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Three's submission to the Digital Communications Infrastructure Strategy.

Introduction.

1. This is Three's response to the Digital Communications Infrastructure Strategy.
2. Three is the UK's challenger mobile operator. We have helped to drive competition in the UK mobile market through the introduction of market changing consumer propositions, including All You Can Eat Data, Feel at Home, 4G at no extra cost and free calls to 0800 numbers. We have campaigned for reform of structural bottlenecks, which have hampered growth and caused consumer harm. This has included simpler mobile switching and lower mobile termination and data roaming rates.
3. However, we believe that there is more to do in the future to make the market deliver for consumers and citizens. This includes structural reform to unlock investment and innovation, and maintain current levels of competition.
4. Three's network was built for the internet. On average, our customers use a staggering 2.6GB per month and our network carries 45% of all the UK's mobile data. All this is possible despite only having 14% of the UK's mobile spectrum. As a consequence, we have a unique understanding of the resource efficiency and infrastructure investment required to deliver a high quality and reliable data experience. We also understand how the current regulatory environment is supporting, and in some cases inhibiting, necessary investment for future growth.
5. Three's response is divided into two parts, the first a more general response on the overarching themes set out in the Consultation; the second providing short answers to specific questions most relevant to Three. The answers to specific questions can be found in **Annex 1**.

Future of the Communications Market: Scenarios of future demands.

6. It is our view that scenario 3 is broadly the most accurate and realistic; although any prediction made today - no matter how methodically modelled - will not fully reflect the data demand or the technological landscape of 2025.

7. It is clear that UK citizens will continue to consume ever greater amount of data. This is due to the increases in smartphone ownership, alongside the development of data-hungry mobile apps, the use of video streaming sites and growth of the 'Internet of Things'. These trends will drive demand for near constant connectivity, whether on the move or at home, with lower levels of patience for time delays and faults.

Future of the Communications Market: How best to meet these demands.

8. The scenario setting referred to above provides a basis for understanding the UK's future data needs and should encourage Government, the regulator and industry to work together in order to deliver the infrastructure required. However, there are a number of further issues that must be considered if Government is to fully understand future demand.
9. We note, that while it is important to understand future data demands, the scenarios explored by Government do not fully capture either the willingness or ability of consumers to pay.
10. Nor do the scenarios capture the willingness of operators to invest. Current return on capital in the mobile market stands at 1-2%,¹ which is much lower than the 9% return that Ofcom have identified as the minimum expected return.² Even this low level of return is threatened by public interventions that inflate costs.
11. Structural reforms are urgently needed to unblock competitive bottlenecks. This will unlock investment and reduce costs. Without these changes, it will be incredibly difficult and challenging to achieve any of the scenarios described.
12. Therefore, in addition to mapping and working towards given scenarios for future data demand, Government must also set out a clear vision for the type of communications market it wants to deliver this scenario. Decisions regarding regulatory reform and public interventions will flow from this vision.
13. We believe that there given the current state of the market and existing regulatory landscape, there are three different scenarios most likely to characterise the UK communications market in 2025. These are:
 - A) A fair and open communications market, where promoting and maintaining competition is the principle that drives communication policy at all levels. Action has been taken to unblock current bottlenecks and barriers that currently disincentives investment will have been tackled. Consumers are in control, driving the competition necessary for the market to deliver the access and capacity

¹ MNOs statutory financial reports

² Ofcom's Mobile Call Termination market review consultation

consumers desire. There is no need for public intervention. Better deals are unlocked for consumers without building in new costs to the price of contracts and services.

B) The status quo is retained. While competition continues to underpin much communication policy, no action is taken to unblock the existing bottlenecks which are inhibiting fair and open competition. These bottlenecks inflate costs for operators and reduce the low return on capital investment. Future growth and investment are jeopardised. Public intervention is likely to be required to deliver the improvements in coverage and service levels identified in the scenario. Consumers are prevented from exercising proper choice and benefitting from the best price deals.

C) Commitment to promote and maintain competition no longer underpins communication policy. This will lead to a reduction of competition at the wholesale level. The likely impact, increased consumer prices, will restrict demand. Without competitive pressure to drive improvements in coverage levels or quality of service, public intervention would be required to deliver any future improvements - or even to retain the current level of service.

14. We believe that it is the best interest of consumers, business and industry that the Government and regulator should take active steps to deliver Scenario A. It is only under the conditions described under Scenario A that the Government will ensure that data demand is not inhibited by accessibility, availability or affordability. It will drive efficient investment in communication sector.

15. For this to become a reality, urgent action is needed to unblock the structural bottlenecks that are currently restricting fair and open competition. We recognise, that these are complex problems which will take time to solve. In some cases, it will take even more time for the benefits to flow through to the consumer. This is why action is needed now, so that the market is in sufficient health to deliver the infrastructure required by 2025.

16. Below we have outlined the areas that need to be tackled as part of the Digital Communications Infrastructure strategy, and suggested potential remedies that could be implemented.

Spectrum: Driving fair and open competition.

17. We understand that spectrum policy is being considered through the UK spectrum strategy. However, in practice it is impossible to separate the provision of spectrum and the ability of the communications market to deliver the infrastructure required to deal with the data demand scenarios.

18. Ensuring a fair and equitable distribution of spectrum is the cornerstone of a competitive market. The past two auctions, in 2000 and 2013, have included measures to increase and/or preserve competition and the consumer benefits that flow from it.
19. These interventions have been successful. Evidence shows that in countries which have a challenger mobile operator, prices are on average 50% lower.³ In the UK, this translates into a consumer benefit of between £5–10 billion, and £7.5 – 15 billion benefit of GDP.⁴
20. However, without a clear commitment to fair and open competition in future spectrum allocation, we believe the benefits that have been accrued through interventions in the design and execution of previous auctions are at risk.
21. When considering the lessons from the 2013 auction, the National Audit Office (NAO) concluded: “Ahead of any [future spectrum] sale, Ofcom should conduct a review of the competitive operation of mobile telecommunications markets”.⁵
22. Government and Ofcom must take the NAO’s advice, and ensure there is a review into the competitiveness of the telecoms market. If necessary, Government must be prepared to direct Ofcom to do so. The repercussions if Government and Ofcom fail to act will be significant. The US offers a useful case study as to the consequence of an unfair distribution of spectrum. There, competition has been stifled by an uneven distribution of low frequency spectrum. US consumers pay three times the amount for mobile services than their UK counterparts do.⁶ As a result, the US Government is now seeking to change their policy for future spectrum sales to take into account competitive outcomes.
23. In particular, consideration must be given as to whether to retain the spectrum caps from the 2013 auction– both for total amount of spectrum and low frequency spectrum. This will ensure that the competitive benefits flowing from previous auctions are secured, to the benefit of consumers.
24. If action is not taken to ensure future spectrum support fair and open competition, it highly unlikely the market will deliver the infrastructure required to deal with any of the scenarios described.

³ Source: Rewheel (2013).

⁴ Source: Three data.

⁵ Source: <http://www.nao.org.uk/wp-content/uploads/2015/03/4G-radio-spectrum-auction-lessons-learned-summary.pdf>

⁶ Source: Ofcom International Communications Market Report (2013), figure 1.13.

Incentivising investment in currently under-served areas.

25. In the UK, robust competition at a network level has delivered good coverage. Over 99% of the UK population is covered by at least one mobile provider, compared to just 90% in Germany.⁷
26. Furthermore current network investment plans, including the rollout of low frequency spectrum, will lead to a significant uplift in rural coverage. Yet as the scenarios reflect, there is a growing expectation among consumers and policy makers that mobile coverage should be ubiquitous.
27. For this to be achieved through competitive network rollout, action must be taken to unblock the competitive bottlenecks which are currently leading to inflated costs and disincentivise investment.
28. If this reform does not happen, and with the current low return on capital investment in the mobile sector, any incremental increase in coverage is likely to require public intervention at a significant cost to the Exchequer. Furthermore this intervention will not provide a long-term answer to the structural issues that created the problem, meaning further public investment is likely to be required in the future.
29. To enable competitive rollout, Government must urgently complete reform to the Electronic Communication Code (ECC) and Ofcom must consider how to promote competition in the transmission market.

Electronic Communication Code

30. Market failure in the site rental market, particularly in rural locations, are stifling investment and reducing the scope for network extension.
31. A combination of regulatory, planning, technological and geographical limitations mean that in rural areas operators have very little choice in where they can place their infrastructure and equipment – in the hardest to reach areas there may be no choice at all. This has inflated cost and build out times.
32. In urban areas there will be a choice of commercially and technologically viable sites. Yet in a remoter area may be that a mast can only be placed on a hill in order to serve the surrounding, lower level villages.

⁷ Source: Ofcom International Communication Market Report 2013

33. The current regulatory framework enables landowners to charge high ransom rents for a mobile site, whereas rentals paid by other critical national infrastructure providers, such as energy, are much lower. Although electricity pylons and ground-based telecoms masts are similar in appearance, size and the area of land they occupy. However the average annual rental for a ground-based mast is approximately £5,450, the 'standard fee' paid by National Grid for a 60ft pylon is around £142, roughly one fortieth of the rent paid for a telecoms mast. This difference is not sustainable in the long term.
34. This situation is made worse by the ability of landlords to use the upgrade share or repair of sites to trigger a rent review.
35. To incentivise investment in under-served areas, action needs to be taken to ensure networks pay a fair rent on rural sites. This can be achieved through reform of the Electronic Communications Code, to reflect the fact that the rural site rental market is neither functioning nor competitive, and to bring the rights of mobile operators in line with other essential services.
36. The Code currently refers to 'market value'. Instead, the Code must refer to 'alternative use value'. This will enable operators to pay rents more closely aligned with the energy companies. Additionally, the Code must also be amended to allow operators fast access to the infrastructure that their networks – and millions of customers – rely on, without risking further fiscal penalty. There is clear that the Code should be amended to allow operators limited, tailored injunction rights, as well as introducing a new statutory access right (in addition to current contractual rights) to guarantee access to equipment given a 48 hour notice period.
37. These reforms will have a transformative effect on the rural economy, removing the largest obstacles to increased mobile coverage, faster data speeds and more reliable services in rural areas by ensuring meaningful competition, to the benefit of consumers.
38. Without such reform, Government ambitions as set out in the Digital Communication Infrastructure strategy are untenable. Any incremental improvements in coverage will need to be funded by Government.

Transmission

39. To support the data levels envisioned in any of scenarios, sites will increasingly need access to fibre Ethernet backhaul. Yet the fundamental lack of competition in transmission across most parts of the UK will jeopardise the ability of network to meet

the future data needs of customers and deliver best value. We have identified the following consequences created by a lack of competitive pressure:

- Limited availability of mobile internet services in rural areas – access to affordable and high-speed backhaul is key to improving the consumer experience in the UK's rural and remote communities. Problems associated with a lack of competition in the leased line market disproportionately impact rural communities.
- There is no downward, competitive pressure on price – this has led to BT Wholesale still charging on the basis of bandwidth, which is preventing networks from supplying the capacity current and future mobile consumers need. It also leads to higher consumer prices, as networks are charged more, the more customers use.
- There is significant abuse of market power – current contracting arrangements specify that BT must be the provider for a very large number of sites. As there is no alternative, operators have no choice but to sign. In practice, this means that operators often cannot choose another provider in areas where that choice exists, as they have to fulfil the obligations of their contract. This prevents new entrants competing in the market.

40. BT is the dominant provider of leased lines and this unlikely to change. Ofcom have found that there is only a potential for choice of two or more leased line providers in 8% of postcodes,⁸ and with this choice concentrated in large urban areas. Determined intervention is needed to promote competition in this market and offset BT Wholesale's cost and reach advantage. Any action to introduce elements of competition into a market which is currently a monopoly will be difficult.

41. There is an opportunity for Ofcom to explore remedies in their Business Connectivity Market Review. However the scope of this Review must be wider. Government must work together with Ofcom to ensure that the transmission market is clearly within the scope of this review. Measures must include steps to improve competition and lower the cost of leased lines, particularly in rural areas. For example Passive Infrastructure Access, which would force BT Openreach to open up its ducts to other Internet Service Providers, would allow competitors to use their dark fibre. This will lower the barrier to entry and promote competition, helping to deliver the best value and service to consumers.

The ability of the regulatory framework to remain up to date.

42. In a fast moving and dynamic sector, it is important that the regulatory framework keeps up to date with new business models and changes in technology. For this to be

⁸ Source: Ofcom Business Connectivity Market Review Statement (2013).

achieved, the regulator needs to be agile, able to make fast and effective decision- particularly those which challenge incumbent advantage and drive competition.

43. The current “on the merits” regime for appeals to Ofcom, prevents the regulator from making timely and efficient decisions. It is slow, cumbersome and allows for a judicial rehearing of every Ofcom decision by the Competition Appeal Tribunal (CAT). This acts as a significant barrier to innovation and reform as it enables litigants to leverage the judicial process for commercial advantage, by threatening to appeal whenever they are unhappy with the decision. This has handicapped Ofcom's ability – and appetite - to intervene in the market and promote competition.
44. For consumers and competitors, this means less reform and at a slower pace. The likelihood of the legal challenge of regulatory decisions has also led to a steady and, ultimately, unhealthy increase in the length of the overall consultation process as well as delays in regulatory decision making. This has driven up costs and increased market uncertainty. Independent analysis carried by Economic Insight using Government data estimated that reform in line with Government proposals would bring a net benefit of reform of £238m– largely the result of faster appeals leading to more reform, lower prices and more competitive offerings.
45. The ability of the market to deliver the necessary communications infrastructure depends on the ability of Ofcom to be able to promote competition and regulate accordingly.

Conclusion

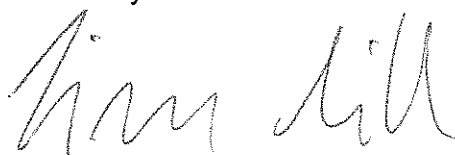
46. It is clear that by 2025 the demand for data will have increased, as will have consumer expectations for both coverage levels and the quality of service received. For the UK to meet this demand, significant infrastructure investment will be required.
47. While we recognise the usefulness of the Government's scenario planning, we believe that these scenarios must also consider both the willingness of consumers to pay and the willingness of operators to invest. Government must also have a coherent vision for these factors.
48. The infrastructure to support either of the scenarios will only be achieved once the current competitive bottlenecks, that prevent fair and open competition, are tackled. As a priority Government, working with Ofcom, must:
 - Ensure there is a commitment to fair and open competition in future spectrum sales
 - Reform the Electronic Communication Code to enable investment in under-served areas
 - Work with Ofcom to promote competition in the transmission market

- Reform the current appeals regime, which is slowing decision-making and encouraging regulatory inertia.

49. Government need to act now, in order to ensure the competitive benefits that will flow from these reforms improve the communication market in the long-term. This is the only way to ensure that industry is in a position to invest in the infrastructure necessary to ensure the UK remains a leading digital nation.

50. For further information please contact Simon Miller, Head of Government and Regulatory Engagement at simon.miller@three.co.uk

Yours sincerely

A handwritten signature in black ink, appearing to read 'Simon Miller', with a stylized, cursive script.

Simon Miller

Head of Government and Regulatory Engagement

Annex 1:

Q1 The consultation outlines proposed changes and high-level observations about the Government's role. Views are sought on:

- a) Is the given outline an appropriate role for Government?**
- b) What other high level principles might the Government adopt?**
- c) What resources do you consider the Government should aim to deploy to**
- d) effectively manage its role?**

See paragraphs 7-16; 46-50

Furthermore, the Government's role should be based on a clear analysis and evidence of the scope and extent of anticipated market failure, namely where private sector investment alone is unlikely to meet consumers, citizens and businesses' needs for future digital communications infrastructure.

As the Consultation recognises, private investment has already led to substantial benefits to digital communications users, especially where stimulated by effective competition. Our response nevertheless identifies a range of potential market failures, where Government intervention is necessary to promote investment and innovation, and achieve the end-benefits to digital communications users and the wider economy. The chief examples include:

- promoting competition, and if necessary directly regulating access to scarce strategic resources, such mobile spectrum, access to fibre backhaul, and access to sites on which to build digital communications infrastructure;
- directly subsidising, or other mechanisms, to promote infrastructure investment in rural areas, which are typically uneconomic to serve through private investment alone.

Section 2: What might future demand look like: Core assumptions underpinning demand scenarios

Q24 Do you expect commercial providers to deliver future infrastructure and meet demand on a purely commercial basis, or is some form of public intervention likely? If public intervention is likely how might that work with the commercial provision of infrastructure? What form might that intervention take?

See paragraphs 7-16; 25-41

As above, commercial providers should be expected to deliver future infrastructure and meet demand without the need for public intervention in the absence of market failure. There are nevertheless clear instances of actual and potential market failures in the digital communications sector which justify public intervention and indeed are necessary to meet future UK digital communications infrastructure needs.

Q25 Which current or draft legislation might prevent or facilitate the emergence of any of the scenarios?

See paragraphs 25-41; 42-45

Q26 Do you have views on which scenario (or combination of scenarios) is most likely and should influence the development of future strategy?

See paragraphs 6-7

As noted above, the Consultation scenarios do not fully capture either the willingness or ability of consumers to pay. This is a considerable limitation, recognised in the industry,⁹ which makes it difficult to determine the scope and extent of necessary public intervention.

For example, if consumers were willing and able to pay prices for services that were sufficient to support the necessary investment required to meet any given demand scenario, then private investment should be sufficient to meet the future infrastructure needs.

However, if customers are unwilling and/or unable to pay to meet the future investment needs, then the Government needs to determine (1) what significance should be attached to each scenario, if any, and (2) what justification there would be public funding to meet the gap between what commercial providers are willing to invest and the total necessary investment.

This highlights the problem of relying on unrestrained demand forecasts as a basis for policy making. Namely, the demand for many things would grow exponentially if offered for free. However, this does not provide a good basis for determining the existence of a market failure or justification for public policy intervention.

Instead, in addition to the policy measures that Three advocates above, Three considers that Government should also undertake a market analysis of the functioning of digital communications markets in the UK (with support if necessary from Ofcom), to determine the appropriate role for, scope and extent of public policy intervention.

Section 4: Competition and regulation

Q27 How might efficient investment in communications infrastructure be supported, for example by changes in the regulatory framework?

See paragraphs 7-16; 42-50

⁹ For example, "Do you need a mobile data forecast to estimate spectrum demand?" Plum Consulting, June 2014.

Q28 Are any further regulatory measures necessary to incentivise the rollout of future mobile infrastructure in currently underserved areas?

See paragraphs 25-41

Q33 In what ways can you see competition driving technological change in the UK in the future?

See paragraphs 7-16;

Q34 How can the regulatory framework keep up to date with new business models and changes in technology?

See paragraphs 42- 50

Section 5: Facilitating and encouraging investment

Q38 Views are sought on whether there are any additional actions the Government should consider to ensure:

- a) That the provision of all areas of the UK's digital communications infrastructure remains competitive in order to ensure that the UK can take full advantage of growth opportunities in the Digital Age;
- b) Aside from legislation and adapting the regulatory framework in the broad sense which other actions should the Government take to encourage investment in communications infrastructure?
- c) That potential investment in the provision of digital communications infrastructure offers a suitable risk and reward profile to ensure that they can be financed by the private sector.

See paragraphs 17-24