The Future Has 5G Foundations

How we get the connectivity we need now, and will need tomorrow.

June, 2026

cellnex
driving telecom connectivity

PROGRESS

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Foreword

Britain is searching for growth. We do not need to rehash here the problems which slow growth in both GDP and productivity have presented. How our wage growth trajectory has collapsed since the financial crisis. How a highly leveraged government needs growth to meet the spending needs incurred by a dangerous world and aging population. How growth is the only route out the modern condition of squeezed public finances, a frustrated public, volatile politics.

We support the government's focus on leadership in technology to drive this growth. Leadership is important because the leader get the lion's share of the benefits of new technology. The biggest 'chunks' of value, new products, new services, new jobs, are created at the frontier. Their dissemination through an economy is also critical but it is through leading the world that industries are built, comparative advantage entrenched, and prosperity achieved. In the UK, the birthplace of the industrial revolution, we should know this intuitively.

How to lead though, is complicated and hard to for government often to explain its role in.

At times we hear that government's role is to get out of the way. There have been times when this might have been true. Lately in Britain though we have seen this tried, to an extent, and we are where we are.

Our version of this story is different. We recognise that the state is involved fundamentally in leading industries. It is involved because it shapes institutions which supply the talent, the taxes and regulation that define the boundaries of the possible, and the infrastructure which takes the friction out of doing business. There are debates, important debates, to be had about how to leverage this involvement to both pro-growth and pro-social ends. This paper is not about the specifics of that balancing act. This paper instead is about one of the key weaknesses of this kind of account, the tricky matter of what is adequate and what is excellent.

A criticism of our tradition is that, at its worst, it is unambitious. We come from a place of distributive politics. One focused, rightly often, on ensuring that any group has enough. But this is not the politics of growth. Growth is not distributive, it is generative. To do something new, you often need more than enough.

Recently, and cheeringly, political thinkers have started to write and speak along these lines. We hear about abundance now and more and more calls for governments around the world to take an activist role in supply.

In this paper we are thinking about one of the key infrastructural inputs of growth, mobile connectivity. We are asking: what if government's concern in this was not just that we have adequate connectivity for now, but the abundant supply of connectivity we could leverage into a genuine advantage? If it treated connectivity as a resource, one that should be as high quality and widely available as possible.

We argue why government should prioritise this – both for the benefits in terms of grabbing Britain's share of the future and extending growth to every part of Britain. And we suggest how it can have a constructive role is shaping the abundance of this infrastructure – which it does not directly control – in partnership with the regulator and industry.

We have done this because we believe mobile connectivity is a strong case, with real benefits to the UK, and because we believe this is how social democrats should be thinking now. If we are serious about the search for growth, if we agree our government's role is to create the preconditions for it, we must recognise 'enough' is not enough.

Thomas Collinge,
Deputy Director
Progress

Summary

The British Government, both under the previous Conservative and current Labour administrations, has made digital connectivity central to its plans for growth.

Connectivity over mobile networks is central to this, with Labour promising "nationwide coverage of standalone 5G to all populated areas of the UK by 2030".

Putting standalone 5G, the fastest commercially available, in everyone's hands will have massive economic benefits both in terms of Britain's ability to adopt the incoming A.I led technological revolution, and making markets and services more accessible for all regions of the country.

But as this paper will explore, the targets we are currently using are not adequate to let us really know if we have connectivity we can actually use now, or in the future,

Current targets focus on whether it is possible to receive a signal, not what can be done with that signal. Connectivity is a resource, one which is economically and socially valuable and increasingly so. That like any other resource, it is its usability rather than its sheer presence that makes it valuable.

By delinking quality and coverage in the way we measure our progress we are undermining efforts to build world leading digital infrastructure. As other countries forge ahead Britain finds itself ranked 33rd of 38 OECD members for mobile network quality[1].

There are multiple ways this impacts our growth, but we will argue that in particular it is potentially hampering investment in cutting edge technologies which are enabled by the connectivity 5G provides and that the regional inequality in usable connections exacerbates regional economic inequality.

The net benefits and net losses of this situation are particularly hard to quantify (though detailed attempts from government suggests a range as wide as £41-£159bn over 15 years).

To achieve the top end of this scale, we need to see the same level of focus on mobile infrastructure as we had on connecting homes and businesses to the wired internet. There a strong political steer and billions of pounds of public investment have made the idea of not having a quality home connection seem outdated.

To keep up with the evolving economy we need the same for mobile connectivity. We need policymakers to treat as they would treat other resource. To be concerned about whether we have it, whether we can use it, and how it is distributed - both in terms of fairness and maximising benefit.

We argue a serious resource mindset for mobile connectivity, one focused around abundance for the benefit of businesses and consumers is needed. To enable this, we recommend changes to the way mobile connectivity is reported that could be delivered by government and OFCOM now, to set Britain up for tomorrow.

Summary of recommendations:

Britain must introduce quality targets for 5G networks that support economic transformation, not just geographic coverage.

- Existing 5G targets must be amended to include upload and download speed, latency and reliability.
- The targets should be developed by OFCOM in consultation with government, telecoms companies, infrastructure providers, and business organisations.
- They should have a floor based on the competitor countries Britain faces in the global race for growth (including the US and China), be ambitious and try, in key industry sensitive areas, to surpass them.
- To support and enable OFCOM government should amend the Communications Act so investment and infrastructure quality become co-primary objectives alongside consumer protection.
- The targets would be published and monitored as the current standard is by OFCOM, who do so diligently and to a high standard.
- These targets should be sensitive to regional inequality and local needs. For example:
  - » A 300+ Mbit/s target download speed for economic centres,
  - » A minimum 100 Mbit/s floor for all other urban areas
  - » Where there are sites of specific relevance, such as around freeports, Industrial Strategy Zones and A.I Growth Zones, a latency below 30 ms should be the goal to enable advanced applications

Food delivery drones are already being trialled in the UK, in Milton Keynes

New Fuels for Growth: Connectivity as a Resource

At the time of writing, we are anticipating an oil price crisis caused by war in the middle East. This is obviously extremely concerning and we have a clear line of sight to how this shortage of a key input harms our economy.

We want to visit a relative. The petrol price is higher than it was yesterday. It may not change our plan of action but we must consider it. We visit the shop. A highly advanced, technology led, system has enabled us to expect to purchase fruits and vegetables out of season, imported from abroad, at affordable prices. Every single element of this supply chain has been tuned to the utmost efficiency to make this happen but every single element of it relies, in one way or another, on petrochemicals. From the fertiliser, to the shipping, to the plastic the product is wrapped in - the price goes up. We stand before the array of products in front of us. The price has gone up. We may not change our buying decisions, but we will consider it.

Millions, hundreds of millions of times a day, citizens are forced by this resource crisis to think about their behaviour and subtly shaped by it. It aggregates into political and economic trends. It becomes the cost-of-living crisis, the productivity crisis, energy poverty – countless other trends which politicians have to grapple with.

With a smoothly functioning economy, we generally do not have concerns about the resources that underpin our lives, and our political settlement. A crisis is often needed to clarify what is critical. Europe has been experiencing a roiling energy crisis, as we attempt to decarbonise, manage the end of cheap gas from Russia (post the war of aggression it has waged on Ukraine), and petroleum and its derivatives are spiking in price due to war in the Middle East.

European political leaders, including Labours Energy Secretary are taking the resource issue seriously. They have very little choice. It is hastening, we are told, our transition away from oil and gas to resources we have control of domestically. Green power which is sited within our nations or blocs, over which we have control.

We should, one would think, have got used to thinking about the inputs on which our economic success relies. We all agree that it is in our interest for the resources we need to be as cheap, secure and accessible as possible. And yet In this paper we ask why we, as people who think about political economy, only take thinking about resources seriously when we are discussing the crude (literally) physical inputs of economic activity.

We are going to use mobile connectivity, as an example of a modern resource which politicians should take just as seriously in terms of availability and distribution as others.

This form of Connectivity is by no means the only overlooked resource. If energy is the best understood, then joining connectivity among the least are housing and human capital.

We have chosen though to focus on information and connectivity here because Britain is fighting for its share of the future. Our future quality of life depends on being competitive in modern technology and ideas-led industries. It is only through these things will the elusive growth that western economies are struggling to find to be captured and its only through this growth that our relative position as rich countries will be preserved.

Mobile connectivity has been a resource of the future since at least the early 90s. Perhaps precisely because they are more ephemeral than barrels of oil though it has been hard, with the notable exception of far-looking political leaders like Tony Blair, to get politicians to treat them as resources that we have an interest in securing the supply, and managing the cost, of.

Consider; we want to pay a bill. The signal drops for a moment. It may only last a few seconds, but everything pauses with it. We try again. A driver waits for a route to reload at the side of the road. A café owner watches a card machine fail during the morning rush. A market trader cannot confirm a payment because the banking app will not refresh. A doctor on a video consultation freezes mid-sentence. A warehouse worker stands beside stacked deliveries waiting for instructions that do not arrive.

Nothing disastrous necessarily happens, but the marginal cost goes up, the frictional cost goes up and the freedom to experiment with new products, new technologies, new ideas goes down.

That all these connections should work has become part of the background of daily life. We expect information, payments, conversations and decisions to move instantly between people, businesses and places. What would have been unimaginable just decades ago is now an assumption that we build routines around.

Despite this, we do not weigh connectivity with the same seriousness as we do other economic inputs. But what if we did?

Key takeaways:

- We are used to thinking about the impact of resource scarcity, and abundance, on growth when it comes to traditional material inputs such as fuel.
- We have a blind spot for thinking in the same way about other critical inputs to our growth, including mobile connectivity, and this must change.

Connectivity in the UK: Partnership Between Government and Business in the National Interest

Today, connectivity means access to the internet. We know that the quantity of data people are using has greatly increased in recent years. The median amount of data used annually on fixed networks, that is wired internet in homes and businesses, was 84GB in 2017[2] by 2025 it was an average of 531GB, a month[3], a 7480% increase.

This reflected faster connections provided by telecoms companies to meet the demand for an expansion of the range and nature of services requiring data. It was supported by government, to the tune of £5bn through Project Gigabit, which aims to ensure 99% of premises have access to a gigabit connection by 2032

As with most government policy on technology, though the frontier has shifted while Project Gigabit has been rolled out. Today, 58% of UK web traffic comes from mobile devices[4] and according to Ofcom, 1.5m people have no wired connection at home at all, but access the internet purely via the mobile network on a phone, or other device.

According to Uswitch, In 2023, 89% of people used their mobiles to go online, compared to 28% in 2009[5] and virtually every adult in Britain has a smartphone. There are in fact more mobile subscriptions (89m in 2024) than there are people in Britain (70m in 2024[6]).

Things, as well as people, are increasingly connected to the internet via mobile networks, with Ofcom reporting the number of active IoT connections on MNO networks reached approximately 27.7 million in 2025, a year-on-year increase of 4%.

Responsibility for mobile networks lies with Ofcom. Their mandate from government going back to 2017 was to support the UK to become a world leader in 5G.

As the UK government said at the time:

"Good digital infrastructure is a building block of the Government's modern Industrial Strategy - it creates new opportunities for growth by allowing business to be done on the move; unleashing dynamic business models; and opening up new opportunities and markets."

A statement that nearly a decade later, under a different party with its own vision for industrial strategy, remains true[7] .

The mobile component of this connectivity is not about gigabit broadband in homes, but access to 5G networks for mobile devices and unlike Project Gigabit is being delivered entirely by the market.

The target, created by the Conservatives and affirmed by Labour is for "nationwide coverage of standalone 5G to all populated areas of the UK by 2030".

Key takeaways:

- Connectivity growth has greatly increased, led by technological change and the private sector.
- Multiple governments have recognised that they have a role in shaping and directing this growth in what is a key part of national infrastructure through the setting of targets and direct funding, including the £5bn project Gigabit.

Digital Infrastructure depends on investment in physical infrastructure

The 5G Upgrade Target: What Does it Mean, and Why Does it matter?

What progress towards the Government's target has been made? To understand where we are in the UK today it is important to understand the difference between the 4G networks we are transitioning from, the 5G ones we are transitioning too, and blending that has happened in order to make the transition possible so far.

4G, the fourth generation, of mobile networks offer download speeds of around 20-100mb/second[8] and was introduced in the 2000's and early 2010s around the world (2012 in the UK)[9] .

5G, the fifth generation, of mobile networks was first launched in the UK by EE in 2019[10]. It is definitively faster than 4G but the speed is variable, as we will see, based on your provider, location, and type of 5G.

There are two types of 5G with different levels of performance. Since 2019, the UK has had what is called 5G Non-Standalone (NSA). This added 5G radio equipment to the existing 4G mast network, improving download speeds at relatively low cost.

The Government is now committed to 5G Standalone (SA) which is a more advanced version. 5G SA unlocks the lower latency (the speed at which data is transmitted) and reliability that more demanding applications, such as industrial automation and connected transport, actually need. SA-class performance also depends on having a dense grid of masts and small cells installed on existing structures like lampposts.

But today, UK operators are connecting their 5G SA to a mast grid that is contracting, not growing. Following the Vodafone–Three merger, the companies stated publicly that they would "integrate" their networks and "remove duplication" across their combined infrastructure footprint.

At the same time, industry sources state that around 95% of current deployment activity involves upgrading existing sites rather than building substantial numbers of new ones. There is no commitment to build new infrastructure to keep up with the demand.

As matters stand, users and businesses can connect to a network branded "5G Standalone" and still not experience the speed, latency or reliability improvements the label implies. Ultimately, the quality of mobile connectivity for users is a function of how dense the underlying network infrastructure is. Yet while demands placed on the network continue to grow, the amount of distinct physical infrastructure available per user risks becoming proportionally smaller.

Networks have said publicly they do not see the value in investing further, citing weak returns.

As an example, Vodafone's chief technology officer told the mobile world congress in 2025

"What went wrong was the marketing took over. So if you go back to a press release of 5G launch in 2018, you'll hear it talk about all the benefits of 5G that came with 5G SA, even though it was four years away and, therefore, we lost the ability to monetise that"[11].

While this makes sense from the perspective of a business trying to sell a product, it is a problem for a nation which is trying to build out its digital infrastructure to remain competitive in a cut-throat global economy.

Key takeaways:

- '5G' is a big leap forward from 4G but is two-speed system, limited by the density of the infrastructure that is used to provide it.
- The full benefits of the new network are locked behind 5G Stand Alone (5G SA) which is only available in some places.
- The government's target for 5G SA to support growth is not being matched by all providers with investment in infrastructure due to challenges of monetisation.

Businesses of all shapes and sizes rely on mobile signal for everyday trading

Hitting the Right Target: What Use is A Hypothetical Connection?

If you aggregate all the network providers together then Ofcom data suggests[12] that an individual has a 94-97% chance of being able to connect to a 5G network (primarily non-standalone) as long as you are close to a building. This looks positive but is misleading.

People do not use a blend of the UK's three main network operators (EE, O2, Vodafone Three) and the many smaller virtual operators they support. Only around 47% of premises have access to standalone 5G from more than one operator. Coverage indoors is worse than outside, and coverage along train lines – as any intercity traveller will know – is intermittent.

But what is most important is the difference between the coverage, the potential to receive a signal, and actual use. Ofcom's own research shows that in practice, only 28.3% of mobile internet connections were made via 5G (of either kind) in 2025[13].

There is a regional divide within this figure, with rural areas of the UK making proportionally less 5G connections, just 18.8% and the lowest of all being rural Northern Ireland where just 8.1% of connections are made via 5G.

When we disaggregate the two types of 5G, the picture seems even worse. Independent estimates from last year suggest only 2% of UK mobile connections were delivered via 5G standalone[14].

So while much of the country may be covered, in theory, the usage rates of high-speed connections for business and consumers is much lower. The data tell us the resource of connectivity is there, the rate it is being used at tells us it is not.

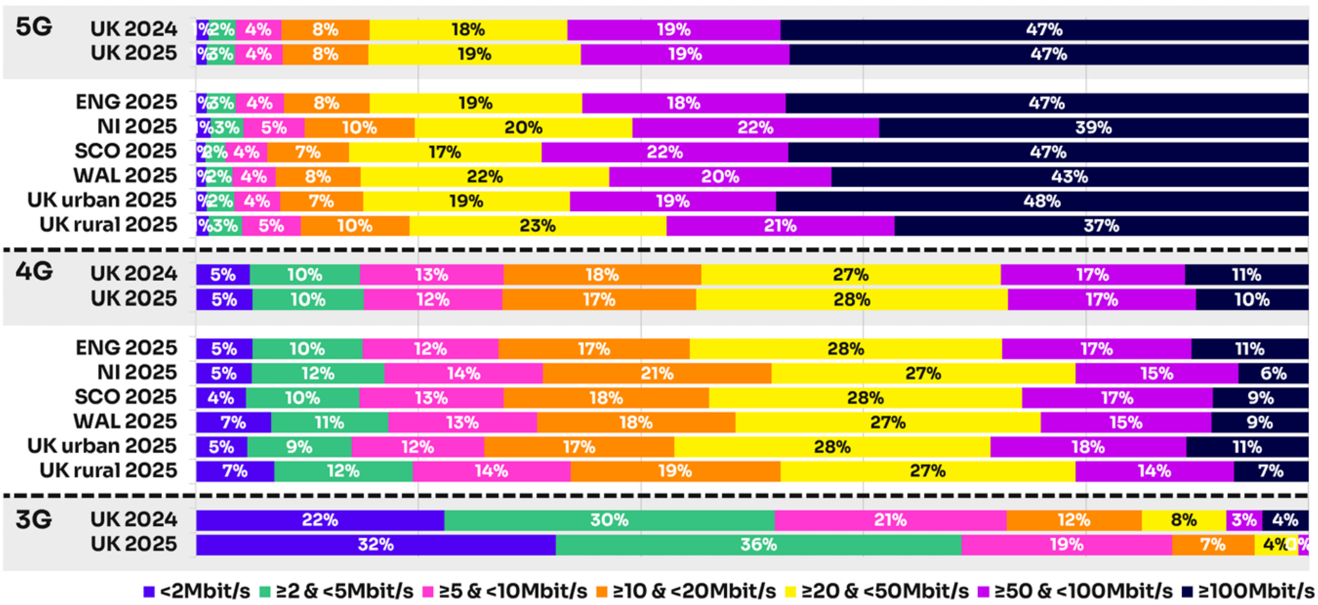
There is a further issue. Where the connectivity is being used, the actual speed of these connections is quite variable. Median speeds vary more than ten-fold between best-and worst-served areas, and even the UK's best-performing cities underperform their European counterparts .

Independent European benchmarking shows that UK urban mobile network performance lags comparable European cities. Recent pan-European city studies rank London among the weakest performing major capitals for 5G availability, speed and reliability, well behind peers such as Paris, Berlin, Amsterdam and Barcelona.

London has the lowest 5G consistency of any major UK city, with just 75% of recent tests meeting basic quality thresholds. Glasgow, the best-performing UK city, delivers median 5G download speeds of 185 Mbps compared to London's 115 Mbps—a 47% gap.

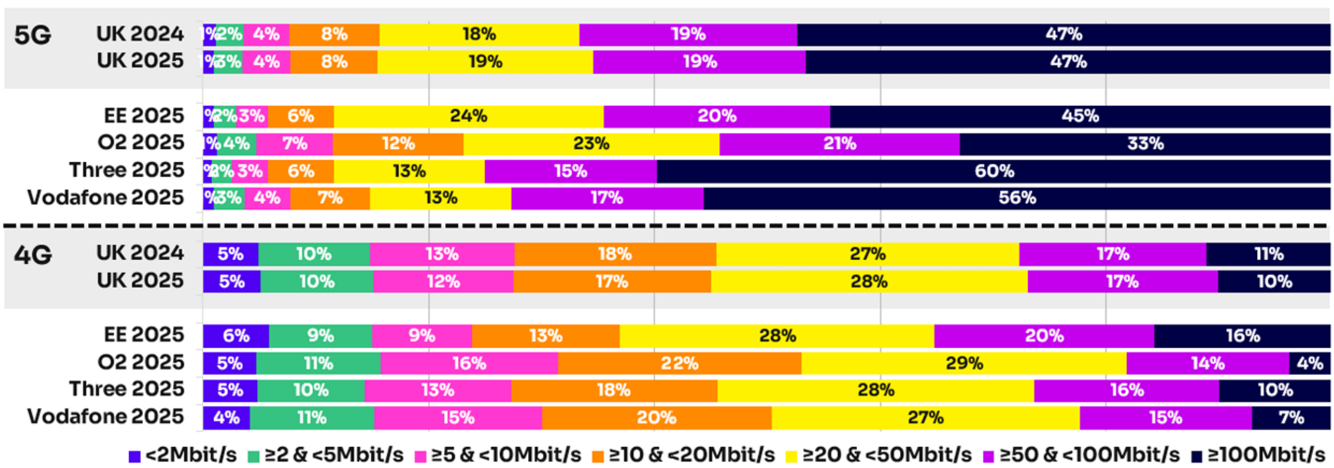
Effectively, the appearance of 5G symbol on your device is no guarantee of a high-speed connection, and Ofcom's data bears this out[15]:

Figure 1: Ofcom's, *'Distribution of download speeds, by mobile technology, UK nation and rurality: 2024 and 2025'*



Alongside significant variance in the speeds one can expect by network:

Figure 2: Ofcom's, *'Distribution of download speeds, by mobile technology and MNO: 2024 and 2025'*



Progress on standards?

As this paper was being finalised, Ofcom published a discussion paper, Connectivity you can count on (June 2026)[16], which for the first time proposes a standard for what counts as "good" mobile performance and a benchmark for how consistently it should be delivered.

It recognises that "mobile quality is not good enough" and accepts the argument at the heart of this paper: that coverage alone tells us little, and that what matters is whether a connection can actually be used. This is a very positive step, particularly for everyday consumer and business applications and should be applauded.

The question, as we explore in the next section, is whether these new quality targets are getting us to the place of abundant connectivity, ready to be exploited by new businesses and technologies and that build in the connectivity needs of the future.

Early signs suggest that they are more focused on an adequate supply of connectivity now, when we know what constitutes adequate shifts rapidly as the technology changes.

Key takeaways:

- The metric which is currently in use to understand how well connected the UK and on which we set our targets only looks at whether it is possible to receive a signal, not whether it is possible to do anything with it.
- Actual connectivity, as measured in download and upload speeds as opposed to the potential to connect is well below the 5G standard and significantly variable by network and geography.
- OFCOM has recently recognised quality of connection needs targets of its own and made proposals. This recognition is in itself welcome, but the concern is the targets are more about having just enough mobile connectivity to smooth the current consumer experience, rather than building capacity for the future.

Why Useable Connections Matter

Analysis commissioned by the government and published in 2023 suggests that the economic benefits of 5G adoption, measured in Gross Value Added (GVA) which incorporates wages, profits and taxes, would be between £41-£159bn between 2021-35.

The variance between these figures is explained by the likely speed and scale of adoption as the modellers saw it at the time[17]. What we can see today is that question of adoption looks quite good on some metrics and quite bad on others. The question we started out with in this report, if connectivity was a resource – would we say we have the right amount for now, and for the future? Is obscured by all this variance in what connectivity is. A barrel of oil converts reliably in kWh, your 5G connection does not convert reliably either in terms of downloads, uploads, or latency.

This matters for fairness within our economy – the urban rural divide in connectivity is stark – and for the overall growth of it in the future.

Quality connections and High Technology

We are living through a time of rapid technological change. Countries are racing to be both the developers and early adopters of a new wave of technologies that promises to transform our economies and enable new forms of growth. The connectivity which would be enabled by consistent 5G is at the heart of these.

Internet of Things (IoT)

Fast and reliable 5G connections enable a range of different devices to be connected. In the home this includes things like security systems, television and also new technologies like ‘smart bricks’ which link to the a thermometer to ventilate the home, or not, depending on the temperature. Many of these ‘in home’ IoT technologies will in fact be connected to home routers and effectively be on the ‘wired’ internet but out of home applications will rely on the mobile network their increasing number and sophistication therefore depends on 5G.

In Industry, machinery which may often be outside, can be connected via 5G to enable predictive maintenance, remote monitoring, and autonomous control of machinery.

In logistics, connectivity can enable real-time tracking of items and products, as well as helping businesses build a more accurate picture of the real-time movement of cargo to understand and prevent bottlenecks.

In infrastructure, damage to railway bridges, or rising water levels pre-flood can, and should all be monitored by devices to alert the relevant authorities. In health, reliable 5G could massively increase the range of monitoring options available to people and loop the health service in before an incident even occurs.

The possibilities are virtually endless, and all of these things are technologies and businesses that could be developed in Britain, to meet domestic needs, driving domestic growth.

Artificial Intelligence (AI)

The government has made A.I central to its plan for growth. As a consumer, as A.I tools become more integrated into daily life they will likely drive more use of handheld devices for everyday tasks, and the expectation that these will work, wherever one is will be more ingrained. This could include the generation of video or other large file size content which The data generated by the IoT devices described above will be the fuel for A.I tools, and with the right protections can be kept an processed in the UK by domestic firms.

More than this, really exciting frontier technologies such as driverless cars, drone delivery, and automated logistics (where for example, one vehicle has a driver and is shadowed by driverless vehicles) will depend on reliable connections and low latency that reliable 5G provides.

Remote control

The low latency offered by true 5G allows a remote operator to make real time, highly precise inputs to a device which translates them wherever it is situated. This means tasks too complex, or too sensitive to be automated by A.I can be done remotely, reducing the need to travel or making them more accessible. A commonly cited example is remote surgery, but conceivable applications would include the remote piloting of vehicles, or maintenance of inaccessible places (e.g. tall buildings, windfarms).

Don't we have these things anyway?

It is true that some frontier technologies are starting to roll out in the UK on the network as it stands. This is of course positive, but we should not take it as a sign that all is well. There remain fundamental problems of scalability and equity which any government serious about growth must address.

Autonomous vehicles are already on London's streets. Delivery robots are already operating in Milton Keynes. These technologies don't need 5G to exist. They're here. But running one robot on a test route and running a fleet of thousands as a reliable public service are very different propositions. The latter requires constant data flows: fleet monitoring, remote assistance, real-time service management.

This is the scalability issue. The fact that many UK businesses have been conditioned by poor network experience and therefore avoid putting critical processes on mobile networks is not something to celebrate.

They are working around a problem of connectivity scarcity, and doing a great job, but we do not know what we are losing out on in the counterfactual where we had connectivity abundance.

We do however have some signs. China is building what government sources call the 'low altitude economy'[18] and explicitly linking the use of drones for delivery of products to its investment in 5G infrastructure. While it is hard from the outside to tell how real this is, and what the economic benefits are, there are signs that in some areas the industry is growing and driving down logistics costs[19].

When faced with technological change, adequacy now is no indicator of adequacy in the future, and adequacy should not be the goal of any country which aspires to lead. We naturally struggle to imagine what the industry of the future will look like but we can be confident that a key resource it will run on is connectivity and we must be more proactive in making sure it is accessible.

Won't the new quality targets be good enough?

The move by Ofcom towards quality targets is welcome as we state in the previous section. The question is whether it is adequate to grasp the potential outlined about. Its definition of "good" is the ability to stream video and use common smartphone apps on the move.

That is a reasonable floor for a commuter checking their phone. It is not a standard designed around the needs of a smart factory, a logistics fleet, an autonomous vehicle or an AI Growth Zone. A measure that tells us only whether people can watch YouTube on the train will not, on its own, tell us whether Britain has the connectivity its economy needs to grow.

Nor is the ambition pitched at the level of Britain's competitors. As Ofcom say, meeting its benchmark would move the UK into the top third of OECD countries, a group of thirty-eight advanced economies, from its current position near the bottom, 33rd of 38.

The question really is whether this is enough. Should we settle for a respectable mid-place among our peers? Even getting this far would still leave Britain behind every Nordic country, behind South Korea, behind the Netherlands and others: the very economies we are competing with for the industries of the future. And Ofcom concedes the target will erode as those countries keep investing more than the UK does. An ambition to climb from the back of the field into the top third on a measure built for everyday consumer use is not the same as an ambition to lead. If connectivity is the input on which future growth depends, Britain should be aiming to be among the best-connected economies in the world.

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Key takeaways:

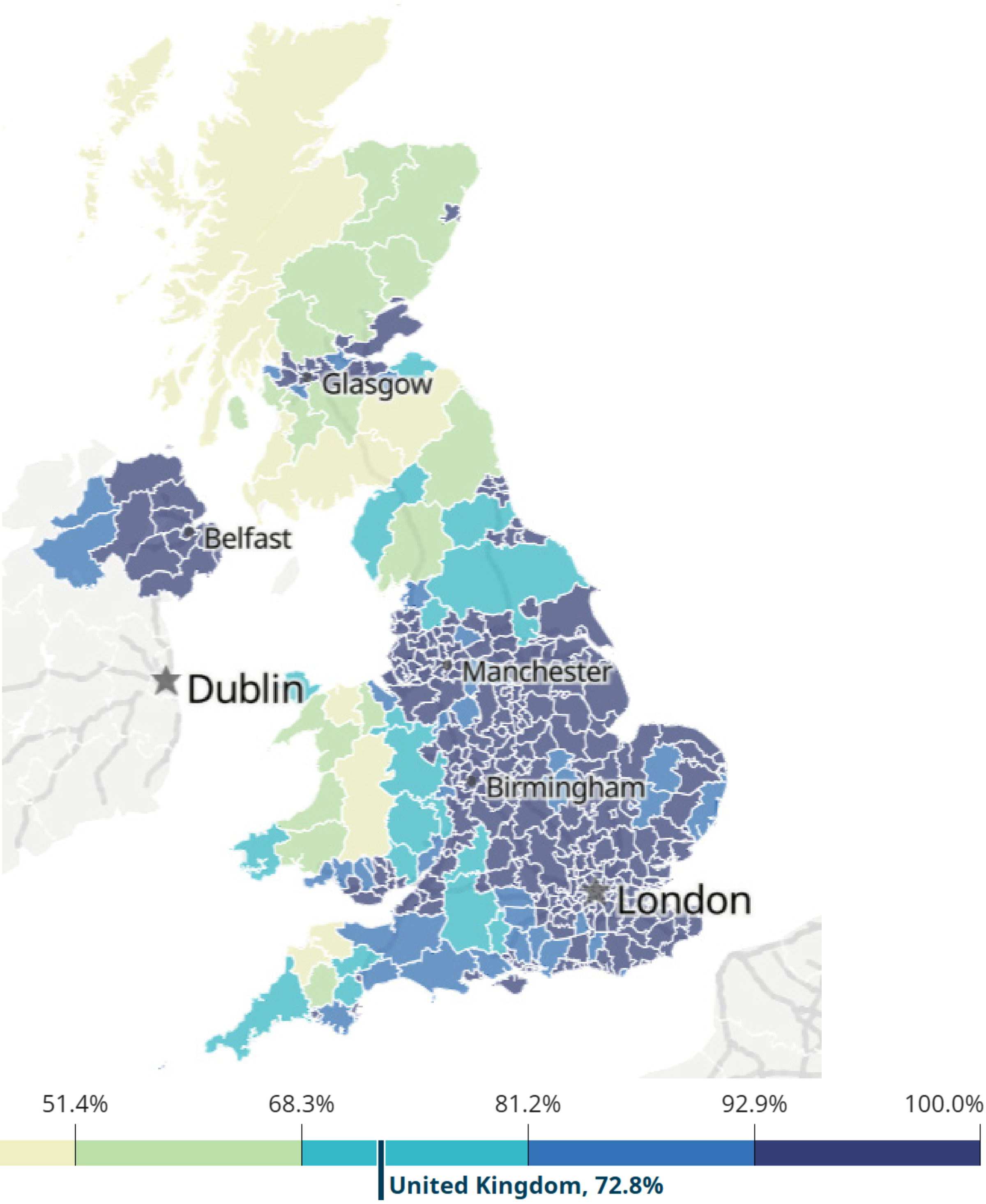
- A huge range of the technological which will drive growth and Britain's future competitiveness works best, or only works at all, on 5G standalone.
- Britain's technology companies are highly skilled at making the most of the current network but are succeeding in spite of, not because of, our connectivity infrastructure.
- The relatively rapid pace of adoption of new technologies in countries with better mobile connectivity infrastructure than ours suggests this limitation is starting to hold us back.
- Faced with uncertainty about what exactly future connectivity demand will be, we can still be confident that it will be greater than today's, and abundant mobile connectivity will put us in the best possible position to grasp the next wave of technological opportunity.
- It is not clear that the new targets being proposed are fit for the needs of the future. They seem to be good enough for consumers now, rather than planning for businesses tomorrow. An abundance of connectivity, and the potential economic benefits it could bring seem to be out of scope.

Quality Connections Everywhere

While we are concerned that our connectivity is not adequate to grasp the future, we must address the fact that for many people in many places it is also inadequate now.

As we can see from the below chart from the ONS there are large areas of the UK with poor 5G coverage on (entirely aside from quality) and the below chart again blends the operators meaning that the picture will be worse if one is unlucky enough to not be on the best operator for their region.

Figure 3: The ONS , *'Percentage of area with 5G coverage from at least one mobile network provider, lower tier/unitary authorities, Jan 2026'*[21]



The worst areas in England are the North East, North West and South West , which are also the most economically deprived. Their poor coverage is not simply a case of population density, with the North West being more densely populated than Yorkshire and Humber and the East Midlands and East Anglia, the North East being roughly equivalent to those three and the South West, admittedly, being the least dense in Britain .

This is a regional disparity in infrastructure that will directly hurt the economic opportunities of these places. And the picture is not so simple as just region versus region. Even in the region that appear to be well served by 5G connectivity there is a divide between the urban and rural. Nearly half of deprived rural communities have no 5G access compared to just 2.7% of their urban equivalents[20].

The robotic delivery drones and autonomous vehicle examples we discussed earlier, where the technology is, at a small scale, being made to work on the current network are notably both in London and the South East.

What makes these technologies work in these place isn't just that 5G is available. It's that the network is consistently good enough to be trusted. Patchy quality and unreliable performance, even where coverage nominally exists, are what stand between limited rollout and a scalable industry nationwide. What means they can benefit the whole country as opposed the islands where good infrastructure and growth is already concentrated.

Against this backdrop, the government target of all populated areas to be covered by standalone 5G by 2030 is right but as we have discussed in previous sections of this report, the potential for 5G standalone to reach a phone (on one or another network) is not the same as the genuine connectivity we need to grow places and grasp new technology.

The danger is, that this standard will continue to hide significant regional variation in actual use and usability. This will hamper governments efforts to improve productivity and growth across the country and create the risk that the areas which could benefit from growth most become 'left behind' outpaced by already high performing areas with better infrastructure.

Key takeaways:

- Mobile connectivity is significantly variable on the current metrics across the UK. The situation with actual usable connections is likely worse.
- There is a natural element of agglomeration of the infrastructure to places where people and businesses are but this does not explain why dense and dynamic regions in the North have less connectivity than London and Southeast.
- Allowing a continued disparity risks accelerating the divergence between the place with high quality connections where new tech will be adopted more consistently, and the rest.

What Can be Done? Targets to Match Our Ambition for Britain

In this paper we have tried to treat digital connectivity, and within that specifically 5G connectivity as what it actually is, a key input into economic growth. One that is crucial to both regional balancing in the UK and our ability to grasp the technology led growth of the future.

We have learnt that it is surprisingly hard to do this. That the quantification of the resource as it stands is not consistent enough for policy makers to understand easily where we are, never mind consumers or businesses. We have discussed how this makes it difficult to understand our relative preparedness vis a vis the technology of the future and the regional picture in the UK. This must be remedied and it can be.

**Our recommendation:
Ambitious targets**

Most fundamentally we need clear quality targets for 5G networks that support economic transformation.

These targets must be about more than whether a 5G signal can conceivably be received by a device.

That of course should be a component, but targets must also include upload and download speed, latency and reliability values.

The targets should be developed by OFCOM in consultation with government, telecoms companies, infrastructure providers, and business organisations.

They should have a floor based on the competitor countries Britain faces in the global race for growth (including the US and China) but be ambitious and try, in key industry sensitive areas, to surpass them.

This would align with the growth duty for UK regulators demanded by Chancellor Rachel Reeves. To support and enable OFCOM government should amend the Communications Act so investment and infrastructure quality become co-primary objectives alongside consumer protection.

The targets would be published and monitored as the current standard is by OFCOM, who do so diligently and to a high standard, but it would better reflect what actual connectivity is, and allow consumers, policymakers and business leaders to make better informed decisions about the adequacy of coverage.

These targets should be sensitive to regional inequality and local needs. For example, a 300+ Mbit/s target download speed for economic centres, coupled with a minimum 100 Mbit/s floor for most users. Where there are sites of specific relevance, such as around freeports, Industrial Strategy Zones and A.I

Growth Zones, a latency below 30ms could be mandated.

Where these targets are not met, there would be not enforcement actions on networks. They would be a target, and a tool for transparency in the market.

When the time comes for the renewal of the licences to operate on the 5G network we should, as happens in France, Germany, and other European countries include quality requirements into the new terms[22] . We should also consult on a German style specific requirement for coverage around key infrastructure (in their case motorways and train lines) and the cost/benefit of such a requirement versus satellite internet on trains.

Concluding thought: Scarcity, abundance, and how we think about the future.

Connectivity is a resource. A modern input of economic growth. But the way we quantify it is not working. It is not working for consumers, it is not working for our frontier technology business, for our mainstream vendors and manufacturers around the country, or for the future growth and competitiveness of the UK.

Because we have not quantified it properly, we are not taking the degree to which we as a country are falling behind in this key digital infrastructure seriously. The lag in the appearance on new technologies on our streets is a highly visible warning sign, but it is perhaps less significant than the impact on digitally connected capital investment in business, and thousands of consumer decisions influenced, and lost productivity hours due to inconsistent quality of connections.

Building out a modern infrastructure is, of course expensive and will take time. These recommendations are not about the best way to finance that infrastructure or deliver it. They also do not address the planning issues, which are critical in this area as so many where new infrastructure may need to be built. This is not a cause for inaction.

Solving real world problems and creating real world opportunities is complex. Britain faces many. Being informed about the scale of them, having the right information to understand where we are, globally, regionally and within and between our nations and regions is the first step to national renewal.

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Progress, June 2026