BIG

A BRITISH INFRASTRUCTURE GROUP REPORT

Mobile Coverage: A good call for Britain?

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Who is the British Infrastructure Group?

The British Infrastructure Group of MPs (BIG) is led by The Rt. Hon Grant Shapps MP and is dedicated to championing better infrastructure across the United Kingdom (UK). The core purpose of the group is to ensure every opportunity for growth is seized, with bold and thoughtful recommendations, backed by authoritative research and evidence. Each BIG report focuses on a different aspect of national infrastructure, identifying shortcomings and setting out measures for improvement. BIG firmly believes that the UK can and should lead the world in infrastructure, technology and innovation.

This BIG report has investigated how the Government can improve mobile coverage for the millions of UK customers who receive inadequate service. In 2014, the Government pursued a £5 billion investment agreement with the four main Mobile Network Operators (MNOs) to improve mobile coverage in the UK. However, the MNOs are unlikely to achieve the targets of this agreement by the stated deadline of December 2017. [1]

Although the British mobile communications sector has flourished through sustained private sector investment, comparing favourably with EU markets in terms of service costs and technological advances, visitors to Britain have consistently enjoyed better and broader mobile coverage. Whereas British consumers remain stuck with a single provider, international SIM cards roam between different networks. This is a bad call for connectivity in Britain.

Instead, this report takes a second look at the costs and benefits of national roaming, and urges the Government to reconsider this approach on a smaller scale, in areas severely affected by 'not spots'. In light of Ofcom recently fining Vodafone £4.6 million for breaching consumer protection rules, the treatment of mobile consumers requires greater scrutiny. This BIG report also urges the passage of the Digital Economy Bill, to kick start much-needed reforms to the Electronic Communications Code and to provide Ofcom with the ability to ensure that mobile operators become accountable to consumers. Britain is yet to achieve mobile coverage for all. The Government must rethink which policies are the best call for Britain.

The Rt. Hon Grant Shapps MP

[1] Culture, Media and Sport Select Committee, 'Inquiry into establishing world-class connectivity throughout the UK announced' (Accessed: 15/09/16: http://www.parliament.uk/business/committees/committees-a-z/commons-select/culture-media-and-sport-committee/news-parliament-2015/terms-of-reference-connectivity-15-16/).

MPs in support of 'Mobile coverage: A good call for Britain?':

The Rt. Hon Grant Shapps MP	Welwyn Hatfield
Johnny Mercer MP	Plymouth Moor View
Peter Heaton-Jones MP	North Devon
James Heappey MP	Wells
Flick Drummond MP	Portsmouth South
Charlie Elphicke MP	Dover
Mark Pritchard MP	The Wrekin
Jim Shannon MP	Strangford
Steve Double MP	St Austell and Newquay
Michael Tomlinson MP	Mid Dorset and North Poole
Dr Andrew Murrison MP	South West Wiltshire
Daniel Kawczynski MP	Shrewsbury and Atcham
Heidi Allen MP	South Cambridgeshire
Ian Blackford MP	Ross, Skye and Lochaber
Jonathan Lord MP	Woking
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Jonathan Djanogly MP	Huntingdon
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Karen Buck MP	Westminster North
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Philip Davies MP	Shipley
Jacob Rees-Mogg MP	North East Somerset
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Nic Dakin MP	Scunthorpe
Hywel Williams MP	Arfon
Martin Docherty-Hughes MP	West Dumbartonshire
David Warburton MP	Somerton and Frome
Jake Berry MP	Rossendale and Darwen

Sammy Wilson MP	East Antrim
Vernon Coaker MP	Gedling
Nigel Huddleston MP	Mid Worcestershire
Chris Davies MP	Brecon and Radnorshire
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Ben Howlett MP	Bath
Royston Smith MP	Southampton Itchen
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Richard Drax MP	South Dorset
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Nigel Evans MP	Ribble Valley
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Helen Grant MP	Maidstone and The Weald
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Stephen Crabb MP	Preseli Pembrokeshire
John Howell MP	Henley
Tom Blenkinsop MP	Middlesbrough South and East Cleveland
Sir Roger Gale MP	North Thanet
Bernard Jenkin MP	Harwich and North Essex
Marcus Fysh MP	Yeovil
Lucy Allan MP	Telford
Andrea Jenkyns MP	Morley and Outwood
Nusrat Ghani MP	Wealden
Geoffrey Clifton-Brown MP	The Cotswolds
Graham Evans MP	Weaver Vale
Dr Alasdair McDonnell MP	Belfast South
Anne Main MP	St Albans

Peter Aldous MP	Waveney
Stephen Hammond MP	Wimbledon
The Rt. Hon Caroline Flint MP	Don Valley
Mark Williams MP	Ceredigion

Executive Summary

- **Stuck with a single provider:** It is absurd that visitors to the UK receive better and broader mobile coverage, because foreign SIM cards enable roaming across national networks. In contrast, there is no such agreement amongst our mobile phone providers for Britons. On average, British mobile users can only access 4G coverage 53% of the time.[2] Even worse, some mobile operators such as Three only provide 4G coverage to domestic consumers 43.7% of the time, leaving over half of their consumers without high-speed internet coverage.[3] This is a bad call for connectivity in Britain.

- **A bad call:** In December 2014, the Government agreed to give the four large mobile network operators (MNOs), Vodafone, O2, EE and Three, another chance to fix mobile 'not spots'. The MNOs committed to investing £5 billion to improve mobile coverage across the UK by 2017.[4] However, mobile coverage in the UK has not improved significantly in the past two years. For example, the failed Mobile Infrastructure Project, which closed in March 2016, identified 600 potential sites for new phone masts in 2013. These masts would fill in the 'not spots' where the sector provides no coverage. However, by the end of the financial year 2015-16, the project had built just 75 masts. [5] This leaves 525 potential mast locations in the UK where mobile coverage remains non-existent. The key targets of the £5 billion agreement, especially the industry's commitment to provide mobile voice coverage to 90% of the British geographic area, are highly unlikely to be achieved in time for the deadline next year.

- **No more not-spots:** With one third of mobile phone users, or 17 million people, across the UK reporting poor or no reception at home,[6] there remains a considerable number of 'not spots' in Britain. These are areas which have coverage from at least one but not all four mobile operators. 'Not spots' simply should not be so widespread. The latest estimates suggest that 28% of all rural areas in the UK remain without coverage.[7] BIG therefore calls on the Government to request an interim update in December 2016 from the mobile operators, about their progress towards providing 90% geographic voice coverage across the UK by next year.

[2] Average calculated using data recorded by Which? & OpenSignal (Oct., 2016). 'State of Mobile Networks: UK', (Accessed: 10/10/2016: https://opensignal.com/reports/2016/10/uk/state-of-the-mobile-network/).
[3] Ibid.
[4] Department for Culture, Media and Sport, (Dec., 2014). 'Government secures landmark deal for UK mobile phone users', (Accessed: 10/10/16: https://www.gov.uk/government/news/government-secures-landmark-deal-for-uk-mobile-phone-users).
[5] Source: Rathbone, D. (2016). Hirst, D. (2016). 'Mobile Coverage in the UK: Government plans to tackle 'mobile not-spots'', *House of Commons Library, CBP-07069,* p. 7.
[6] Source: uSwitch Customer Satisfaction Survey (Undertaken by Censuswide, October 2016).
[7] Ofcom, (2015). *Connected Nations Report 2015,* p. 32.

- **Mobile roaming:** National roaming provides a solution to eliminating partial 'not spots' by enabling mobile consumers to use different mobile operators when they do not receive signal from their primary provider. This BIG report assesses the benefits and limitations to a system of national roaming, concluding that mobile roaming, on a smaller scale, could instead be targeted in areas severely affected by partial 'not spots'. This approach is known as 'macro not spot' roaming, and the DCMS should undertake an impact assessment to determine whether this policy could be implemented in areas of the UK that need mobile coverage the most.

- **Protecting consumer rights:** Consumers remain at risk from being hit with large exit fees if they decide to terminate their contract, even if it is because they have experienced poor quality mobile service from the operator. A Minimum Service Obligation should be established by Ofcom to define consumer rights in the mobile communications industry. If an MNO fails to deliver a high standard of service, consumers should be able to terminate their contract free of charge. Reforms to consumer rights should be included as a key provision in the Digital Economy Bill, due to be brought to Committee stage in the House of Commons at the time of writing.

- **Reform the Electronic Communications Code (ECC):** The ECC contributes to determining the rental fees that mobile operators pay to land owners. Rental fees are essential in establishing the commercial viability for providing mobile coverage in 'not-spots' and 'partial not-spots'. Previous estimations show that a reform of the ECC, through specific changes to the valuation system, has the potential to reduce mobile operator costs, saving the sector up to £1.02 billion over the next 20 years.[8] Reforms to the ECC must be implemented as primary legislation immediately after the passage of the Digital Economy Bill.

- **Bring British mobile communications policy into the twenty-first century:** BIG argues that it is time to sort out the mobile coverage problem once and for all. The Digital Economy Bill represents a vision for a connected Britain, and its passage must be prioritised. The Bill proposes that Ofcom should be allowed to fine any mobile operator that does not meet its commitments to improving mobile coverage as stipulated in the £5 billion agreement, by the deadline of December 2017.[9] Consequently, the Bill must be passed with plenty of time ahead of the deadline for the investment agreement next year. This would provide Ofcom with the ability to ensure that the mobiles sector is accountable for the service it provides.

[8] DCMS, (2016). 'A New Electronic Communications Code', p. 7.
[9] See the Digital Economy Bill- Explanatory Notes, (Accessed: 10/10/16: http://www.publications.parliament.uk/pa/bills/cbill/2016-2017/0045/17045.pdf).

Introduction

1. Mobile phones are essential to everyday life. 95% of British households now use mobile phones and 71% of domestic businesses consider mobiles to be crucial or very important to their operations.[10] However, the quality of mobile phone coverage has remained alarmingly poor in rural areas of the UK. Over a third of consumers in rural areas report a frequent lack of mobile signal.[11] Over six in ten Britons recently reported 'patchy' signal quality and cut calls indoors.[12] This BIG report will investigate whether the solution to poor mobile coverage lies in a system of reforms to mobile roaming, and outlines how reforms to consumer protection policies and the Electronic Communications Code (ECC) can make a big difference to our mobile communications sector. In November 2014, the Department for Culture, Media and Sport (DCMS) launched a consultation into how poor mobile coverage could be mitigated through national roaming, infrastructure sharing and other measures. The following month, the Government instead pursued a £5 billion agreement with the four largest mobile operators in the sector, Vodafone, EE, O2 and Three, to improve mobile infrastructure and coverage by December 2017. With the deadline fast approaching, we ask; was this a good call for Britain?

2. The British mobile communications sector is comprised of four dominant Mobile Network Operators (MNOs): Three; O2; EE, and Vodafone. Secondary to these four providers are 21 additional 'Mobile Virtual Mobile Network Operators' (MVNOs).[13] Instead of possessing their own network infrastructure, MVNOs retain commercial agreements with the four MNOs to use their networks. The sector is regulated by Office of Communications (Ofcom), and, in many respects, it functions well. Significant and sustained private sector investment has transformed the industry over the past two decades, delivering valuable benefits to British consumers, as detailed in Figure 1. By May 2015, 42.4% of UK premises had 4G coverage provided by all four of the MNOs.[14] Customer satisfaction with mobile operators has remained relatively high, at 89% in 2015 and 88% in 2013 respectively.[15]

Figure 1

Type of Mobile Coverage	Year of initial rollout	Function
2G	1992	Uses digital transmission to support voice, low-speed data communications and short messaging services.

[10] Rathbone & Hirst, (2016). 'Mobile Coverage in the UK', *House of Commons Library, CBP-07069,* p. 3.
[11] DCMS, (2014). 'Impact Assessment: Tackling Partial Not-Spots in Mobile Phone Coverage', p. 1.
[12] Source: uSwitch Customer Satisfaction Survey (Undertaken by Censuswide, October 2016).
[13] Ibid.
[14] Ofcom (July 2015). *Strategic Review of Digital Communications: Discussion document*, p. 51.
[15] Ibid.

3G	2003	Provides high speed data transmission and supports multi-media applications such as video, audio and internet access, alongside conventional voice services. Mobile coverage outdoors by all MNOs has increased by 5% over the past year.
4G	2012	Designed to provide faster download and upload speeds on mobile networks.
5G	Projected: 2020	Potentially available from 2020. Research is underway on this technology.

3. The average cost of mobile communications is falling in Britain. As Figure 2 demonstrates, the amount that Britons spend on mobile voice and data as a percentage of average household spending on communications has reduced. Moreover, the average monthly mobile bill was just under £46 in 2013; a noticeable decline from £52 in 2008. This also means that the average annual bill has fallen from £628 to £548. Such a sustained decline in the mobile communications market stands in contrast to the cost of other household expenditures. In the same time period, from 2008-2013, combined gas and electricity bills increased by 31%.[16]

Figure 2: Decline in the amount Britons spend on mobile voice and data, 2009-14.

4. Although the price of mobile communications has fallen, the total cost of contracts has risen sharply. The length of the average mobile contract has increased. Although less than 1% of mobile contracts lasted for two years in 2009, by the beginning of 2010, the proportion of these contracts had risen exponentially to 50%. Now, 60% of mobile contracts are 24 months long, which is incidentally the longest length of

[16] Pardoe, A., Smith, C. & Plunkett, J. (2015). 'Calling the shots? Exploring opportunities for more assertive consumer protection in the mobile phone market', *Citizens Advice Bureau,* p. 6.

contract allowed by Ofcom under EU regulations.[17] There has also been a shift from 'Pay As You Go' services towards fixed contracts, as 75% of mobile users aged 16-44 now have a monthly mobile contract.[18] Consequently, mobile voice and data contracts have become a more substantial purchasing decision, and contracts are now locking in even more consumers than before to potentially poor services.

5. Previous Government policies to address inadequate mobile coverage include the failed Mobile Infrastructure Project, which sought to extend mobile coverage to 'not spots' by building new site infrastructure. However, the project, costing £9.1 million, only managed to deliver approximately one-tenth of the estimated 600 potential 'not spot' sites identified.[19] Alternatively, the DCMS asked the public, mobile operators and other representatives of the communications sector in its 2014 consultation about how 'not spots' could be mitigated. The key proposals included national roaming, 'infrastructure sharing' by implementing a geographic coverage obligation, or the establishment of a 'Multi-Operator Mobile Virtual Network Operator'.[20] However, the sector expressed notable opposition to the system of national roaming, and by December 2014, the Government abandoned the proposals in favour of a legally-binding £5 billion agreement with mobile operators to improve mobile infrastructure by December 2017; a deadline which is fast approaching.

6. Moreover, in July 2015, the National Infrastructure Plan Pipeline outlined Government plans to improve mobile infrastructure and broadband access through the Digital Economy Bill. Key provisions of the Bill include extending permitted development rights to taller mobile masts, and introducing legislation to reform the Electronic Communications Code (ECC), which oversees the relationship between MNOs and site providers.[21] In addition, the Bill also legislates to allow Ofcom to fine mobile operators which do not meet the targets of the £5 billion mobile infrastructure investment agreement by the deadline of December 2017. However, in order to provide this much-needed accountability, the Digital Economy Bill, which is at the Committee stage in the House of Commons at the time of writing, must be passed in advance of the December 2017 deadline.

7. Although the Government has clearly prioritised the issue of inadequate mobile coverage in recent years, this BIG report concludes that insufficient attention has been paid to considering the benefits that alternative policies to infrastructure investment could provide for consumers and the sector alike. This BIG report will take a second look at national roaming, weighting the costs and benefits to a system which would require operators to share their networks. The report concludes that a smaller-scale system of mobile roaming, targeted in rural areas most affected by 'not

[17] Ibid, p. 1.
[18] Ibid, p. 7.
[19] Rathbone & Hirst (2016). 'Mobile Coverage in the UK', *House of Commons Library,* p. 8.
[20] DCMS, (2015). 'Tackling Partial Non-Spots in Mobile Phone Coverage: Government Response to Consultation', p. 6.
[21] See: HM Treasury, (2015). *Fixing the Foundations: Creating a more prosperous nation.*

spots', could provide significant benefits to consumers and create competition within the sector. The DCMS should undertake an impact assessment of this approach, otherwise known as 'macro not spot' roaming. Additionally, consumer protection rights, such as a Minimum Service Obligation for MNOs, must be included as a provision of the Digital Economy Bill. The Bill itself must be prioritised by the Government, and passed ahead of the £5 billion investment agreement deadline in December 2017. By legislating to reform the ECC and bringing industry regulations into the twenty-first century, the Government can make a better call for the future of mobile communications in Britain.

The Coverage Problem

8. High quality and comprehensive mobile phone coverage is absolutely vital to Britain's economic success and social cohesion. Although 93% of premises in the UK are covered by 2G networks operated by EE, Vodafone and O2, voice coverage continues to be a major issue. One third of British mobile phone users, or approximately 17 million people, report poor or no reception at home.[22] This is because many mobile users are simply not customers of the mobile operators that provide coverage to specific areas. Figure 3 presents the current provision of coverage for mobile voice services in the UK, based on the available combined 2G and 3G services.[23]

Figure 3	O2	Vodafone	EE	Three
Outdoor Coverage				
Premises	98%	98%	99%	98%
Geographic	72%	77%	78%	68%
Indoor/In-car Coverage				
Premises	93%	92%	94%	93%
Motorways	97%	97%	99%	98%
A&B Roads	67%	73%	81%	73%

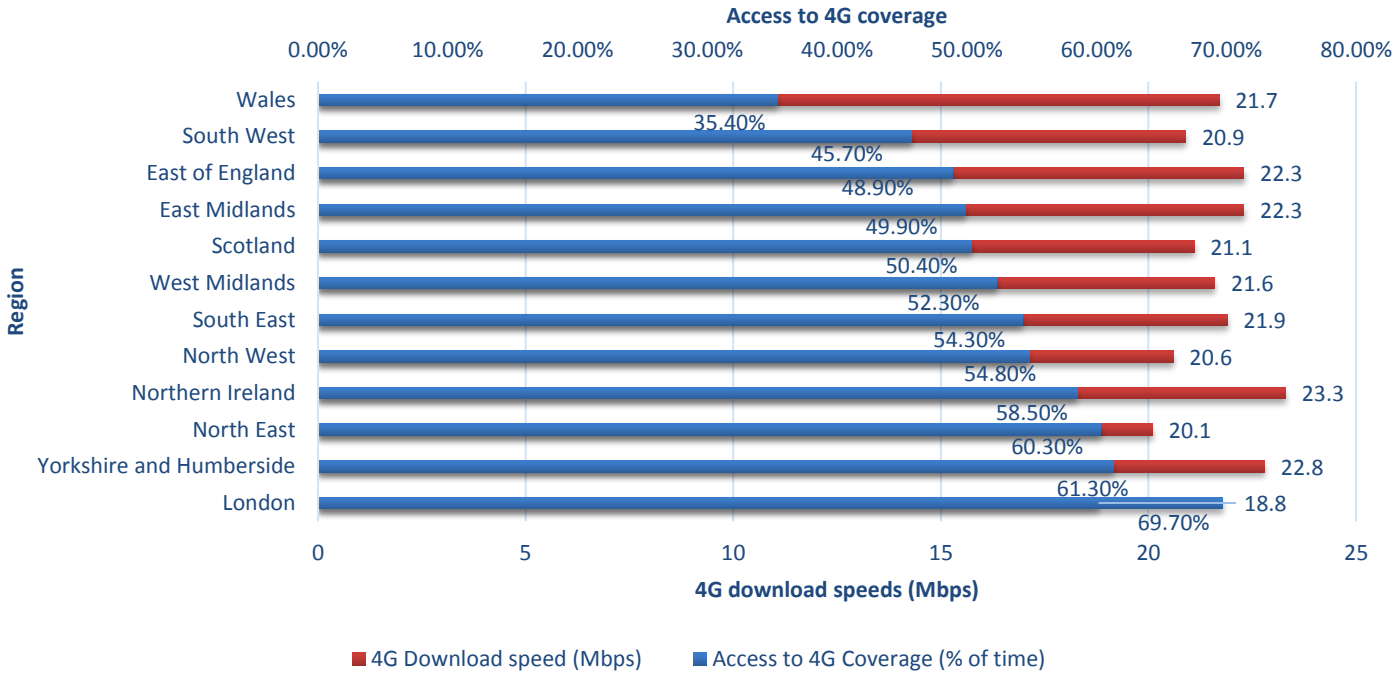
7. The majority of complaints made by mobile users are about voice coverage. In 2015, Ofcom asked consumers about their overall satisfaction with mobile reception, and the ease with which they access their network. 13% of consumers reported dissatisfaction. This may seem like a small proportion, however in real terms there were 89.9 million mobile subscriptions in the UK as of 2014.[24] Dissatisfaction was at its highest at 31% in rural areas. This is particularly relevant for the devolved nations, which have a higher proportion of rural areas, ranging from 89% of landmass in Wales to 97% in Scotland. 32% of the Northern Irish population is rural, and nearly seven million people in England live in rural areas. There are also significant discrepancies between the extent of mobile coverage in urban and rural areas. For example, in urban indoor premises, 91% of all mobile voice networks reported

[22] Source: uSwitch Customer Satisfaction Survey (Undertaken by Censuswide, October 2016).
[23] See: Ofcom analysis of operator data. (Source: Ofcom, *Connected Nations 2015*, p. 33).
[24] Ibid, (2016). 'Facts and Figures', (Accessed: 27/09/16: http://media.ofcom.org.uk/facts/).

coverage, yet for rural indoor premises, this dropped to just 31%.[25] Separate data recording the extent of mobile coverage in transport links finds that only 41% of British roads have coverage.[26] This is because mobile operators will tend to prioritise the location of their masts in areas with high population density for commercial reasons. The location of mobile masts does not correlate with roads and railway links, which is a real issue for commuters. This concern has been raised by Nigel Huddleston MP in a question to the Culture, Media and Sport Committee in April 2016.[27]

8. Recent data compiled by Which? and the independent mobile coverage analyst OpenSignal also reveals concerning contrasts between access to 4G coverage and available 4G download speeds across the UK. Figure 4 shows that although 4G mobile download speeds are relatively consistent across the UK, access to 4G coverage differs considerably. For example, although mobile users in London can access 4G coverage 69.7% of the time, 4G download speeds in the capital are among the lowest in the country at 18.8Mbps. In contrast, just 35.4% of mobile users in

Figure 4: Contrast between fast 4G download speeds yet differing access to 4G coverage across the UK



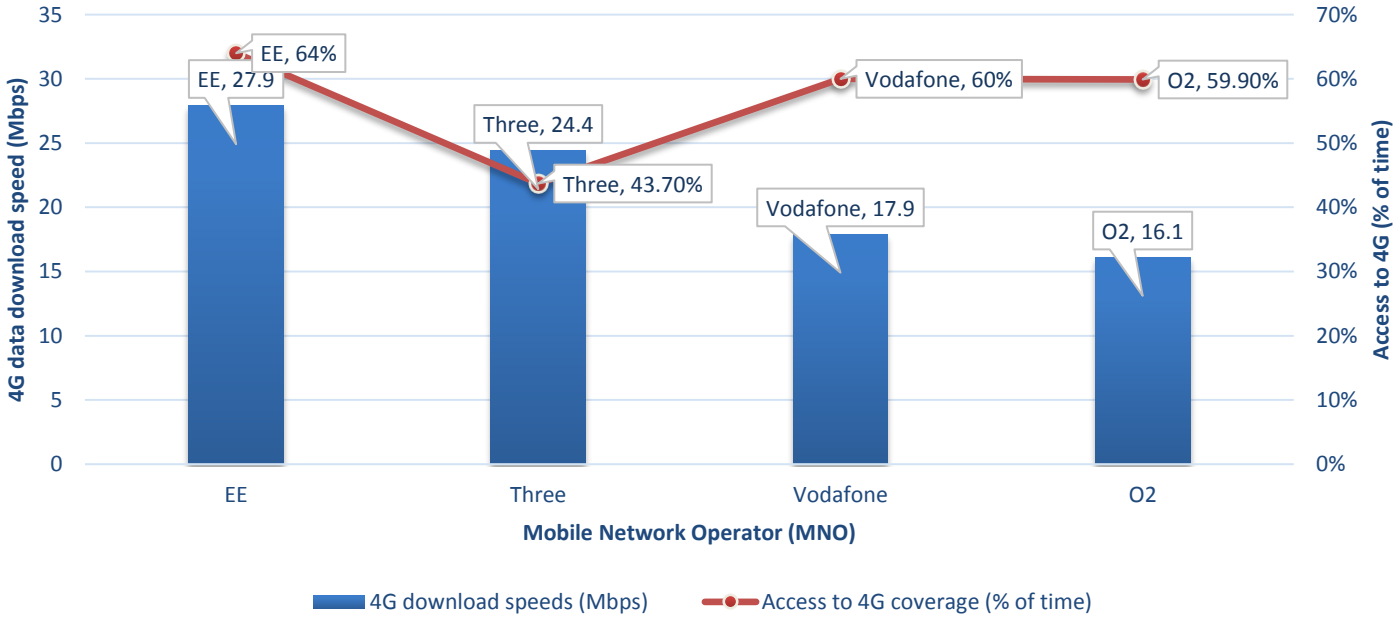
[25] Ibid, (2015). *Connected Nations,* p. 35.
[26] Ibid, p. 3.
[27] *"One of the areas that seems to be a little bit of an area of weakness, which the RAC Foundation have come up with, is roads and the poor coverage on roads. In particular, large sections of the British highways—4,600 miles without even 2G coverage, tens of thousands of more miles with sporadic or partial coverage."*

"Given the importance of roads, the issues with security, safety, emergency coverage and so on, what can we do to fill that gap because that is obviously a major concern?" Source: Nigel Huddleston MP, (2016), Q1138, (Accessed: 03/10/16: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/culture-media-and-sport-committee/establishing-worldclass-connectivity-throughout-the-uk/oral/31925.html).

Wales can access 4G coverage, despite a relatively fast 4G download speed of 21.7Mbps.[28]

9. This data, recorded in Which? and OpenSignal's 'State of Mobile Networks: UK' report, also examines which of the four large MNOs provide the best 4G service. The results, contrasted by BIG in Figure 5, also reveal concerning disparities. Three stands out as the single MNO providing the least access to 4G coverage at just 43.7% of the time. Instead, EE ranks highest for both the provision of 4G download speeds at 27.9Mbps and for access to 4G coverage 64% of the time.[29] When situated in the context that 4G download speeds could potentially reach up to 80Mbps, this data indicates that mobile internet download speeds in the UK are far from satisfactory. Moreover, on average, the four largest mobile operators provide access to 4G coverage just 57% of the time. This means that just over half of all mobile users in the UK cannot access 4G coverage from any of the dominant operators.

Figure 5: Which Mobile Operators provide the best 4G access and download speeds?



10. Therefore, there are clear disparities in mobile coverage across the UK, from roads to rural areas, voice coverage to 4G internet. It is crucial from both an economic and social perspective that we act now to improve access to good quality mobile services. Ofcom has recently launched a crowd-sourced research project aiming to

[28] Which? & OpenSignal, (Oct. 2016). 'State of Mobile Networks: UK', (Accessed; https://opensignal.com/reports/2016/10/uk/state-of-the-mobile-network/).
[29] Ibid.

gauge how mobile networks really perform across the UK. Anyone with an Android mobile phone can download the Ofcom Mobile Research App, which automatically monitors the performance of mobile and Wi-Fi networks used on the phone. This project should provide additional information about the distinct lack of mobile voice and data coverage that persists across the UK, and create a benchmark for both consumers and the mobiles sector in assessing the best mobile deals and identifying the worst 'not spots'.[30]

[30] Ofcom, (2016). 'Ofcom mobile research app', (Accessed: 29/09/16: http://consumers.ofcom.org.uk/phone/mobile-phones/coverage/Ofcom-mobile-research-app/).

Industry Investment Agreement: A Bad Call?

11. On 17 December 2014, the Government and the four largest mobile operators (EE, Vodafone, O2 and Three) signed a statement of commitment to improving mobile coverage and infrastructure in the UK. The key aims of this agreement were to reduce the number of partial 'not spots' for voice calls 'wherever possible', and maximise the geographical area in which mobile phone users could make and receive calls.[31] However, the only available update of progress on this agreement at the time of writing is a response by Ed Vaizey MP, Secretary of State for the DCMS, to a Parliamentary written question on 26 May 2016. Julian Sturdy MP asked whether the proportion of mobile signal has increased in the UK since the December 2014 agreement. Mr Vaizey, using data from Ofcom's *Connected Nations* report published back in December 2015, stated that more than 99% of UK premises have mobile coverage.[32]

12. However, Figure 4 compares the current state of mobile coverage in the UK with some of the specific commitments made by the sector and the Government as part of this investment agreement. This comparison finds that the agreement is highly unlikely to meet its goals by December 2017.

Figure 6

Mobile operator commitments to the agreement	Current progress
'That the 90 percent geographic voice coverage licence variation will require that the following signal strength thresholds be met in the 90 percent area, as described in the coverage obligation.'	The most recent figures, provided by Ofcom in its annual *Connected Nations* report (2015) suggest that the MNOs have a long way to go before outdoor voice coverage reaches 90% in geographic areas. On average, the four MNOs each provided 2G and 3G coverage to 73.75% of the geographic area in the UK in 2015.[33]
'The MNOs will provide data to Ofcom to enable it to publish an interactive on-line map. This will enable consumers to check	Although Ofcom has published an interactive online map which outlines the extent of mobile and data coverage in the

[31] DCMS, (2015). *Tackling Partial Not-Spots in Mobile Phone Coverage: Government Response to Consultation,* p. 29.
[32] Parliamentary Written Question, Julian Sturdy MP (26 May 2016). 'Mobile Phones', *38736*.
[33] See: Ofcom, (2015). *Connected Nations Report 2015,* p. 33.

where coverage is available and report to Ofcom areas of poor coverage. Additionally, Ofcom will measure the call success rate of each MNO.'	UK, the data informing the map is insufficient. It is not possible to view the total variation of mobile coverage across the country. Moreover, Ofcom states that the data derived from MNOs refers only to 'signal level predictions'. In comparison, Ofcom itself has undertaken tests of actual coverage throughout the UK to inform these maps.[34] This suggests that the MNOs are yet to provide sufficient data for consumers to accurately check mobile coverage and compare different areas in the UK.
'The MNOs have provided the Government with information on the percentage geographic voice coverage they expect to achieve throughout the UK by 31 December 2016.'	At the time of writing, the only publicly available update on the progress of the agreement is the response given by Ed Vaizey MP to the Parliamentary written question by Julian Sturdy MP.
'The MNOs acknowledge that an ancillary benefit of this Statement will be a significant increase in data coverage but this is not a binding commitment on their part.'	The formal Government press release announcing the £5 billion investment agreement promised that "as a result of the agreement, many areas will receive better data coverage, some for the first time. During the consultation process, consumers made it very clear that they feel any solution should include better data coverage."[35] Despite this, the actual provision of this agreement considers an increase in data coverage to simply be an 'ancillary benefit'. Have the British public been mis-sold on the terms of this investment?
Government commitments to the agreement	
'The Government intends to reform the Electronic Communications Code, and to introduce clauses at the earliest possible opportunity in this Parliament. Those	The Government has indeed demonstrated intent to reform the ECC, as a provision of the Digital Economy Bill which is to reach

[34] See: Ofcom, 'Mobile coverage and fixed broadband checker' (Accessed: 30/09/16: http://maps.ofcom.org.uk/check-coverage).
[35] DCMS, (2014). 'Government secures landmark deal for UK mobile phone users', (Accessed: 30/09/16: https://www.gov.uk/government/news/government-secures-landmark-deal-for-uk-mobile-phone-users).

clauses should include provision for automatic rights to upgrade/share infrastructure where there is no additional burden to the landowner (with appropriate safeguards); a power to enable Government to bring forward changes to wayleave valuation using secondary legislation; introduction of clearer rules about access to the courts to enforce emergency access or grant interim access; introduction of a prohibition on contracting out of Code rights.'	Committee stage in the House of Commons in October 2016.
'The Government recognises that concerns have been raised about how potential new rights under the Code overlap with the existing planning regime. The Secretary of State for Culture intends to work with Ministers across Government to review how reforms to the planning regime might be taken forward.'	The DCMS report on reforming the Electronic Communications Code, published in May 2016, recognises the potential overlap between new ECC rights and the existing planning system. However, specific proposals on how this overlap could be addressed are yet to be included.

13. There is much left to be done by the mobile communications sector to improve mobile infrastructure and increase the extent of coverage in the UK. The reference to an increase in mobile data coverage as an 'ancillary benefit' of this investment agreement rescinds the responsibility of mobile operators for actually making a tangible improvement to mobile coverage across the country. Although the Digital Economy Bill includes a proposal for providing Ofcom with the ability to fine any mobile operator that fails to meet their commitments to the agreement by the deadline of December 2017, the Bill needs to be passed in time to do so. Consequently, BIG calls on the Government to prioritise the passage of the Digital Economy Bill, in order to ensure accountability in the sector. In the meantime, the Government must press the mobile operators to provide an inter

Mobile roaming: A better call for Britain?

14. Britain quite clearly has a mobile coverage problem. Yet, curiously, access to mobile coverage is not a problem for visitors to the UK who use foreign SIM cards. This is because international SIM cards automatically allow for national roaming. Visitors will find that when they travel to the UK, their mobile will likely connect with the strongest signal available, regardless of the provider. In comparison, British mobile phone users are stuck with a single provider and, by extension, a lack of mobile phone coverage in areas not covered by their provider. One solution, previously considered as part of the DCMS consultation on mobile coverage undertaken in November 2014, would be to implement a system of national roaming for British consumers. National roaming commits all mobile operators to allowing non-customers to use their network when they cannot receive mobile coverage from their usual provider. Typically, there are two different types of national roaming; seamless and non-seamless. When a mobile user switches between networks and their calls are not dropped, national roaming is considered seamless. In contrast, non-seamless national roaming occurs when a call is dropped as mobile users need to switch between networks to gain signal.[36]

15. However, previous government proposals for national roaming have been met with strong opposition by the mobiles sector. Vodafone has argued that national roaming could make mobile coverage and quality "significantly worse from the consumer's perspective, with a much higher risk of dropped calls, lower battery life and negative impact on services such as voicemail."[37] This opposition is grounded in the fact that the additional costs created by a system of national roaming would be incurred by mobile operators. It isn't cheap; these costs are estimated at £64-£128 million within just the first year of implementation.[38] When compared against an estimate of consumer 'willingness-to-pay' for mobile services that are not currently available due to 'not spots', which is valued at £7-33 million, the DCMS cost benefit analysis of national roaming concluded that the net present value of this policy is, at best, minus £186.59 million.[39]

[36] DCMS, (2014). *Tackling Partial Not-Spots in Mobile Phone Coverage: Consultation Document,* p. 25.
[37] Thomas, D. (2014). 'Mobile phone groups oppose 'national roaming' proposals', *Financial Times,* (Accessed: 30/09/16: http://www.ft.com/cms/s/0/fcfc53d6-64eb-11e4-bb43-00144feabdc0.html#axzz4Ljiy7la0).
[38] DCMS, (2014). *Impact Assessment: Tackling Partial Not-Spots in Mobile Phone Coverage,* p.3.
[39] Ibid.

16. The implementation of a roaming system across the entire country would inevitably cause technical difficulties, resulting in poor services ranging from dropped calls to complex cost-sharing arrangements in the sector. Moreover, it is unclear whether national roaming would stimulate or stagnate market competition between mobile operators. On the one hand, the ability of consumers to roam between networks in areas with partial 'not spots' would encourage competition, as operators are incentivised to provide coverage in areas deprived of signal.[40] On the other hand, a report commissioned by Ofcom and undertaken by Analysys Mason concluded that a system of national roaming should not be considered for commercial reasons. Capital expenditure related to national roaming would have to be no more than 10% of the expected required investment of £13-14 million for the system to make any return within five years,[41] let alone to stimulate competition in the market. Instead, the report highlighted the relative merits of 'macro not spot' roaming.[42] This refers to the targeting of mobile roaming or network sharing arrangements in areas particularly affected by 'not spots' or partial 'not spots'. 'Macro not spot' roaming could significantly improve mobile coverage in the UK, without compromising network ownership across the country. However, insufficient attention has been paid by the Government to considering the small-scale implementation of roaming arrangements in areas affected by a severe lack of mobile coverage. The DCMS consultation focused solely on the costs and benefits of national roaming, without considering whether it could instead be downsized to fit the areas that need it the most.

17. A system in which mobiles can roam between networks would clearly benefit consumers. Respondents to the DCMS consultation noted that national roaming could have the positive effect of transferring the problems caused by poor mobile voice coverage away from consumers, who struggle to switch network providers with ease, to MNOs which have the resources to improve coverage instead.[43] Furthermore, national roaming could deliver better mobile coverage with a smaller 'incremental cost' than policies ensuring that all MNOs have high quality coverage in all locations.[44] Representatives of British businesses also noted that national roaming could be targeted in areas with severe non-coverage, and that 'intra-provider' roaming would incentivise mobile operators to invest in the quality of their networks.[45] This would be an effective compromise for consumers, who would benefit from the introduction of mobile coverage to partial 'not spots', and mobile operators, since the networks would be shared. A form of national roaming has already been introduced in the UK to enable the entry of Three into the mobile communications market. In certain areas, Three customers are able to access EE's 2G

[40] DCMS, (2014). *Tackling Partial Not-Spots in Mobile Phone Coverage: Consultation Document,* p. 25.
[41] Analysys Mason, (2010). *Study on the technical issues associated with the introduction of national roaming,* p. 3.
[42] Ibid.
[43] DCMS, (2015). 'Tackling Partial Non-Spots in Mobile Phone Coverage: Government Response to Consultation', p. 24.
[44] Ibid.
[45] Ibid.

network in the absence of their normal service.[46] This demonstrates that it is technically possible to implement some form of small-scale roaming arrangement between networks. Consequently, BIG calls on the Government to reconsider small-scale roaming arrangements, targeted in areas affected by partial 'not spots', otherwise referred to as 'macro not spot' roaming.

National roaming: Benefits

18. Although the initial DCMS consultation found mixed opinions on national roaming, two clear benefits to this system emerged; firstly, that national roaming would ensure better protection for consumers, and secondly, that roaming targeted at areas with partial 'not spots' would be able to promote greater competition between MNOs. Overall, the consultation document concluded that:

    "*As it offers the potential to eliminate partial not spots altogether in the UK, national roaming could make a significant contribution to extending coverage for consumers in the UK."*[47]

19. Moreover, the DCMS found that a system of national roaming could offer an improved service to an estimated 1.5 million consumers affected by partial non-spots.[48] This improvement would be due to an increase in the quantity of potential service providers, and by extension, an increased variety of available services and packages available to consumers. Indeed, the consultation even estimated that the net present value over 10 years of the potential consumer benefits of national roaming ranges from £54 million to £249 million. This significant value is solely attributed to the ability of UK consumers to make and receive calls and messages in partial 'not spots', and does not even reflect the potentially beneficial effects of increased consumer choice between network providers.[49]

20. To build on these potential benefits, the report commissioned by Ofcom and undertaken by Analysys Mason concluded that if some compromises were made, a form of national roaming could be implemented to increase coverage for mobile consumers. The particular approach advocated by the report was to focus mobile roaming on either 'macro not spots', where no mobile operators in the sector currently provide coverage, or on 'micro not sports', which are relatively small areas of non-coverage that do not even register on conventional coverage maps, such as individual rooms in a house.[50] This would enable a significant improvement in the consumer experience, through both increased choice and improved service provision, in the areas that require mobile coverage the most. Furthermore, the

[46] DCMS, (2014). *Tackling Partial Not-Spots in Mobile Phone Coverage: Consultation Document,* p. 26.
[47] Ibid, p. 10.
[48] Ibid, p. 30.
[49] Ibid.
[50] Analysys Mason, (2010). *Study on the technical issues associated with the introduction of national roaming,* p. 4.

report also noted that by focusing a system of mobile roaming in specific areas deprived of mobile coverage, mobile operator costs could be reduced.[51]

National roaming: Costs

21. However, both the Analysys Mason report and the DCMS consultation found evidence to suggest that any system of roaming is likely to encounter technical issues that will negatively affect consumers. For example, the risk of dropped calls when mobiles transfer between two different networks that have previously been designed independently would persist even in a small-scale roaming arrangement. Furthermore, mobile roaming between distinct networks could also comprise the commercial independence of each mobile operator.[52] Since significant investment would be required to enable networks to be compatible for roaming, the distinctions between the services provided by different mobile operators would indeed become blurred. Achieving transparency between integrated mobile operator services would entail significant effort and investment that could outweigh the benefits that even targeted roaming arrangements would achieve for the extent of mobile coverage in the UK.

22. Responses to the DCMS consultation by the mobiles sector also raised a number of concerns for roaming, largely related to competition and technical issues. Amongst these concerns, the possible technical problems for consumers emerged as a key barrier to mobile roaming. For example, mobile operators pointed to the potential loss of mobile data for consumers roaming between networks. This could occur if a mobile roams onto a strong 2G signal from another network, losing their original network's weaker 3 or 4G signal.[53] An even more fundamental concern raised by the sector was the potential impact on network services in the event of a network outage. Evidence provided to the DCMS consultation suggested that a network outage in a system of national roaming could overload alternative networks with traffic. Moreover, a network in which mobile operators provide services for all consumers would create accountability issues in the event of a network outage, since no particular firm could claim responsibility for the problem.[54] Another important caveat is mentioned in the Government's response to the DCMS consultation on mobile coverage. The Home Office advised that the national roaming policy option would incur costs to central government, security and law enforcement agencies.[55] This is because a national network open to mobile roaming could be

[51] Ibid, p. 11.
[52] Ibid, p. 26.
[53] DCMS, (2014). *Tackling Partial Not-Spots in Mobile Phone Coverage: Consultation Document,* p. 28.
[54] Ibid.
[55] DCMS, (2015). Government response to consultation, endnotes (Accessed: 02/10/16: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/370808/formatted_condoc_final.pdf).

vulnerable to use by terrorist groups. Nonetheless, the Home Office since supported the DCMS consultation document.

'Macro not spot' roaming: A solution?

23. The regulatory issues raised by both the mobiles sector and the Government provide compelling reasons to suggest that a nationwide system of roaming would not work. However, this is not to say that more tailored systems of 'macro not spot' roaming should also be discounted. In Australia, the USA, Canada and New Zealand, the benefits of national roaming have been seen as especially beneficial in remote areas where competition would not flourish without government intervention. The USA extended existing national roaming regulation from voice to data services in 2011, as did New Zealand in 2013.[56] Of course, the UK has by definition different requirements and far less remote areas containing a small population density. Nonetheless, rural areas in the UK face a similar lack of competition between mobile operators which targeted roaming arrangements are well placed to provide. For example, France implemented a system named '*Le programme de zone blanches'* in 2003, which focused on increasing mobile coverage specifically in rural areas affected by 'not spots'.[57] The programme has been a widespread success, creating 3000 additional sites of mobile coverage implemented by the end of 2009.[58] Moreover, all of the main French mobile operators have greater than 90% geographical coverage for 2G voice calls, and half of these operators have over 90% geographical coverage for 3G and 4G services.[59] Given the impact of mobile roaming on coverage in rural areas internationally, it makes sense for the Government to consider whether a similar approach could also benefit the UK.

24. 'Macro not spot' roaming is an under-analysed policy option for improving mobile coverage in rural areas. One of the most in-depth discussions about 'macro not spot' roaming is undertaken by Ofcom in a 2013 report. The report identifies 'macro not spots' as 'relatively large areas of non-coverage', and 'micro not spots' as 'relatively small areas of non-coverage' such as individual rooms in a house, which would not even register on coverage maps produced by Ofcom.[60] By targeting mobile roaming arrangements in 'macro not spots' where there are large areas of land not covered by signal, operational costs for individual mobile operators could be reduced whilst coverage is provided to the areas that need it most. Moreover, Ofcom even suggested that aggregate cost savings made by 'macro not spot' roaming could be subsequently used by the mobiles sector to cover rural 'not spots' where no

[56] Lloyd, D. (2016). 'Regional Australia needs roaming', *The Australian,* (Accessed: 30/09/16: http://www.theaustralian.com.au/business/technology/opinion/regional-australia-needs-roaming/news-story/30ef403a24e15df42733851a4ed03bb8).
[57] Analysys Mason, *Study on the technical issues associated with the introduction of national roaming,* p. 41.
[58] Ibid, p. 42.
[59] House of Commons Library, Research Enquiry, [2016/9/288-SES UID 579782].
[60] Ibid, p. 3.

networks currently operate.[61] This approach would simultaneously save money for sector and provide coverage to remote areas in the UK. Therefore, BIG calls on the DCMS to undertake an impact assessment of 'macro not spot' roaming to determine how this policy could be implemented.

[61] Ibid, p. 10.

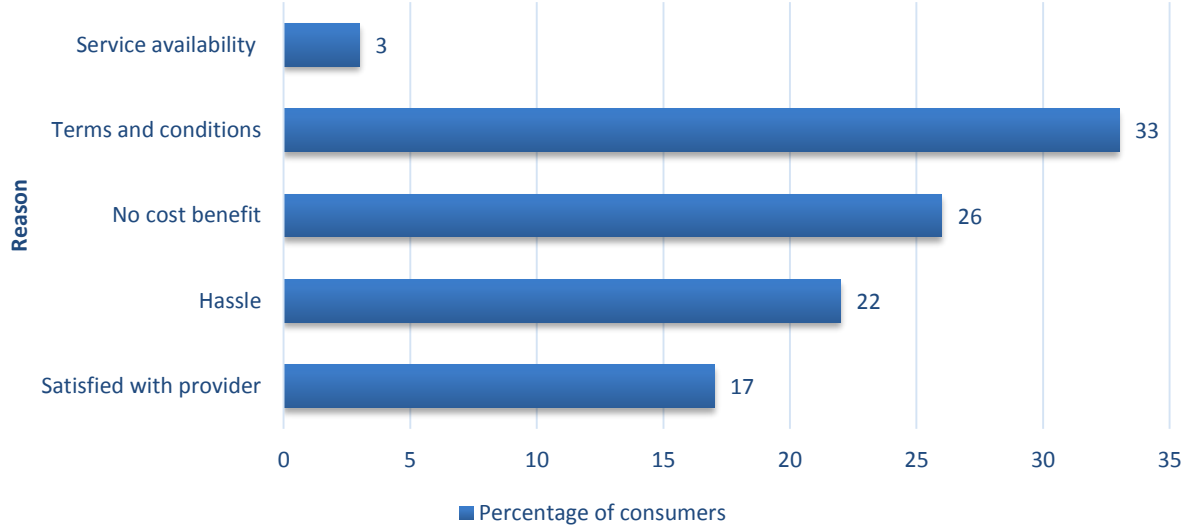
Protecting Mobile Consumers: A Minimum Service Obligation

25. Mobile communication has become equally as essential as any other household utility. It is therefore important that mobile consumers receive similar service akin to if their heating broke or water pipe leaked. Nonetheless, the mobile communications industry has maintained a long tradition of self-regulation,[62] and mobile operators have tended to challenge attempts by Ofcom to improve consumer protection. It takes considerable time for voluntary agreements to be discussed, drafted, consulted on, launched and refined. Instead, the strengthening of consumer protection measures by Ofcom can promote market competition, and consequently improve consumer access to mobile coverage. This is even more essential in light of recent £4.6 million fine imposed by Ofcom on Vodafone for mishandling customer complaints.

26. One particularly important area in which consumer rights need to be strengthened is in the termination of individual mobile contracts. 17% of calls to the Citizen's Advice Bureau (CAB) Helpline about mobile phones concerned 'standards of service and contract exit'.[63] It is easy to understand why so many people are discontented. If a customer experiences poor mobile coverage, they may attempt to switch providers. However, an inflexible contract can sometimes be an insurmountable barrier. Consumers can be left paying for a service that they do not actually receive, for months at a time. CAB found that when it came to reasons why consumers considered switching providers, but did not actually follow through, the number one reason was 'terms and conditions'.[64] Contracts typically contain clauses that allow consumers to exit their contract without a penalty if the network is completely unable to provide the service promised. However, most networks set out a range of factors, from network improvement works to adverse weather conditions, which can legitimately affect mobile service. One network provider's pay monthly airtime conditions state that a customer can terminate the contract 'if there is a complete failure of the entire UK network for seven days in a row due to something we have done'.[65] Consequently, the threshold for exiting a contract can often be unreasonably high. This makes it extremely hard for consumers to secure compensation for poor service or obtain a no-cost contract exit.

[62] For example, in autumn 2013 the Government asked the Mobile Network Operators to take action on the issue of introducing a cap on customers' liability for bills incurred when a mobile phone is stolen. Ofcom had previously suggested that primary legislation might be more appropriate. In December 2013 it was announced that the MNOs would soon implement this cap voluntarily. As of March 2015 no industry-wide cap is in place. This example underlines the cost to the consumer from a regime over reliant on self-regulation. See '*Calling the Shots?*', p. 26 and (https://www.gov.uk/government/news/putting-an-end-to-shock-mobile-bills), accessed July 2016.
[63] Ibid, p. 19.
[64] Ofcom, (2015). 'The Consumer Experience'*, Research Annex*, p. 43.
[65] Pardoe et al, *'*Calling the Shots', *Citizens Advice Bureau,* p. 34.

Figure 7: Reasons for mobile consumers considering, but not switching, their provider (2015)



Base: All adults aged 16+ who considered switching mobile contracts and are the household decision maker for the service (Source: Ofcom Switching Tracker, July-August 2015).

27. Consumers can also be hit with large exit fees even when the mobile network service has failed them. At present, Ofcom caps the maximum fee that mobile operators can charge for an early contract exit at the customer's total remaining monthly payments. Yet the length of the average contract has increased in recent years, and the cost of exiting a contract earlier has correspondingly increased. The median length of a contract is now 24 months and market data suggest that the most common monthly tariff is around £17.50 a month.[66] This means that a consumer wanting to exit a 24 month contract after three months because of poor service could be required to pay up to £367. Of course, there is a clear basis for exit fees when a consumer freely chooses to terminate a contract, but it seems wrong to impose large contract exit fees when the reason for termination was poor service.[67]

28. Ofcom has said that it expects mobile operators to offer a discount on exit fees to reflect cost savings that network providers make when a customer terminates their contract. Nonetheless, many networks do not offer a discount in their standard terms and conditions, and those that do offer only a small discount; Three offers a discount between 3-10% and EE offers 4%.[68] It is obvious that the regulator must do more. In particular, Ofcom should establish a Minimum Service Obligation (MSO)

[66] Ibid, p. 22.
[67] Ibid.
[68] Ibid, p. 34.

with regard to network coverage which would be included as standard in any contract between a mobile user and provider. If the network provider fails to fulfil the MSO, the customer would be free to terminate the contract free of charge. By strengthening consumer rights in this way and making it easier for consumers to exit contracts when providers fail to deliver, mobile operators will have to invest in improving the coverage they offer customers. Combined with the increased choice of network coverage that small-scale or 'macro not spot' roaming could provide to consumers in rural areas of the UK, the implementation of a MSO would significantly improve the consumer experience in the mobile communications sector.

The Digital Economy Bill: Reforming the ECC

29. The Government must prioritise the passage of the Digital Economy Bill, in order to ensure that when the deadline for the £5 billion mobile investment agreement passes, the mobiles sector is accountable to Ofcom. The Bill had its second reading in Parliament on 13 September 2016 and has passed to Committee stage in the House of Commons in at the time of writing. It is essential that this legislation is passed ahead of the deadline set for the £5 billion mobile infrastructure investment agreement, which is in December 2017. This is because the Bill proposes that Ofcom should have the ability to fine any mobile operator which does not meet the specific targets of this £5 billion agreement.[69] At present, Ofcom is extremely limited in its ability to punish the mobiles sector for not meeting expected standards. The regulator can currently either strip a mobile operator of its licence or initiate criminal proceedings against it, both of which are incredibly forceful and definitive measures. Instead, the Bill proposes to provide Ofcom with the power to fine a company up to 10% of its 'relevant gross revenue'; a potentially significant loss for mobile operators which do not meet the commitments of the £5 billion investment agreement by the end of next year.[70] Therefore, BIG calls on the Government to ensure that the Digital Economy Bill passes in time to provide Ofcom with the ability to render mobile providers accountable for reaching their targets by December 2017.

30. The Bill also contains a number of provisions that would be instrumental to improving mobile infrastructure. For example, the Bill calls for primary legislation that would reform the Electronic Communications Code (ECC). The ECC enables network providers to install and maintain communications technology by giving them certain rights. Under the ECC, network operators are permitted to construct infrastructure on public land, and to install equipment on private land. Although the ECC requires that mobile operators contact the owners of private land before installing equipment, it also allows operators to apply to the County Court when no such permission is given by a landowner. Fundamentally, the ECC helps determine the rental fees paid by mobile operators to land owners. Rental fees are essential in establishing the commercial viability of providing coverage in 'not-spots' and 'partial not-spots'.[71] At the request of the DCMS, the Law Commission carried out a review of the ECC in 2013, which contained over fifteen pages of recommendations for reform. The Law Commission provided three key reasons for reforming the ECC:

[69] See: The Digital Economy Bill- Explanatory Notes, (Accessed: 10/10/16: http://www.publications.parliament.uk/pa/bills/cbill/2016-2017/0045/17045.pdf).
[70] Riley-Smith, B. (2016). 'The end of mobile 'not spots'? Ministers propose new power to fine companies millions', *The Telegraph,* (Accessed: 10/10/16: http://www.telegraph.co.uk/news/2016/09/16/the-end-of-mobile-phone-not-spots-ministers-propose-new-power-to/).
[71] Law Commission, (2013). *Electronic Communications Code Consultation,* p. 31.

- *Complex and difficult to understand:* The ECC has caused problems between site providers and MNOs, further compounded by an inefficient dispute resolution process;
- *Created over 30 years ago:* Given the fundamental changes in how we use technology to communicate over the past decade alone, it is widely agreed that the ECC is now out of date.
- *The ECC impedes the rollout of mobile coverage provisions:* The Law Commission found evidence to suggest that the regulations enshrined in the ECC were actually hindering the upgrading of the network.

31. In 2015, the Coalition Government tabled an amendment to the Infrastructure Bill, which would have reformed the ECC according to the recommendations set out by the Law Commission. However, the amendment was dropped amid criticism from stakeholders.[72] Instead, progress has most recently been made with the second reading of the Digital Economy Bill, which passed without division and includes a number of necessary provisions for bringing the ECC into the twenty-first century. One of the most anticipated provisions reform of 'wayleave valuation' in the ECC. The Government has proposed a new system of valuation based on compulsory purchase principles. This means that the value of land used for mobile infrastructure is assessed on the basis of its value to the site provider, rather than the mobile network provider.

32. Reformed wayleave valuation will follow the same system used for domestic utilities provision. An independent analysis by the DCMS concluded that this reform would also result in the reduction of wayleave costs for network operators by 40%, with a 20-year net present value benefit to network providers of £1.02 billion, and potentially up to £307 million indirect impact on business rates.[73] Due to the significant impact of the valuation change, the new ECC rights will only apply to contracts signed after the law has come into effect. It will not be applied retrospectively. Given that contracts can last as long as 20 years, the changes and associated cost savings for mobile operators are likely to be gradual. Nonetheless, the reform of wayleave valuation, and overall overhaul of the ECC, would certainly commence the much-needed process of gradual, longer-term change.

33. The reformed ECC would also facilitate technology sharing within the mobile communications sector. Specifically, the ECC would provide mobile operators with a new automatic right to upgrade and share apparatus, allowing them to make more effective use of sites across their portfolios, and to reduce their infrastructure footprint without damaging network provision. Technology sharing will help to protect conservation areas because it will reduce the need to build new masts.[74] In addition, the reformed ECC would enshrine the reassignment of rights, meaning that as infrastructure assets are sold and acquired by new network providers, there will

[72] DCMS, (2015). *Reforming the Electronic Communications Code – Consultation document*, p. 8.
[73] Nordcity, (2013). *Modelling the Economic Impacts of Alternative Wayleave Regimes (Prepared for: Department for Culture, Media and Sport)*, p. 54.
[74] DCMS, (May 2016). *A New Electronic Communications Code*, p. 17.

be no option for land owners to renegotiate existing contracts. To ensure the reformed ECC is effective, parties will be prohibited from making private agreements and contracting out of ECC provisions. The UK would gradually move to the new legal framework over the next 10-15 years as existing contracts come up for renewal, with transitional arrangements as to how and when existing agreements transition to the provisions of the new ECC.

34. The Government's own economic analysis of these reforms shows a financial benefit to the sector of more than £1 billion.[75] Moreover, the reformed ECC should contribute to eliminating not-spots and partial not-spots, by reducing operational costs and removing barriers to investment in communications infrastructure. This would facilitate the installation of new masts where necessary, and encourage the upgrading of apparatus.[76] Mobile operators must use these savings to extend coverage and improve connectivity. Indeed, the Government and Ofcom must make sure that consumers, and not network shareholders, are the principle beneficiaries of these reforms. As the Digital Economy Bill passes to Committee stage in the House of Commons, BIG calls on the Government to prioritise the passage of this legislation, and proceed with reforms to the Electronic Communications Code as soon as possible.

[75] See: Ibid, (2014). *Tackling Partial Not Spots in Mobile Phone Coverage: Impact Assessment.*
[76] HC Deb 10 (February 2015). c656WH.

Conclusions and recommendations

35. There were 39.5 million 4G mobile subscriptions in the UK at the end of 2015.[77] However, the average proportion of premises with 4G cover provided by all four MNOs was just 66.25%.[78] The British mobile communications market may compare favourably with EU competitors, but services must be improved for consumers and costs should be reduced within the sector. The £5 billion investment agreement between the Government and mobile communications industry still has a year left to provide better mobile infrastructure and 90% mobile voice coverage in geographic locations across the UK. However, this report has found that the lack of progress by the sector in improving mobile voice and internet coverage remains just as troubling as in 2014. The Digital Economy Bill proposes that Ofcom should be able to fine mobile operators that have not reached the targets of this £5 billion investment agreement. Therefore, BIG calls on the Government to request an update in December 2016 from the four mobile operators on their progress towards achieving these goals. The British public deserve to be assured that this agreement was a good call.

36. BIG took a second look at national roaming, one of the key policy options considered in the DCMS consultation of November 2014. An assessment of the costs, consisting primarily of technical difficulties, cost-sharing issues and security concerns, was compared with the relative benefits of national roaming. These included the potential creation of market competition in the mobiles sector, and an increase in consumer choice. Instead, BIG concluded that a compromise would be better for both consumers and mobile operators. This would take the form of 'macro not spot' roaming. Operators would share networks, enabling mobiles to roam, but only in areas severely affected by 'not spots'. By targeting a system of 'macro not spot' roaming in areas with poor signal, the Government could encourage competition between mobile operators and allow consumers to finally access decent mobile coverage. Therefore, BIG recommends that the DCMS undertake an impact assessment of 'macro not spot' roaming, to determine the feasibility of implementing this policy in rural areas.

37. Mobile consumers also need better protection. Unlike other regular household expenditures, such as utilities, mobile contracts remain extremely complex and ambiguous. 38% of mobile users surveyed by Ofcom in 2016 reported experiencing 'major' difficulties when switching provider.[79] If a mobile user experiences poor coverage, there are often very limited grounds for terminating their contract free of charge. Instead, BIG recommends that Ofcom establishes a Minimum Service

[77] Ofcom, (2016). 'Facts & figures', (Accessed: 02/09/16: http://media.ofcom.org.uk/facts/).
[78] Calculated using data recorded by Ofcom, (2015). 'Measuring mobile broadband performance in the UK: 4G and 3G network performance', *Quantitative Research Document,* p. 2.
[79] Ibid, (2016). 'Ofcom Mobile Switching Quantitative Research', p. 12.

Obligation for mobile operators to fulfil. Otherwise, consumers should be eligible to terminate mobile contracts free of charge. This consumer protection measure must also be included as a provision of the Digital Economy Bill.

38. Finally, the passage of the Digital Economy Bill must be prioritised by the Government. The Bill includes provisions to reform the Electronic Communications Code (ECC) and bring Britain's regulatory framework for mobile communications into the twenty-first century. Demand for the highest quality of mobile data is only increasing, and the ECC was first implemented before the introduction of 2G services. The reform of wayleave valuation would save significant mobile operator costs, which could instead be allocated towards the reduction of mobile 'not spots' across the country. Finally, the proposals to allow Ofcom to fine mobile operators that do not meet the targets laid out in the £5 billion investment agreement would ensure accountability in our mobile communications sector. The Digital Economy Bill represents a forward-thinking vision for a connected, inclusive Britain. Now, the Government must make the right call to achieve this.

Support for ‘Mobile coverage: A good call for Britain?’

The Rt. Hon Alistair Burt MP, North East Bedfordshire:

> “I am pleased to support this report, which highlights the importance of connectivity for rural areas, where coverage can be poor. Rural businesses in particular, which are the essential backbone of modern villages, are suffering with poor coverage and more needs to be done to ensure their sustainability in our communities.”

Sir Alan Haselhurst MP, Saffron Walden:

> “Vast tracks of my rural constituency are without any reliable signal, let alone consistent 4G coverage. The Digital Economy Bill is the obvious vehicle to incorporate the recommendations made by BIG.”

The Rt. Hon Sir Jeffrey Donaldson MP, Lagan Valley:

> "I have received many complaints from constituents living in rural areas about the poor quality of mobile phone coverage and access to 4G data services. There has also been a deterioration in the quality of coverage in some urban areas. I endorse the findings and conclusions of this report and want to see robust action to improve coverage for all my constituents."

Geoffrey Clifton-Brown MP, The Cotswolds:

> “Representing one of the largest rural constituencies in the south of England, the high percentage of mobile phone 'not spots' is a real problem for many of my constituents. In the 21st century this is completely unacceptable and the Government should rapidly aim for universal mobile phone coverage throughout the UK.”

Anne Main MP, St Albans:

> “In the modern economy, more and more people are working from home. It’s vital that there is no stone left unturned.
>
> ‘We in St Albans are only 25 min from London, so it is unacceptable that we should continue to face these problems.”

Nusrat Ghani MP, Wealden:

> “In my constituency you are almost more likely not to have mobile signal than you are to get it. The fact that you can be in London, one of the world’s busiest and most dynamic cities, within hours, but you can’t receive a call or a send a text is preposterous, and it’s high time we had a mobile network fit for the 21st century.”

Helen Grant MP, Maidstone and The Weald:

"BIG now rightly calls on the Government to improve consumer rights in the mobile phone sector and consider 'macro not spot' roaming. This will allows mobiles to roam across different network operators for the best signal in the areas that need coverage the most, and that includes my constituency of Maidstone & The Weald.

The network operators have had a chance, now it is time to deliver for the consumer. The BIG report shows that in the South East a 4G signal is received 54.3% of the time i.e. it is not received 45.7% of the time. This is the 6th best out of the 12 different regions in the UK and it is simply not good enough.

Back in 2014 I carried out a survey of almost 4,000 households in my rural communities. 70% of respondents recorded mobile phone signal weakness and slow broadband as major issues. As a result I invited the Minister of State for the Digital Economy and senior directors from the four major Mobile Network Operators (MNOs) to address a public meeting in Cranbrook in February 2015.

The MNOs promised significant improvements and the Minister announced what was supposed to be a landmark legally binding £5bn deal between the Government and industry. The objective was to halve so called partial coverage 'notspots' and reduce complete notspots by almost twothirds by December 2017.

I said at the time I would be holding the network executives to their word and I am certainly doing so by supporting the British Infrastructure Group (BIG) of MPs and their new report "Mobile coverage: A good call for Britain?".

Adam Afriyie MP, Windsor:

"It cannot be right that today it can sometimes be easier to get a strong mobile signal on an African hilltop than in a UK village. As the world leader in financial technology and a global hub for technology and innovation, we must close the communication black spots without delay."

Sammy Wilson MP, East Antrim:

"Representing a constituency which has a large rural population I know the frustrations of those who have been unable to obtain any mobile coverage, let alone 4G coverage and I believe that it is important that the Government does require action to be taken by the sector to ensure coverage across all of the United Kingdom".

Hywel Williams MP, Arfon:

"Rural communities such as parts of Arfon in north Wales are calling out for better connectivity. Increasing mobile connectivity will support business growth, extend access to key public services, which are increasingly being delivered online, and bring an improvement for mobile customers in rural areas.

> Upgrading mobile infrastructure in rural areas is crucial to ensuring that the rural economy is not further disadvantaged. The current situation evidently puts businesses at a disadvantage & may make potential employers think twice about investing in such areas.
>
> It's vital we get an undertaking that not-spot areas are given an assurance of future investment in mobile connectivity."

Flick Drummond MP, Portsmouth South:

> "Good mobile network coverage is important for our enterprise economy but in parts of Portsmouth we are still waiting for mobile companies to give us reliable 4g coverage. As the technology advances it is important phone companies meet the demands of their consumers for better access. The industry is already preparing for 5g but it must make sure it is not leaving consumers behind."

Michael Tomlinson MP, Mid Dorset:

> "Mobile coverage across MDNP is poor, particularly for 3G and 4G coverage. I welcome proposals to improve mobile coverage, and remove not-spots by allowing small scale roaming for our residents when they cannot get a signal from their own provider."

Andrew Murrison MP, South West Wiltshire:

> "Progress on coverage has been made but mobile phone operators are still running rings around consumers to the particular disadvantage of people living and working in isolated and rural areas."

Ian Blackford MP, Ross, Skye and Lochaber:

> "The lack of decent mobile connectivity is both a frustration to consumers and a significant competitive disadvantage to businesses in my constituency. Mobile connectivity together with super-fast broadband access is as important today as was the provision of utilities such as water and electricity in the past. Our economic potential is held back when we cannot offer consumers and businesses the tools to compete. This has to be a national priority for all. A failure to be able to connect in the modern world is no longer acceptable."

Cheryl Gillan MP, Chesham and Amersham:

> "At a time when my constituency is working to attract international businesses, constituents are doing business all around the world and we are seeking to grow our economy Government and communications providers should be working flat out to create the best possible communications across the whole country. I hope this report will contribute positively to reinvigorating the efforts to close these gaps in our infrastructure."

Sir Edward Garnier MP, Harborough, Oadby and Wigston:

> “50 per cent cover by 4G is just not good enough. Rural Harborough needs full coverage to enable my constituents to work in the modern world and to enjoy the same level of social contact as their urban neighbours. We are not getting what we need or deserve.”

Ian Paisley MP, North Antrim:

> "The rural parts of North Antrim demand and deserve modern day mobile coverage so as we can play an active part in modern connectivity. This is essential for business, education and modern life style."

Chris Bryant MP, The Rhondda:

> “People are sick and tired of the terrible reception in many parts of the Rhondda. Half of Hannah Street in Porth, for instance, has virtually no reception at all, let alone 3G or 4G. These are shocking figures and it is time the mobile operators, the Government in Cardiff and in Westminster took concerted action. A mobile phone signal these days is an essential part of modern life. We shouldn’t be left out.”