form of superfast).

BT, Sky, TalkTalk and Vodafone have offered national service, with broadly similar broadband products, albeit with different bundled TV offers available. Virgin is also available in most of the country, and does offer a distinct set of broadband products based on its cable network. However, its regional presence has not resulted in regionalised approaches by the other broadband providers. In part this is because flat national pricing by Openreach means that the retail providers riding on its network have limited room to manoeuvre with (say) regionalised pricing.

Openreach's flat national pricing stems in part from a national regulatory approach. Ofcom applied a nationwide cap on pricing, and while Openreach could have chosen to discount below this locally, it has not chosen to do so. (Ofcom will apply a regional approach for FTTP, which we discuss further below).

Government intervention, in the form of subsidies for Openreach's FTTC deployment, has been explicitly aimed at reducing regional variation, bringing superfast broadband to less dense areas to match that available in commercially viable areas.

What's happening now?

However, this relatively homogeneous picture is breaking down, with a surge of investment by a diverse group of carriers, including:

- Partial roll-out of FTTP by Openreach. OR has passed 3m premises, with a long term target of 20m¹ (out of a UK total of 30.5m)²
- A network upgrade by Virgin, which expects by the end of 2021 to make gigabit speeds available to its 16m homes passed. (It is also expanding its network, passing almost 0.5m premises in the last year)³
- A host of alt-nets, with a range of very different business plans (discussed further below).

Together, these players have increased FTTP coverage to 3.8m premises as of January 2020 (up from 2.2m a year prior).⁴ The government's ambition is that by 2025 all premises have access to gigabit broadband, via FTTP, Virgin's cable network or otherwise.

While alt-nets have been in the market for a while, their significance has increased recently. Multiple new entrants have joined longer-standing players such as CityFibre, Hyperoptic and Gigaclear. This has been supported by a surge of investor interest, both private equity and debt, which means capital is now readily available on favourable terms. (Given the long payback-period for FTTP investment, a low cost of capital is key for a viable business case).

These alt-nets vary on several dimensions. They:

- Have different target markets, such as:
 - Rural communities (e.g. Gigaclear), seeking areas with only poor existing broadband
 - Blocks of flats (e.g. Hyperoptic), with a very low cost per premise
 - General urban (e.g. CityFibre), seeking a low cost per premise backed by local government relationships
- May be more residential or business focused
- May have a wholesale or retail business model
- Have different geographic scope (national, regional or local)
- May be commercially driven, or may be designed to support local communities

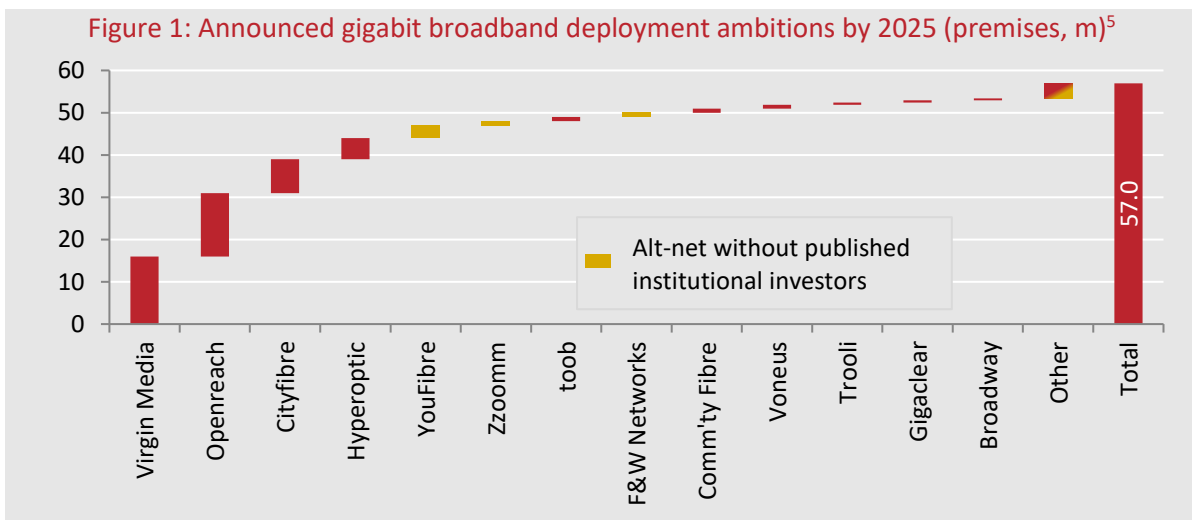
¹ BT, *Results for the three months to 30 June 2020*, 31 July 2020

² Ofcom, *Promoting investment and competition in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26 - Annexes 1-23 of 24*, 8 January 2020

³ Liberty Global, *Q2 2020 Fixed Income Release*, 3 August 2020

⁴ Ofcom, *Connected Nations update: Spring 2020 dashboard*, 13 May 2020

The declared aspirations for premises passed with gigabit broadband, across the major players and the alt-nets, totals 57m by 2025 (Figure 1). This would imply roughly two networks per premise across the UK, and there is likely to be substantial overlap between Openreach and Virgin. However some areas may see three or more, and some one or even none. Further, the aspirations are unlikely all to be achieved – amongst other challenges, some players are yet to secure significant funding, for example. That said, this figure excludes a long tail of players who have not publicly quantified their deployment plans.



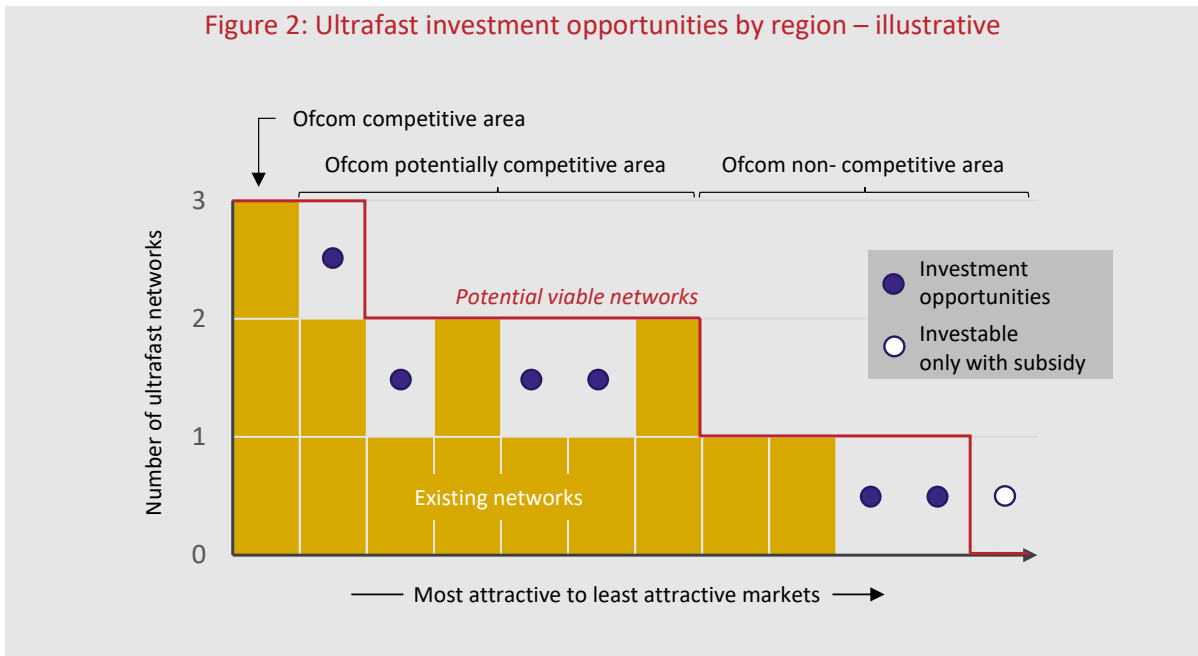
Ofcom, in response to these shifts in the market (and to encourage them) is moving away from national regulation of Openreach to a regionalised approach. In ‘competitive areas’ – roughly, those with three ultrafast networks – Ofcom would look to deregulate. In ‘non-competitive areas’ (those with only Openreach) it will allow wholesale prices based on a regulatory-asset-base approach, to support FTTP deployment in these more challenging areas. In the remaining ‘potentially competitive areas’ it will continue to regulate wholesale prices, albeit allowing some increase.

Both the patterns of investment and Ofcom’s regulatory approach recognise that the business case for FTTP varies significantly by geography. Consequently, while some areas may feasibly support multiple competing ultrafast networks, others may support none at all.

Figure 2 provides an illustration of this dynamic. The red line represents the ‘boundary’ of the number of viable ultrafast networks

⁵ Deployment plans from ISP Review, *Summary of Full Fibre Build Progress Across UK Broadband ISPs*, 14 April 2020. Information on institutional investors from company websites and press reports

for each region, driven by their geography, prosperity and so on. (Note that a de-facto monopoly in a less attractive region may actually be more profitable than being one of three players in a more attractive region).



Networks beyond the number of viable networks are likely to be unprofitable (and indeed may cause existing networks in that region to become unprofitable also, by dividing the market). Gold blocks represent existing networks. In some regions these may occupy all the 'slots' below the boundary line, but in other regions there may be a gap. These gaps (marked with blue dots) represent potential opportunities for profitable investment in a new ultrafast network. These gaps are finite, and hence the race by those deploying ultrafast to plant flags to claim the gaps each is interested in.

In the least attractive markets, even one ultrafast network may be commercially unviable. Here, public subsidy will be necessary to secure deployment, and the government has proposed £5bn of funding. It plans to solicit bids for 'bundles' of approximately 3,000 premises each, a relatively low figure designed to give alt-nets the chance to bid successfully.⁶

Aside from the direct cash subsidy, Ofcom is providing a cross-subsidy by allowing Openreach to increase its charges for copper prices in 'non competitive' areas, using the regulatory asset based approach. Effectively this moves the boundary for one commercial

⁶ DCMS, *Outside In Market Engagement Event*, 23 June, 2020

ultrafast network being viable to the right, reducing the number of areas that require direct cash.

A challenge for commercial players, Ofcom and government is that the boundary (in all types of region) is uncertain.⁷ At its heart, it represents a forecast – how much will it cost to deploy a network in that location, how much share will it gain, and what might pricing be. Even rigorous forecasts can be wrong, and hence unprofitable networks may be deployed, Ofcom may miscategorise areas, and the government may provide unnecessary subsidy.

⁷ An exception is Ofcom's designation of competitive areas, which happens after the fact once three networks have been deployed

How might things look in 2025?

Given all the above, how might fixed broadband look in 2025?

A mosaic network

As we have noted, homogeneity is breaking down. Consumers are likely to face very different choices depending on where they live. In some areas, they may have only one ultrafast option – for example, in a rural area where a retailer alt-net has deployed FTTP and Openreach has chosen not to overbuild. Conversely, there may be three networks (Openreach, Virgin and an alt-net, say) with multiple ISPs offering service. Just considering the presence of absence of Openreach FTTP and Virgin and the three possibilities for alt-nets (not present, wholesale provider and retail provider) we arrive at 12 different possible scenarios, compared to the two that have previously applied across much of the UK.

For operators, this means that there will be very different degrees of competition. In some areas certain operators - not necessarily Openreach - may have a de facto monopoly, in others there may be fierce, even desperate competition (as we discuss further below).

As a related issue, we may see the erosion of national pricing. Alt-nets in particular will price according to the economics and competition of their own particular footprint. The traditional operators have strong incentives to maintain national pricing (though there have been some exceptions)⁸. It is simpler, facilitates marketing and so on. There may also be reputational risk for a national player to charge some customers more than others. However, ‘mosaic competition’ may mean they feel greater need to respond to specific local threats. Such regionalised pricing is already common in the US, for example.

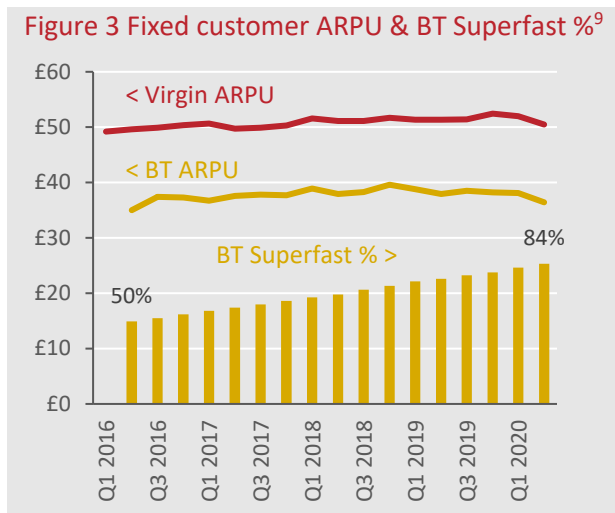
⁸ For example, see ¶4.127 of Ofcom, *Wholesale Broadband Access Market Review 2018*, 31 July 2018

ARPU flat or down

Past stability of ARPU

ARPU is likely to be little changed from today. Certainly in the past, increases in speeds for consumers has not brought in any greater revenue for providers, with per-service price declines offsetting any price premia from consumer upgrades. Such price declines are already evident for some alt-nets. Zoomm recently dropped the price of its flagship 2Gbps product by 48%, for instance.¹⁰

Figure 3 shows the fixed customer ARPU for BT Consumer and Virgin Media (including TV and voice services). Both have changed little over the last four years, even as broadband speeds have increased - in the same period the percentage of BT customers taking superfast or ultrafast services has risen from 50% to 84%, for example.



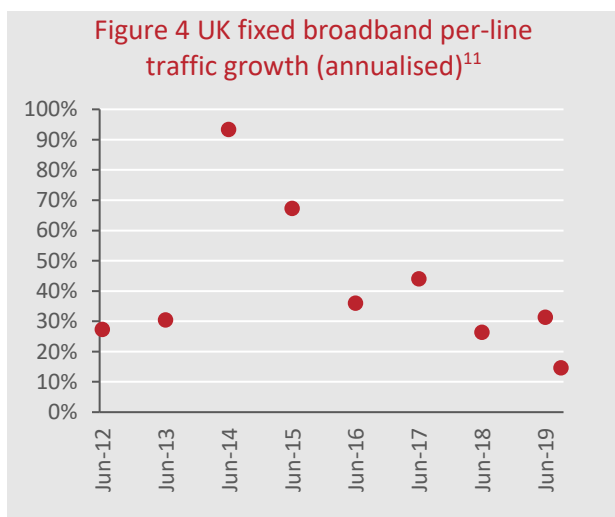
None of this means increased speeds have had no benefit to operators. In an 'arms race' they are likely necessary to prevent churn, and they may have offset declining revenues associated with voice or TV products. However, they are certainly not a guarantee of revenue growth. Consumers may have a mental budget for fixed communications services that it is hard to exceed.

Future downward pressures

Persuading users to pay for higher speeds may also grow more difficult if traffic growth continues on its downward trend (Figure 4).¹²

Further, the changing competitive landscape is likely to make it harder to sustain or grow ARPU. More parallel networks will increase competition.

Moreover, broadband prices have to date been partially underpinned by Openreach's wholesale prices. If - say - half an operator's income is paid to Openreach, and another 20% on other direct cost of sales, then a 10%



⁹ BT and Virgin Media financial reports. Virgin figures are slightly affected by the inclusion of its Irish operations

¹⁰ Zoomm, [Zoomm Smashes Barriers to Customers Need for Speed With New Prices for Everyone](#), 1 July 2020

¹¹ Ofcom [Connected Nations](#) and [Infrastructure Reports](#)

¹² There will of course be a short term surge of traffic associated with COVID-19

price cut sacrifices 33.3% of that operator's margin.¹³ However, if the operator is an alt-net with its own network and thus has no need to pay Openreach, then the same 10% price cut sacrifices only 12.5% of its margin. Thus the alt-net may be much more optimistic about winning enough new customers with the price cut to offset the loss of revenue from existing customers.

In the event of fierce competition between players with very low marginal costs, prices can drop dramatically. For instance, after the rush of investment into subsea fibre during the internet bubble, a number of players were holding significant excess capacity. They priced aggressively to unload it, and to ensure cashflow to service their debt. As a result, the cost of a trans-Atlantic STM1 25 year IRU¹⁴ fell from \$12m in 1998 to \$450,000 in 2001.¹⁵ (Of course, declines this severe are unlikely for fixed broadband).

So low marginal costs and increased competition will put downward pressure on ARPU.

Future upward pressures

However, new networks will bring extra capex and opex into the industry, which would suggest higher ARPUs will be required to cover the industry's costs. Since costs are primarily driven by making a network available, not the number of customers on that network, if two similar networks split the customers between them, then each will need almost twice the ARPU to cover their costs that a monopoly network would have needed.¹⁶ 'Need' is not the same as 'get', of course, but in some circumstances all this extra cost brought into the industry may lead to operators pursuing comfortable rather than cut-throat competition.

From the regulator's perspective, prices that would provide no more than a fair return to two or more competitive operators would represent prices that would provide a monopolist supernormal returns (and hence could be regulated downward).

¹³ The gross margin beforehand is 30%, after the 50% paid to Openreach and the 20% for other cost of sales

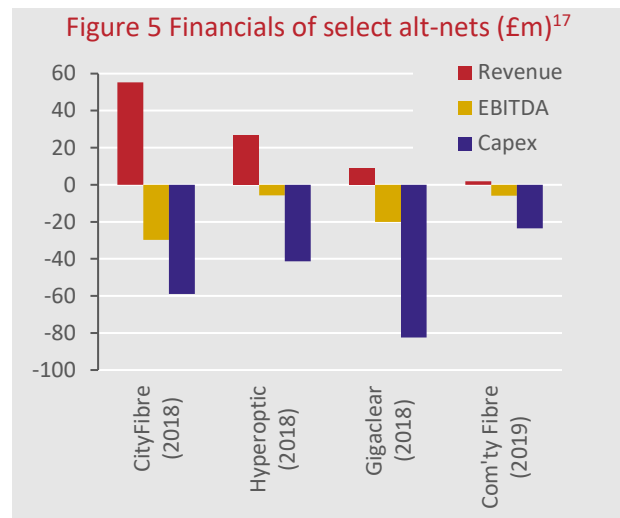
¹⁴ An STM-1 is 155 Mbps of capacity. An IRU - indefeasible right of use – is a long term right to use the amount of capacity in question

¹⁵ Band-X, *Trends in Global Capacity Availability and Trading*, June 2001

¹⁶ Setting aside the efficiency benefits that competition might bring

A different landscape for alt-nets

A final feature of the 2025 market is likely to be a very different landscape for alt-nets. Thus far the alt-nets have been in investment mode, spending significantly to build networks that they hope will generate positive cashflows later. Based on latest available figures (generally for 2018), not only are they not generally cashflow positive, they are not even generating positive EBITDA¹⁸ (Figure 5). They have some distance to travel before they can be cash generating, even if they were to cease network investment.



Spend to date has been funded in part by readily available and relatively cheap debt and equity. CityFibre, for instance, raised a £73m bank loan with interest of 3.48% in 2018.¹⁹ The availability of this finance is supported by optimism about the prospects for FTTP to generate steady cashflows in the future.

However, given the aggregate ambition of the various alt-nets, it seems likely that expectations regarding deployment, penetration or pricing may – for some companies – be disappointed. Some alt-net business plans embed some very ambitious assumptions, and these may be all the harder to meet given the fierce competition for people to plan and deploy networks. (Staffing has been made more challenging by Brexit, since workers from the EU have played a significant role in UK network deployment, but have been returning home).

This sets up a situation where some of the alt-nets may face challenges in refinancing debt (though as of now, many are primarily financed by equity). Come 2025, there may be fewer attractive opportunities for growth, and so borrowers will be much more dependent on the cash generation of their existing assets to support debt. They may also be facing challenges meeting their debt covenants. The wider financing environment might also be less favourable than today.

¹⁷ Company accounts

¹⁸ Earnings before interest, tax, depreciation and amortisation – a measure that excludes the costs of current or past investment

¹⁹ Annual report of Connect Infrastructure Topco, the holding company for CityFibre. The company subsequently arranged a £1.12bn debt package

A situation where some alt-nets struggle would not be unprecedented. The roll-out of cable TV networks in the UK ended in a string of write-offs and distress sales. For example, in 2002 alone Telewest wrote off a quarter of the value of its fixed assets.²⁰ Microsoft spent £1.58bn to buy a 24% stake in the company in 2000, and sold it three years later for £3m.²¹

This is not to suggest that all or even most alt-nets are likely to find themselves in difficulty. However, it seems plausible that by 2025 a significant minority may be facing challenges.

²⁰ An £841m write-down on an opening fixed asset balance of £3,473. Telewest, *Form 20-F*, 30 June 2003

²¹ The Guardian, *Microsoft ditches cable investment*, 28 May 2003

What issues will stakeholders be facing?

Finally, we turn to some of the key issues and decisions stakeholders may be facing in 2025

Openreach

Further deployment of FTTP?

OR has an ambition to pass 15m premises by 2025 (roughly half the UK total), and a further 5m thereafter. Thus looking beyond 2025, it will have to consider whether and where to further extend its network, and in particular whether to overbuild existing FTTP deployments by alt-nets.

Such overbuild may have a challenging business case. For example, the local alt-net might have a contractual grip on much of the available wholesale business. The most likely instance is CityFibre, which already has wholesale agreements with TalkTalk and Vodafone, and Sky is anticipated as another potential partner.²² In a scenario where CityFibre had secured these three ISPs, OR would need to recover the cost of its own FTTP deployment almost entirely from the BT consumer business. Since BT serves only a third of retail broadband customers (and appreciably less in Virgin areas), this may represent insufficient revenue in many markets.

Another example of a challenging overbuild case would be where a retail alt-net such as Hyperoptic had won significant customers with aggressive pricing. Even if Openreach matched Hyperoptic's speed, what would be the trigger for Hyperoptic's end users to pay more to switch provider to one of Openreach's ISP-customers?

By 2025, BT expects it will have completed PSTN switch off (migrating voice services to IP), and thus – with Ofcom's permission - will be in a position to start copper retirement. But this assumes there is an OR FTTP network to transition customers to. If OR does not deploy FTTP in a given area, will it be obliged to keep copper running by Ofcom, serving a diminishing number of customers?

Acquisition of alt-nets

One way for OR to address gaps in its FTTP coverage would be to acquire wholesale alt-nets operating in those gaps. This would improve its coverage and might make more sense than overbuild (which would divide available revenue across more networks). It

²² ISPreview, [Cityfibre Finish FibreNation Buy – Target 8 Million FTTP Homes](#), 27 March 2020

would also support copper retirement. However, there would be various challenges, not least navigating the overlap of the regulatory obligations of Openreach and the contractual obligations of the alt-net. For example, the alt-net may be committed to lower prices than Openreach. If OR continued these lower prices in the alt-net's coverage area, would it be in breach of Ofcom's prohibition of geographic discounts?²³

Ironically, to build OR's FTTP coverage through acquisition, it might be simpler for BT Consumer to buy retail alt-nets, and then to sell the network component to OR, with access provided back to BT Consumer and other ISPs on OR's standard terms. (Another option would be to become a wholesale customer of alt-nets, which we discuss below).

Regardless of whether Openreach or BT Consumer was the vehicle, the CMA would also need to be persuaded. *If* it was convinced that the alternative was closure of the relevant area of OR's copper network, then it might be amenable. But the CMA's default counterfactual is likely to be that the copper would continue, and thus the merger would represent a loss of competition, even if not between directly equivalent networks. The CMA might also precondition acquisition of retail alt-nets on a full separation of BT.

Pricing in competitive areas

Openreach will also need to consider how to price in areas Ofcom has deemed competitive. In such areas OR will be in a position to cut its tariffs locally, and may wish to do so for two reasons.

First, a price cut would enable OR's customers to compete more aggressively with the other two (or more) networks in that region.

Second, a price cut may enable BT to win back wholesale customers such as Sky and TalkTalk which had transitioned to another network. That said, the relevant wholesale agreements are likely to be exclusive and have long terms, so winning back such customers may only be possible at certain points in time.

Pricing in potentially competitive areas

Openreach might also wish to price more aggressively in the 'potentially competitive' areas where it is already facing competition from another FTTP network, but Ofcom has prohibited this to protect the new entrants. However, this leaves open the option that Openreach chooses to lower its FTTP tariffs across *all* potentially

²³ Ofcom, *Promoting investment and competition in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26 - Annexes 1-23 of 24*, 28 February 2020

competitive areas. The question here is whether the share gain (or protection) in areas with active alt-nets offsets the revenue sacrificed in areas with less competition. This is one way in which the alt-nets' fates are linked. Such a price cut is more likely if there is widespread deployment by alt-nets, rather than a scattering of more local deployments.

Another pricing option for OR is volume discounts (which it already offers). By reducing the cost to use OR for an incremental end-user, such discounts have the potential to make it logical for ISPs to use OR even in regions where there is a good offer available from an alt-net (while not eroding OR's base revenue). However, such discount schemes are challenging and complex to calibrate accurately,²⁴ and this complexity may reduce their effectiveness in changing ISP behaviour.

BT Consumer

Areas without OR FTTP

One of the key decisions facing BT Consumer will be whether to continue to rely on Openreach for its fixed broadband services in areas without OR FTTP, but with rival FTTP. In such areas, BT Consumer will be at a real disadvantage if it continues to rely on OR.

It will have two alternatives. If the local ultrafast providers were willing to wholesale, BT could transfer its retail business across, and thus be on a level footing with the other ISPs. (If Ofcom found such providers to have local SMP²⁵, it might impose a requirement to wholesale).

This would mean a loss of revenue for OR. However, if the revenue from BT Consumer was insufficient to justify continued operation of the local copper, it might be preferable from OR's perspective for BT Consumer to switch away, which might allow copper switch off.

The other alternative for BT Consumer would be to serve customers using the EE network. Augmenting capacity on a 5G network might represent a low-marginal-cost way to serve some fixed broadband customers.

In some other countries, wireless now represents a significant percentage of total internet traffic – 34% in Austria, for example, compared to 3% in the UK²⁶ - partially due to wireless substitution

²⁴ For an example of the complexity, see Openreach's [GEA Volume Agreement](#) offer

²⁵ Significant market power – a determination of SMP is the basis for Ofcom's current regulation of Openreach

²⁶ Tefficient, [Is mobile eating fixed's lunch?](#), 10 July 2020

for fixed connections. In the UK, attractive wholesale broadband from OR with sufficient bandwidth has limited the opportunity for such substitution to date. But if OR becomes uncompetitive in certain locations, this could change.

A partial precedent is Spark, the former retail arm of Telecom New Zealand, now an independent company. Over the last four years it has grown the share of its broadband connections using wireless from near-zero to 20% in 2019.²⁷ (This is only a partial precedent since Spark and Chorus – the Openreach equivalent – are fully separated, whereas OR and BT Consumer both remain part of BT).

Areas with OR FTTP

In areas where BT Consumer can make use of OR FTTP, it will be on an even footing with its competitors as far as product goes. However, it may be disadvantaged as regards cost. In ‘potentially competitive’ areas, OR will charge BT Consumer a standard national price for FTTP services, and this may not allow it to match the offers of rival retail alt-nets, or ISPs making use of a wholesale alt-net offer.

For example, even today Hyperoptic is offering a 500 Mbps product for £39, or £32.50 excluding VAT.²⁸ This compares to Openreach’s charge of £27.28 for its up to 550 Mbps product.²⁹ If BT Consumer were to match Hyperoptic’s price, it would have just £5.22 per month to cover capacity costs, customer acquisition costs, customer care, router costs and so on, even before allowing for any profit. Further, as we have discussed above, alt-net pricing may grow more aggressive over time.

BT has never played the role of price leader in the market, but a position of growing cost disadvantage will increase pressure on it to offer non-price value to consumers.

Sky and TalkTalk

Sky and TalkTalk face some of the same issues as BT Consumer, particularly in areas where alt-net competition is from a retail-focused player. (TalkTalk may be particularly challenged, given that its position as a low cost provider may be challenged. By contrast, alt-nets are unlikely to match Sky’s media offer).

²⁷ Spark New Zealand, *H1 FY20 Results summary*, 19 February 2020

²⁸ £50 after initial commitment of 12 months. Hyperoptic, *Pick your perfect full fibre package* [accessed 18 August 2020]

²⁹ Openreach, *NGA2018/19 GEA-FTTP 115/20, 220/30, 550/75 & 1000/115 Mbps launch date and price notification*, 18 September 2019

Sky and TalkTalk as customers of alt-nets

However, in areas with a wholesale alt-net, Sky and TalkTalk have the key advantage over BT of being in a ready position to switch to that wholesale provider. Further, their existing base of end users makes them a highly attractive customer to alt-nets pursuing a wholesale strategy. For an alt-net to secure either as a customer (but Sky in particular given its larger share) significantly derisks its deployment, since it locks in substantial revenue.

By 2025 both Sky and TalkTalk are likely to be using a combination of Openreach and alt-nets. (It's worth noting that to date they have only retailed OR FTTP on a limited basis, but we assume that by 2025 this will be widespread). Their leverage will generally allow them to secure better tariffs from alt-nets than those from Openreach. However, they will be expected to make long term commitments. The term of the TalkTalk/CityFibre agreement (the main such agreement to date in the public domain) has not been disclosed. However, the earlier Vodafone/CityFibre agreement had a term of ten years.³⁰

One caution for Sky and TalkTalk in reaching such agreements with alt-nets is that there is significant systems integration costs. Each new supplier requires integration of processes for customer additions, fault reporting, customer termination and so on. Given that this is a fixed cost, it is only worthwhile for larger suppliers.

Both because of the challenge represented by retail alt-nets and because of the benefits of larger suppliers, Sky and TalkTalk may be pushing for consolidation of alt-nets around a wholesale strategy.

Another possibility would be the emergence of an integrator/aggregator, acting as a 'layer' between alt-nets and the ISPs, and providing a standardised systems interface, perhaps based on the de facto Openreach standard. Particularly for alt-nets in receipt of public subsidy (which carries an obligation for a wholesale offer) this might be welcome to avoid needing to build such interfaces in-house.

Sky and TalkTalk's attitude to Openreach

Sky and TalkTalk will also have an interest in supporting Openreach FTTP overbuild even where they are using an alt-net. This is because of the need to renegotiate the alt-net wholesale agreements towards the end of their term.

³⁰ CityFibre, [*Vodafone and CityFibre bring gigabit-speed fibre to the UK*](#), 9 November 2017

These negotiations will have high stakes. For the alt-net to lose a customer such as Sky is likely to be very damaging to its revenues. However, Sky and TalkTalk may be entirely dependent on the alt-net to serve its customers if there is no alternative from Openreach FTTP.

Further, while Sky and TalkTalk are similarly dependent on Openreach today, that relationship is significantly protected by regulation. The renewal of the alt-net relationship will depend much more on mutual leverage (unless Ofcom has found the alt-net to have SMP and regulated the alt-net's wholesale offer). In this context, Sky and TalkTalk will wish to have at least a credible threat of taking their business elsewhere.

It is unlikely that any such renegotiations will be under way by 2025, but the ISPs may be beginning to prepare the ground for them. If a contract was ending in 2030 (say), and the ISPs wished to explore providing commitments to Openreach to transition customers at that date to OR FTTP deployed for that purpose, then OR would need plenty of lead time to put that fibre in place.

The potential for such transitions will be greatly affected by the details of the alt-net wholesale agreement. In common with many telecoms investments, much of the value of green-field FTTP businesses is in their terminal value.³¹ However, for wholesale alt-nets the terminal value in turn depends very much on the prospects for and pricing of the renewed wholesale agreement. Thus transition issues are critical terms in agreements currently being negotiated.

Virgin

Of all the commercial players, Virgin perhaps has most room to manoeuvre. It operates its own network and so has low marginal costs; it has been relatively inexpensive to upgrade that network to gigabit speeds, plus it has existing cashflows, so its debt burden is less likely to be problematic; and it can offer bundled TV and mobile services (the latter supported by its merger with O₂).

However, Virgin will face some significant challenges. First, to date it has generally been the only retail player with direct access to low marginal cost for broadband (though it has not used this advantage aggressively, instead choosing to compete through higher speeds). Consequently Openreach pricing has set a floor for the market, since all other major players have needed to add their retail costs onto that base. However, by 2025 Virgin will have lost this unique advantage.

³¹ Future cashflows beyond an explicitly modelled period – say from year 11 or year 16 onwards

Second, Virgin has a historic speed advantage – in most of the country it was the only operator to offer 100s of Mbps. As FTTP becomes widespread, it will be one of many operators offering such speeds.

Thus in another five years Virgin may be leaning more heavily on its bundled products to provide differentiation.

Another question for Virgin is whether Ofcom revisits the idea of a wholesale obligation on the carrier. Markets such as the Netherlands and Belgium have already moved to wholesale remedies applied to cable operators.

Some aspects of the likely situation in 2025 would argue against – Virgin’s unique speed advantage will be gone, and there will be more parallel networks. That said, Ofcom may by then have taken the step of imposing wholesale regulation on alt-nets, and having done so for these non-incumbents, a similar remedy applied to Virgin may seem less dramatic. (Ofcom’s framework of remedies based on SMP is not incumbent-specific, but in practice has only been applied to BT and KCOM).

Fear of a general wholesale obligation may discourage Virgin from acquiring wholesale alt-nets. (Once it was already wholesaling in part, a comprehensive obligation might look like a smaller step to Ofcom). However, Virgin might be more interested in acquiring retail alt-nets to extend its footprint. This would be unlikely to raise competition concerns.

Alt-nets

By 2025, deployment is likely to have slowed significantly for most alt-nets. Commercially attractive locations may well have been largely captured by this point, after widespread deployment by both Openreach and alt-nets.

Wholesale alt-nets

That said, there may be specific niches that remain attractive. For instance, in locations with lower costs to deploy, the prohibition on geographic discounts for Openreach means that OR (through no fault of its own) is ‘overcharging’ ISPs. A wholesale alt-net may find it economic to overbuild OR, if it can secure the business of (say) Sky and TalkTalk by undercutting OR’s tariffs locally. This is all the more plausible if the costs of FTTP deployment continue to decline.

Another growth opportunity may be to win BT Consumer as a customer. As we have noted, BT Consumer may have interest in

making use of wholesale alt-nets where OR FTTP is *not* available. For the alt-net concerned, this revenue would be almost pure margin, giving them strong incentives to pursue it. (Though their pricing flexibility may be limited by MFN³² clauses with their existing ISP customers).

Retail alt-nets

The health of retail alt-nets in 2025 is likely to be highly situational. Some (such as Hyperoptic) are targeting dense urban areas, where they are able to offer both higher speeds than those currently available from BT and other ISPs, and lower prices. For these operators, overbuild undercuts part of their proposition (speed), but may leave their price advantage intact, unless they happen to operate in an area Ofcom declares competitive and OR then chooses to offer local discounts. (The prospect of the area being declared competitive is reduced if Virgin is not present, since it is the prime candidate to be the third ultrafast network – an additional reason for alt-nets to deploy in non-Virgin areas).

Others (such as Gigaclear) target more remote areas, where their proposition is based on a unique offer of faster broadband, albeit at prices above those BT is charging for superfast elsewhere. Such areas may be less likely to support overbuild by OR, but this depends on the strength of the alt-net's customer relationships. If it does overbuild, OR will – in effect – be able to deploy the marketing power of BT Consumer, TalkTalk, Sky and Vodafone to win back customers from the alt-net. Further, if OR overbuilds the alt-net will lose its speed advantage, and (unless it lowers its prices) will be at a price disadvantage.

For those retail alt-nets without overbuild and (due to local circumstances) little prospect of it, there will be a strong temptation to increase prices. Such an alt-net has a de facto local monopoly.

Ownership changes

For those alt-nets that have completed their deployment and are not under threat from overbuild, we may see changes of ownership. Private equity investors will likely be looking for exits, and the financial nature of the asset will have changed – with relatively secure revenues and little ongoing investment, such alt-nets will be highly cash generative. Such annuity assets will be attractive to pension funds and the like.

³² Most favoured nation. Here, a commitment to a customer that no other customer will receive lower prices

Consolidation

Given that there are over 60 alt-nets with announced plans to deploy fibre, there is an industry expectation of a wave of mergers, and consolidation is likely to be under way by 2025. (This would echo the consolidation between 1993 and 2006 of the numerous UK cable networks into Virgin Media). It seems probable that for some alt-nets it will have become evident that they will not meet their plans, and owners may be looking for an exit.

However, it is important to consider how such mergers would create value. Fixed telecoms is a game of local scale. Combine two networks in different parts of the country, and you have to continue operating both, limiting any savings. Cost savings may therefore be limited to cutting overhead. (Two important factors in the cable mergers were the prospects of greater leverage with content providers, and greater reach to serve businesses with multiple locations – these factors will not apply materially to the alt-nets).

Thus synergies are more likely to come from revenues than costs, and specifically from an improved wholesale opportunity. As we have seen, the large ISPs are reluctant to engage with smaller alt-nets. Combining a small alt-net with a larger one that already has ISP relationships may allow it to benefit from the existing systems integration and contracts in place for wholesale services of the larger alt-net. (Similar logic applies to the merger of an alt-net with Openreach, as discussed above).

The value of these wholesale relationships can be seen in CityFibre's recent acquisition of FibreNation from TalkTalk. It seems likely that much of the £200m price paid represented the value of the associated wholesale agreement with TalkTalk, rather than the value of the 49,000 homes passed by FibreNation.³³

Even if the ultimate destiny of the alt-nets is significant consolidation, it would be a mistake to assume it will happen quickly. As noted, the process for cable took 13 years.

Consolidation requires: both buyer and seller be ready to transact; agreement of detailed and mutually acceptable terms; due diligence; securing relevant finance; negotiation of a sale & purchase agreement; and securing necessary regulatory approvals (notably from the CMA). Once a transaction has closed, then the acquiror needs to integrate the businesses, reorganising staff and networks;

³³ TalkTalk, *Proposed sale of the Fibre Assets and Notice of General Meeting of the Company*, 21 February 2020

merging cultures; combining systems; and realigning customer contracts as appropriate.

All the above takes time and management attention, and of course there is no guarantee merger talks will lead to a successful conclusion. While perhaps necessary, the consolidation process will be distracting for at least parts of the industry, and a prudent alt-net business plan would not assume a near-term exit in this way.

Ofcom

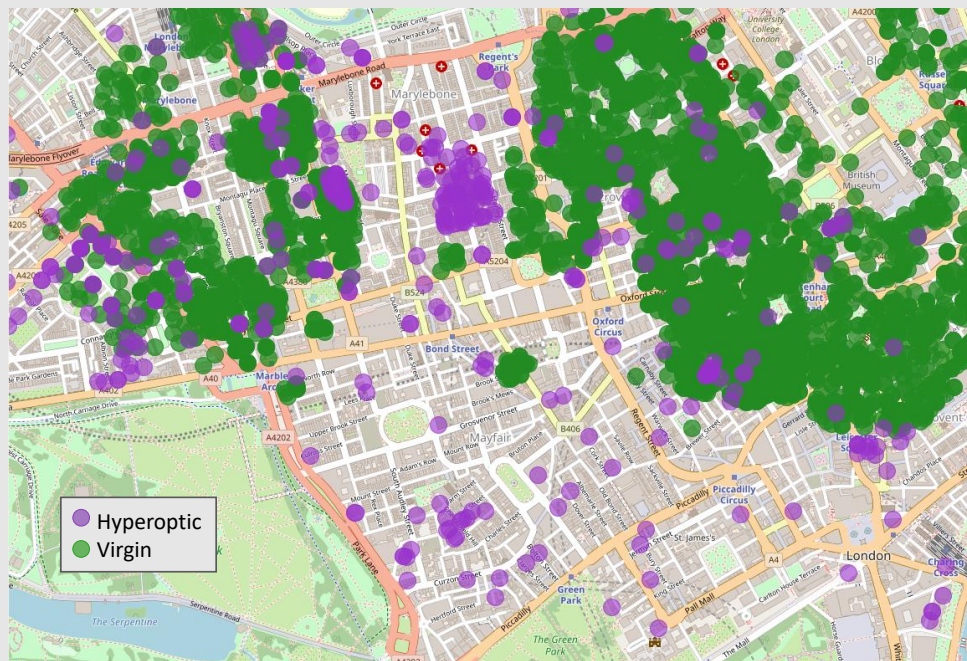
Ofcom too will be facing a very different environment by 2025.

Pressure to designate 'competitive areas'

By this date it seems likely that Ofcom will be in the process of designating a growing number of competitive areas.

BT's rivals are taking steps to limit overbuilding each other. Figure 6 shows the coverage of Virgin and Hyperoptic in the West End. While there is some overlap, much of Hyperoptic's deployment is in Marylebone and (to a lesser extent) Mayfair, where Virgin is absent.

Figure 6: Virgin and Hyperoptic coverage, West End of London³⁴

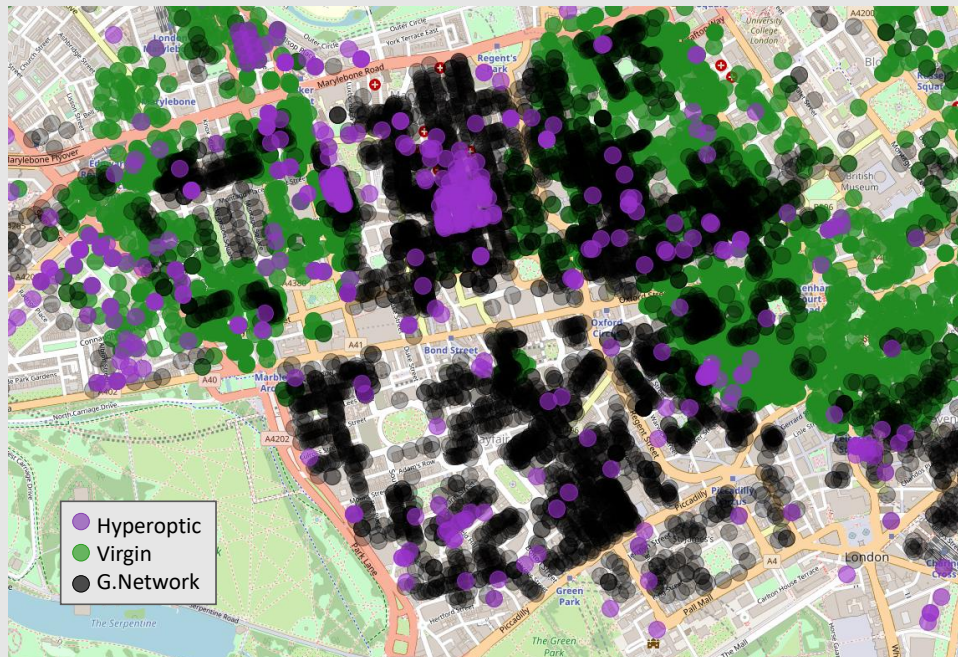


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³⁴ thinkbroadband, *UK Broadband Coverage & Speedtest Results Map* [accessed 19 August 2020]

However, if we add G.Network, a different picture emerges (Figure 7). G.Network overlaps materially with both Virgin and Hyperoptic, suggesting that a meaningful percentage of West End premises have access to at least two of these networks, in addition to Openreach. (Community Fibre also has some coverage in this area).

Figure 7: Virgin, Hyperoptic and G.Network coverage, West End of London³⁵



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Clearly the West End is both prosperous and populous, so is not representative of the UK as a whole. However, that there are already five ultrafast networks operating there suggests that areas meeting Ofcom's three network test are likely to become more widespread as alt-net deployment progresses.

Addressing local alt-net dominance

Conversely, there are also likely to be a significant number of areas with only an alt-net providing FTTP, such as 'one viable network' areas where there is no business case for overbuilding the alt-net. Depending on how eager consumers are for FTTP, this may mean that the alt-net has local dominance, either at the retail or wholesale level depending on their business model. It is at least possible that in some of these cases, the alt-net chooses to abuse that position, and Ofcom may get dragged into regulation of smaller players (in addition to the existing regulation of OR and KCOM). In such a situation it may take some while for the alt-net to put in place an

³⁵ thinkbroadband, [UK Broadband Coverage & Speedtest Results Map](#) [accessed 19 August 2020]

effective wholesale offer – Openreach only did so gradually over many years.

Addressing copper retirement in areas without OR FTTP

By 2025 BT expects to have moved away from the PSTN, enabling copper retirement. However, it has been assumed that customers would be migrated to OR's FTTP network. This raises the question as to what happens in areas where OR has no plans to deploy FTTP, perhaps because other players already have, and have captured a significant share of the market.

In these areas, will Openreach be required to continue to operate the copper network to serve a dwindling number of customers? If OR is allowed to turn off the copper, what protections will be necessary to safeguard consumers in a transition to (say) an alt-net FTTP provider, be that retail or wholesale? Such a transition could strengthen the dominance of that alt-net, for example.

Competition from OR, not competition to OR

To date, an important strand of Ofcom's approach to FTTP has been to create access competition to Openreach. It has been mindful of how to ensure investment incentives for alt-nets, for example.

However, looking ahead, if in some areas alt-nets are dominant and Openreach is not present, then Ofcom may be increasingly interested in how to ensure competition *from* Openreach, not to it.

Regulation of Openreach has been one of Ofcom's key levers to manage the UK telecoms market. However, if Openreach's coverage is only partial, then this lever will be decoupled from the market in some areas. This will create new challenges for Ofcom as it seeks to support investment and protect consumers nationwide. (To the extent to which there is a significant part of the country with Virgin coverage but *not* OR FTTP, Ofcom might see a wholesale remedy of Virgin as a convenient tool to reapply leverage – this would be simpler than regulating multiple alt-nets).

Conclusion

The UK fixed broadband market is becoming more complex, more heterogeneous, more local and less predictable.

The substantial investments being made in ultrafast are undoubtedly good for consumers. However, it seems likely that not all investors will see a satisfactory return, given the collective ambition of alt-nets' plans, and the risk of a repeat (at least in part) of the challenging UK cable deployment.

As with any uncertain environment, there is real value in having options. For example, smaller alt-nets need to consider their exit routes – how can they structure their businesses so as to be attractive acquisitions? ISPs need a long-term eye on the renewal of their wholesale agreements, and having a viable alternative – how do they ensure they don't swap dependency on a regulated Openreach for dependency on an unregulated alt-net?

Such uncertainty is not unusual. Indeed, it is typical of most industries. But it does suggest that fixed broadband is not going to feel like a utility business over the next few years. The industry will need to be on its toes.

