**DCMS Future Telecoms Infrastructure Review – Summary of findings**

1. **Introduction**
The Department for Culture, Media & Sport (DCMS) has published the findings of its Future Telecoms Infrastructure Review.¹ The purpose of the Review, which was launched in November 2017, was to identify options for government to encourage investment in full fibre and 5G technologies.²

It is welcome that some of the Government’s conclusions are in line with the CWU’s objectives, as set out in the union’s written submission to the Review’s call for evidence.³ This includes recognition of the need for investment to be prioritised over further price reductions, and the importance of longer market review periods to create greater regulatory stability.

The Government has also indicated it will support investment in the most difficult to reach areas. Disappointingly though, there is no detail on how it will fund the estimated £3 billion to £5 billion needed to achieve this.

The following brief provides a summary of the Government’s Review findings, including three associated reports it commissioned to inform the Review.

2. **Summary of Key Points**

- **The Government wants to see 15 million premises connected to full fibre by 2025, with coverage across all parts of the country by 2033. It wants the majority of the population to have 5G coverage by 2027.** The CWU’s response expressed support for long term investment in rolling out full fibre and 5G coverage, so this is broadly welcome.

- **The Government expects superfast broadband coverage to reach 97% by 2020, and legislation is in place to create a Universal Service Obligation (USO) giving the right to request a 10Mbit/s connection.** The CWU called for more action from the Government and the regulator to ensure that all premises have access to basic and superfast broadband in the

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short to medium term. We said the new broadband USO should be properly supported by investment incentives and public funding where necessary. However, these issues were not the focus of the review and are not expanded on in any detail in the findings.

• The Government considers that promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits. This is welcome, and something the CWU has called for consistently over many years.

• The Government’s statement to Ofcom, which will be informed by the findings of the Review, will emphasise the importance of promoting investment as the key to achieving the UK’s connectivity ambitions. This is welcome as the CWU has long called for Ofcom to place more emphasis on encouraging infrastructure investment.

• The Government has identified the need for greater regulatory stability and clarity, through the availability of longer five year market review periods and a framework for a fair return on investment. This is welcome and something the CWU explicitly called for in our submission.

• The Government estimates that in the final c.10% of premises, the market alone is unlikely to support network deployment and the Government ‘will support investment in the most difficult to reach areas’. This is encouraging as the CWU has called for greater public funding for network infrastructure. However, the Government estimates that the required additional funding ‘from whatever source’ is likely to be in the region of c.£3 billion to c.£5 billion. Regrettably, the report gives no indication of where this money will come from, except that there will be £200 million available from the Broadband Delivery UK programme.

• The Government continues to believe that competition is the best route to delivering network improvements where investment is commercially viable. Having considered various market models put forward by Frontier Economics, the Government says its preferred delivery model promotes competition where possible but intervention where necessary. This is consistent with the Government’s general approach to maximising competition. It has rejected the ‘national monopoly’ model option, which is based on one Fibre to the Premises (FTTP) provider with regulated access to its network. This model would be more in line with CWU policy on fixed network infrastructure, which has opposed network duplication in the interests of the economics of universal service provision.

• The report says it is too early to determine whether legal separation of Openreach and BT Group, which has the Government’s backing, will be sufficient to deliver positive changes on investment in full fibre infrastructure. The CWU was always opposed to the separation of Openreach from BT Group. We argued that regulation must incentivise long term investment from Openreach, and that Ofcom’s proposed Wholesale Local Access price controls would do the opposite.

• The Government will consider all additional measures if BT Group fails to deliver its commitments and regulatory obligations, and if Openreach does not deliver on its purpose of investing in ways that respond to the needs of its downstream customers.
• The Government is clear that network competition between Mobile Network Operators (MNOs) has been an important driver of mobile investment and expects that this will continue to be the case for 5G. It recognises the argument, put forward by some including the CWU, that competitor consolidation could deliver higher levels of investment. It says that Ofcom should monitor the level of mobile competition and consider appropriate options if the current market structure was not supporting network investment in 5G.

• The Government says that the pace of rollout will depend on various factors, including the availability of labour. Disappointingly though, it makes no reference to the importance of decent labour standards in delivering a high quality world class digital network for the UK, as called for by the CWU.

• The Government recognises the importance of stimulating demand and encouraging the mass take-up of full fibre services. It says the public sector can play an important role in generating greater demand for fibre networks. However, it is disappointing that there is no mention of introducing a digital inclusion strategy with funding for basic digital skills and an e-literacy campaign as called for by the CWU.

• The Government will monitor progress of the strategy on an annual basis and undertake a full review of the strategy’s impact after three years.

**Report Overview**
The Government believes it is clear that full fibre and 5G are the long-term answer to the UK’s network infrastructure needs. These technologies have the potential to transform productivity, and to open up new business models. Full fibre networks are faster, more reliable, and more affordable to operate than their copper predecessors.

The Government has set clear, ambitious targets for the availability of full fibre and 5G networks. It wants to see 15 million premises connected to full fibre by 2025, with coverage across all parts of the country by 2033. It wants the majority of the population to have 5G coverage by 2027.

**Nationwide full fibre connectivity**
The total level of investment required for the national roll out of full fibre is estimated to be in the region of £30 billion. This is an estimate of total capital expenditure needed for deployment under a competitive model.

The Government says that changes will be necessary in the regulatory and policy environment, to incentivise the large-scale deployment of new networks in rural and urban areas across the UK.

It believes the most effective way to deliver nationwide full fibre connectivity at pace is to promote competition and commercial investment where possible, and to intervene where necessary.

The Government estimates that in the final c.10% of premises, the market alone is unlikely to support network deployment and additional funding of some description will be required to ensure national coverage.

The Government says that the strategy relies on getting a number of things right, including:

- Making the cost of deploying fibre networks as low as possible by addressing barriers to deployment;
- Supporting market entry and expansion by alternative network operators through easy access to Openreach’s ducts and poles;
- Stable and long-term regulation that incentivises competitive network investment.

**Addressing deployment barriers and reducing costs**
There are currently too many barriers which make building networks expensive and too slow, which the government will tackle in the following areas:

- Simplifying wayleave agreements to facilitate easier access to multi-dwelling units;
- Reducing the costs and time caused by street works by standardising the approach across the country;
• Ensuring fibre connectivity in new builds.

**Easy access to passive infrastructure in telecoms and other utilities, to support market entry**
The Government says that Ofcom’s enhanced access regulations requiring Openreach to share its vast network of ducts and poles with rival operators has the potential to significantly reduce deployment costs.

If the evidence shows that this remedy is not being implemented properly by Openreach, all options should be considered to ensure compliance.

Where ducts and poles are not available or effective, there should be other options to enable market entry by alternative networks, for example, access to dark fibre.4

**Stable and long-term regulation that encourages competitive network investment**
It is the Government’s view that promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits. To achieve this, the Government has identified a need for:

• Greater regulatory stability and clarity, through the availability of longer five year market review periods and a framework whereby firms making large, risky investments can have confidence that any regulation reflects a fair return on investment commensurate to the level of risk.

• Regulation only where and to the extent necessary to address competition concerns and ensure the interests of consumers are safeguarded as fibre markets become more competitive.

Ofcom must have regard to the Government’s strategic priorities and outcomes in the exercise of its regulatory functions.

This approach, alongside the Review’s other proposals, should incentivise established players to invest more in fibre networks and also make it more attractive for competing providers to build their own networks rather than buying wholesale services from the incumbent.

**Full fibre connectivity for all through an ‘outside in’ approach to deployment**
The Government says that areas, often rural, that are unviable commercially for full fibre deployment will require additional funding ‘of some kind’, and that they must not be forced to wait until the rest of the country has connectivity before they can access full fibre networks.

The Government will support investment in the most difficult to reach areas at the same time. The additional funding ‘from whatever source’ is likely to be region of c.£3 billion to c.£5 billion.

To make sure that fibre delivery in these areas starts early, the Government will prioritise delivery of full fibre networks through the existing BDUK Superfast Programme, which has

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4 Dark fibre is optical fibre already deployed (e.g. in ducts) but not in use or ‘unlit’.
already made FTTP available to over 200,000 premises in predominantly rural areas by March 2018.

The Government has already identified around £200 million within the existing Superfast Programme that can be used for rolling out full fibre networks.

**Switching to a full fibre future**
The Government says that running copper and fibre networks in parallel is both costly and inefficient. A fibre switchover strategy is necessary to stimulate demand for fibre, to enable new networks to achieve scale quicker, and to ensure a smooth transition process for customers. This should be led by industry, working closely with Ofcom and Government.

It is realistic to assume that switchover could be underway in the majority of the country by 2030, but the timing will ultimately be dependent on the pace of fibre roll out and on the subsequent take-up of fibre products. The Government would only expect switchover to start when a significant proportion of the population has taken-up new fibre services.

The Government says the public sector can play an important role in generating greater demand and take-up of fibre networks. For example, LFFN is a Government initiative designed to address market lag in deployment of FTTP. This has included using hospitals as a full fibre ‘hub’ which surrounding homes and businesses can then also be connected to.

**Legal separation of BT and Openreach**
The report states that it is too early to determine whether legal separation of Openreach and BT Group, which has the Government’s backing, will be sufficient to deliver positive changes on investment in full fibre infrastructure.

The Government will consider all additional measures if BT Group fails to deliver its commitments and regulatory obligations, and if Openreach does not deliver on its purpose of investing in ways that respond to the needs of its downstream customers.

**A world leader in 5G**
Alongside finishing the roll out of 4G networks to meet existing mobile demand, the Government wants the UK to be a world leader in 5G to take early advantage of this new technology. It has set a target that the majority of the population will have 5G coverage by 2027.

5G is expected to deliver faster and better mobile broadband services to consumers and businesses, and to enable innovative new services for industry sectors, including manufacturing, transport, immersive technologies and healthcare.

The roll out of 5G will require significant investment by mobile network operators and other players in all network domains, including spectrum, radio access network infrastructure, fibre backhaul and core networks.

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5 Local Full Fibre Networks programme (LFFN)
The Government is clear that network competition between MNOs has been an important driver of mobile investment and expects that this will continue to be the case for 5G.

As far as the Government is concerned, there is no magic number of mobile network operators. Some argue that consolidation would create greater incentives for investment, whilst others say there is no significant difference in investment between four and three market players.

Mobile investment should be closely monitored by Ofcom and appropriate options considered if it were to become clear that the current market structure was not supporting network investment in 5G at sustainable levels.

**Convergence between full fibre and 5G**

In the longer-term, the Government expects to see a more converged telecoms sector.

Fixed fibre networks and 5G are complementary technologies, and 5G will require dense fibre networks. In some places, 5G may provide a more cost-effective way of providing ultra-fast connectivity to homes and businesses.

The technology synergies between 5G and fixed networks are likely to create strategic advantages for those operators that have interests in both.

The policy and regulatory framework should be sufficiently flexible and forward-looking to reflect the growing convergence between fixed and mobile networks and services. This could be achieved through:

- Removing practical obstacles or barriers to converged networks;
- Allowing operators to benefit from unrestricted usage of Openreach’s passive infrastructure for the provision of mobile backhaul services.

**Next steps**

The Review document sets out a national, long-term strategy for digital connectivity. The Government, Ofcom and industry must work together to make it happen.

The Government will create the supportive policy conditions and will look to industry to attract the necessary capital, roll out the infrastructure and promote take-up.

The EU’s new directive for electronic communications – the EECC – is currently under negotiation. It is likely to be adopted by the EU shortly. If adopted, the Government is minded to implement, where appropriate, the substantive provisions in UK law, on the basis that it would support the UK’s domestic policy objectives. This will enable the extension of market review periods to five years and provide mechanisms to aid fibre network roll out in certain areas.

The conclusions of the Review will form the basis of the Government’s Statement of Strategic Priorities to Ofcom. In particular, the Statement will emphasise the importance of promoting investment as the key to achieving the UK’s connectivity ambitions.
The delivery of this national strategy is a core part of the UK’s Industrial Strategy and is of fundamental importance to the country’s future global competitiveness. The Government will therefore monitor progress on an annual basis and undertake a full review of the strategy’s impact after three years.
4. Summary of Supporting documents

Future Telecoms Infrastructure Review: Annex A
A report for DCMS, Frontier Economics, 13th July 2018

The DCMS commissioned economics consultancy Frontier Economics to produce a report on how investment in Fibre to the Premises (FTTP) infrastructure will evolve over the next 25 years under the current market and regulatory framework compared with a range of alternative market models.

The report finds that the ‘baseline’ or current scenario is unlikely to deliver the desired outcomes, with fibre coverage reaching c.75% of premises in 20 years. Overall, it is likely to fall short of the Government 2025 target (reaching 12m premises instead of 15m) and the 2033 target for national coverage (reaching only c.60%).

Alternative model 1: Enhanced competition
This model relies mainly on stronger network competition to deliver more widespread fibre rollout. It is projected to deliver FTTP coverage of >80% in 15 years, compared with c.60% under the baseline scenario. The industry build rate is 3 million premises per annum, with BT and new entrants building at higher rates than the baseline. The total cost of deployment is expected to be £32.3 billion to cover 100% of premises, compared with £20.3 billion for the monopoly scenarios.

The key benefits are expected to include innovation, resulting in more choice, better quality and lower prices. It can also be implemented without delay. However, the cost of deployment is higher than other options due to network duplication, and it is not projected to deliver 100% coverage as some areas remain uneconomic. Therefore, ‘external’ funding may be required.

Alternative model 2: National monopoly
This model could, in principle, deliver 100% coverage, support nationally uniform prices and result in lower deployment costs (as there is no network duplication). The total cost is expected to be £20.3 billion to cover 100% of premises. However, this model also has drawbacks:

It greatly reduces network competition, both now and in the future, which the report says is likely to have a negative impact on quality, choice and innovation. This has reportedly been the experience to date in Australia which has taken the national monopoly approach to fibre rollout.

The model involves a significant departure from the current approach, raising a number of issues related to implementation: it will require a new legal/regulatory framework, compensation mechanisms for acquiring existing altnet FTTP assets, and is highly likely to require a lengthy implementation phase.

Alternative model 3: Franchising of regional licences
Under this model, regional franchises are awarded with exclusivity for a period of time, to cover the whole of the UK, in a competitive tendering process. This model creates incentives to rollout FTTP networks quickly by providing exclusivity for a period of time. It has similar drawbacks of
the National Monopoly model, though allows in principle the re-introduction of network competition at a later stage (after exclusivity period has ended).

**Government’s response**

In its final review document, the Government does not explicitly state that it intends to follow any of the four scenarios outlined by Frontier Economics. However, it does say that its preferred model promotes competition where possible but intervention where necessary. It also refers to the cost of deployment as in the region of £30 billion. Indications are therefore that the Government favours the enhanced competition model.

**Telecommunications Infrastructure International Comparison: Annex B**

_A report for DCMS, NERA Economic Consulting, 30 March 2018_

The DCMS asked NERA Economic Consulting to conduct international comparison of how the ultrafast telecoms infrastructure has worked in: Australia, France, Germany, New Zealand, Spain and Sweden.

The report concluded that consumer demand is driving the deployment of Next Generation Access (superfast) broadband, but not FTTP. In countries where FTTP deployment is widespread, it has been driven by a combination of policy decisions and national geographic and market circumstances.

The report concludes that if the UK Government wishes to foster FTTP deployment it should:

- Design and implement specific policy measures tailored to UK circumstances
- Base its telecoms infrastructure policy on infrastructure competition. In areas where network competition is not foreseen, it should foster competition in tenders to any suitable operator.
- Consider relaxing ex-ante fibre regulation and broaden the scope of competition policy.
- Consider a combination of public subsidies and other support, wireless and wireline technologies and private investment.

**Government’s response**

The Government’s decision to focus on competition where possible and intervention where necessary indicates that, in broad terms, it intends to follow NERA’s suggested approach.

**UK Mobile Market Dynamics: Annex C**

_A report for DCMS, Frontier Economics, July 2018_

In light of the potentially significant investment required to roll-out 5G, and the different use cases that this may support, DCMS commissioned Frontier Economics to consider the likely outcomes under the current market structure, and to consider alternative market models that may be required to deliver the full capabilities of 5G. The report considers three market models and their potential to deliver improved outcomes relative to the existing market structure (the ‘status quo’):
Single Wholesale Network — as full roll-out of 5G may involve significant investment in network equipment, one policy option is to move to a market with only one network which operates at the wholesale level allowing multiple retail players access to the network in order to deliver services to consumers.

Market expansion — a continuation of the existing competitive market with entry into the market by a wider range of players, alongside the existing MNOs, at a network or infrastructure level. This model could involve neutral hosts for provision in some areas – effectively localised versions of single wholesale networks; and flexible spectrum policy.

Market consolidation — a move to a market with a smaller number of MNOs through consolidation of existing MNOs i.e. through mergers of MNOs.

Government’s response
In its final review document, the Government says it recognises there is a debate about the optimal level of competitive intensity and consolidation in the UK mobile sector, and notes the number of recent mobile merger control cases across Europe, with a range of outcomes. The Government is clear that network competition between MNOs has been an important driver of mobile investment and expects that this will continue to be the case for 5G.

The Government says mobile investment should be closely monitored by Ofcom and appropriate options considered if it were to become clear that the current market structure was not supporting network investment in 5G at sustainable levels.