

Initial Report

Last Modified: 10/01/2014

1. Are you content for the Government to publish your response?

#	Answer	Bar	Response	%
1	Yes, I would like the Government to publish my response.		1	100%
2	No, I do not want the Government to publish my response.		0	0%
	Total		1	

2. Please explain why you regard the information you have provided in response to this consultation as confidential.

This question was not displayed to the respondent.

3. Name

Text Response

Prof Stephen Temple

4. Are you responding on behalf of an organisation?

#	Answer	Bar	Response	%
1	Yes		0	0%
2	No		1	100%
	Total		1	

5. Organisation name

This question was not displayed to the respondent.

6. Contact email address

Text Response

stephen.temple@ntlworld.com

7. Contact address

Text Response

Iris House, Pyrford Rd, Woking, Surrey. GU22 8UQ

8. Please select which category best describes you or your organisation

#	Answer	Bar	Response	%
1	Academia/research		0	0%
2	Broadcasting		0	0%
3	Consumer/user		0	0%
4	Consumer group		0	0%
5	Fixed communications provider		0	0%
6	Industry organisation		0	0%
7	Infrastructure provider		0	0%
8	Internet Service Provider		0	0%
9	Local Government or other public sector		0	0%
10	Mobile communications provider		0	0%
11	Satellite communications provider		0	0%
12	Technology company		0	0%
13	Other		1	100%
14	Business user or business group		0	0%
	Total		1	

9. If other, please give details.**Text Response**

Visiting Professor 5G IC and member of the IET Communications Policy Panel

10. Is this an appropriate role for Government?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

11. Are there other high level principles the Government might adopt?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%

	Total		1	
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12. If yes, please give details.

Text Response

13. What resources do you consider the Government should aim to deploy to effectively manage its role?

This question was not answered by the respondent.

14. What potential opportunities are there for Government to leverage its combined buying power to support policy objectives?

This question was not answered by the respondent.

15. If migration to IPV6 is required, are there any barriers to that migration?

This question was not answered by the respondent.

16. How might these barriers be addressed?

This question was not displayed to the respondent.

17. Is an ongoing disparity of provision of broadband services across the country inevitable?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

18. If so, should this be addressed?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

19. How might this be done most effectively?

This question was not answered by the respondent.

20. How symmetrical will digital communications networks have to be in the future? Will this differ across user types? What implications does this have for fixed and wireless broadband provision?

This question was not answered by the respondent.

21. Which countries should be our benchmarks on communications infrastructure to ensure that business remains in the UK and continues to invest?

Text Response

22. What metrics do you think should or will become relevant in comparing network performance in different countries?

This question was not answered by the respondent.

23. What metrics should most appropriately be used as the basis to set objectives for Government policy?

Text Response

One of the most important measures of the performance of an access network for an effective digital economy is the one of the most difficult to objectively measure on an IP network and that is "network congestion". What makes it particularly complex is that congestion will vary across the network and time of day so average figures are useless. But it is the performance that matters most to businesses and consumers dependent on the broadband Internet. DCMS needs to study how best to express a measurable objective for network congestion.

24. Do you agree with this scenario or elements within it?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%
2	Disagree		0	0%
3	Neither Agree nor Disagree		1	100%
4	Agree		0	0%
5	Strongly Agree		0	0%
	Total		1	

25. Where do you agree/disagree? If you disagree what alternative scenario do you envisage?

This question was not answered by the respondent.

26. What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

This question was not answered by the respondent.

27. Are there technologies not identified here that you think will have a major impact on the performance of existing infrastructure or the deployment of additional infrastructure in the next 10-15 years?

This question was not answered by the respondent.

28. If yes, please give details.

This question was not displayed to the respondent.

29. Are there wider environmental issues not reflected in the scenario e.g. the price of availability of energy that will affect any of the scenarios?

This question was not answered by the respondent.

30. In what way might these wider environmental issues affect any of the scenarios?

This question was not displayed to the respondent.

31. How likely is any unforeseen disruption to this scenario?

This question was not answered by the respondent.

32. In what area might it occur?

This question was not displayed to the respondent.

33. Do you agree with this scenario or elements within it?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%
2	Disagree		0	0%
3	Neither Agree nor Disagree		1	100%

4	Agree		0	0%
5	Strongly Agree		0	0%
	Total		1	

34. Where do you agree/disagree? If you disagree what alternative scenario do you envisage?

This question was not answered by the respondent.

35. What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

This question was not answered by the respondent.

36. Are there technologies not identified here that you think will have a major impact on the performance of existing infrastructure or the deployment of additional infrastructure in the next 10-15 years?

This question was not answered by the respondent.

37. If yes, please give details.

This question was not displayed to the respondent.

38. Are there wider environmental issues not reflected in the scenario e.g. the price of availability of energy that will affect any of the scenarios?

This question was not answered by the respondent.

39. In what way might these wider environmental issues affect any of the scenarios?

This question was not displayed to the respondent.

40. How likely is any unforeseen disruption to this scenario?

This question was not answered by the respondent.

41. In what area might it occur?

This question was not displayed to the respondent.

42. Do you agree with this scenario or elements within it?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%
2	Disagree		0	0%
3	Neither Agree nor Disagree		1	100%
4	Agree		0	0%
5	Strongly Agree		0	0%
	Total		1	

43. Where do you agree/disagree? If you disagree what alternative scenario do you envisage?

This question was not answered by the respondent.

44. What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

This question was not answered by the respondent.

45. Are there technologies not identified here that you think will have a major impact on the performance of existing infrastructure or the deployment of additional infrastructure in the next 10-15 years?

This question was not answered by the respondent.

46. If yes, please give details.

This question was not displayed to the respondent.

47. Are there wider environmental issues not reflected in the scenario e.g. the price of availability of energy that will affect any of the scenarios?

This question was not answered by the respondent.

48. In what way might these wider environmental issues affect any of the scenarios?

This question was not displayed to the respondent.

49. How likely is any unforeseen disruption to this scenario?

This question was not answered by the respondent.

50. In what area might it occur?

This question was not displayed to the respondent.

51. Are there factors, for example technical or unrelated to the regulatory framework, that could create bottlenecks and delay future infrastructure deployment in the UK in this timeframe, that would result in demand not being met or the UK not being seen as a leading digital nation?

This question was not answered by the respondent.

52. Please give details.

This question was not displayed to the respondent.

53. 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?

#	Answer	Bar	Response	%
1	Commercial providers will meet demand on a purely commercial basis.		0	0%
2	Some form of public intervention is likely.		1	100%
	Total		1	

54. If public intervention is likely how might that work with the commercial provision of infrastructure? What form might that intervention take?

This question was not answered by the respondent.

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

This question was not answered by the respondent.

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

#	Answer	Bar	Response	%
1	Scenario 1		0	0%
2	Scenario 2		0	0%

3	Scenario 3		0	0%
4	None		1	100%

57. Please give your reasoning for why you think this scenario or combination of scenarios is most likely.

Text Response

The EU/Government/Ofcom are a huge force in play in the market. If the Government sets an ambitious objective for the UK's infrastructure in line with EU policy and Ofcom's objectives are also brought into line – there is a very high likelihood that this is what will actually emerge. I would encourage the Government to not only set high ambitions but to lobby the EU to do likewise and ensure Ofcom's objectives are brought into line.

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

Text Response

As mobile network data speeds and capacity increase over the coming decade so coverage (at those speeds and capacity) is inevitably going to shrink. This is a product of single frequency networks and the greater use of frequency bands above 2 GHz. Where we tend to think of under-served areas in today's telephone world as the absence of a mobile signal, in the future it will be both the absence of enough signal for bands above 2 GHz and enough cell edge capacity across the piece. The above issues are on a track to be made considerably worse by the current over-consolidation of mast/site sharing that is going on. Whilst two mast sharing groups is a reasonable compromise between network economics and competitive choice there is a growing trend for all four mobile operators to share the same mast/site. Sharing of masts/sites by all four mobile operators is the wrong thing to happen for the country. It leads to identical cell edges. Under-served customers in these cell edges (that could run into millions of consumers) will have no prospect of an alternative provider when speeds crash in the busy periods. There needs to be a regulatory vision of two distinct site sharing groups and competition policy needs to be re-framed to support this. Site diversity combined with spectrum sharing across the two site sharing groups could improve cell edge capacity by up to 2000% over substantial areas of the country for millions of consumers.

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

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

60. Please give details.

Text Response

61. Is there a role for a revised USO or USC to ensure that minimum consumer demand requirements are met and to reduce the potential for a new digital divide? What might this look like?

This question was not answered by the respondent.

62. What might this look like?

This question was not displayed to the respondent.

63. In terms of supporting future innovation and long-term investment in infrastructure, what areas of broadcasting regulation may have served its purpose by 2025 -2030 (or indeed earlier). What future technical developments may also have longer term implications for regulation and wider public policy?

This question was not answered by the respondent.

64. Are there changes to the EU Framework that the UK might seek to encourage more competition in UK markets?

This question was not answered by the respondent.

65. Please give details.

This question was not displayed to the respondent.

66. Should Government seek changes to the European Framework which put more reliance on competition law?

#	Answer	Bar	Response	%
1	Strongly Disagree		1	100%
2	Disagree		0	0%
3	Neither Agree nor Disagree		0	0%
4	Agree		0	0%
5	Strongly Agree		0	0%
	Total		1	

67. How might this be done?

This question was not displayed to the respondent.

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

Text Response

It is important to look at UK network competition at every level particularly in the mobile market. Currently mobile retail competition is very strong, RAN competition is moderate, site competition is weak and fibre back-haul

competition is non-existent over at least half the country. The net result is that mobile competition is working well for price, moderate for capacity (depending upon location) and weak for coverage. The competitive pressure is also relatively weak for major network innovation eg the UK was slow to roll out 4G. Competition alone will not deliver major infrastructure technology change and certainly not as fast as some of the concerted government/industry partnerships will achieve in other parts of the world eg the Far East. There has always been components of cooperation (eg technical standards etc) and components of competition in the mobile markets. The Government's needs to enrich the cooperation component in the mix to achieve its objectives of sustaining timely modernization of the UK's wireless broadband infrastructures.

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

This question was not answered by the respondent.

70. Are there any changes to legislation other than the Communications Act that would incentivise the provision of communications infrastructure?

This question was not answered by the respondent.

71. What might these changes be?

This question was not displayed to the respondent.

72. Would there be benefits to investment from a focus on broadband only services? Are there any barriers to the emergence and adoption of broadband only services, whilst still providing necessary access to emergency services?

This question was not answered by the respondent.

73. Please give details.

This question was not answered by the respondent.

74. Are there any barriers to the emergence and adoption of broadband only services, whilst still providing necessary access to emergency services?

This question was not answered by the respondent.

75. Please give details.

This question was not answered by the respondent.

76. How might copper access networks evolve over time alongside other access technologies? Is there a role for policymakers in helping manage any transition from copper to other access networks?

This question was not answered by the respondent.

77. Views are sought on whether there are any additional actions the Government should consider to ensure 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.

Text Response

The broadband Internet is unleashing huge efficiency gains in just about every corner of our lives and the smartphone provides the capability to deliver this on a personalised basis wherever we are. This is a huge opportunity to vastly improve the experience of emergency calls that exploits the amazing technical advances of the past few decades. The current 999 service sort of works most of the time but the experience for the public could be a whole lot better and there are significant efficiency gains possible for the emergency services if the data capabilities of mobile networks were to be exploited as fully as the telephone capability. If this of interest to DCMS I elaborate on the case in <http://www.stephentemple.co.uk/articles/time-modernise-emergency-calls/>

78. 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?

This question was not answered by the respondent.

79. Views are sought on whether there are any additional actions the Government should consider to ensure 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.

This question was not answered by the respondent.

80. Views are sought on the case for the UK to invest to gain 'early mover advantage'.

This question was not answered by the respondent.

81. Views are sought on what areas in particular the UK should aim to see investment in.

This question was not answered by the respondent.

82. Are there any actions not covered elsewhere in this report that the government should consider to ensure digital communications infrastructure is in place before it is needed and such that it helps generate need?

Text Response

The current mobile base station site rent pricing model exerts a down-ward pressure on the number of base station sites as the total rent bill rises with the number of sites. Dense small cell mobile networks able to deliver data speeds and capacity in the range 1-10 Gb/s over urban areas requires over 100 times more base station sites than exist today. That is more likely to be achieved if public authorities that own suitable structures (lamp posts, traffic signs etc) were to grant access rights for a fixed payment irrespective of the number of structures used. In that way increasing the number of sites does not increase the rent bill but in fact reduces the unit cost. Bringing about this change of site rent pricing model used by public bodies is probably the single most important

measure the Government could take to support the roll-out of small cell clusters essential to making the wireless transport of high volumes of data in urban areas very cheap. In order to keep this comment brief the argument is set out more fully at <http://www.stephentemple.co.uk/articles/falling-site-rents-key-5g-mobile-revolution/>

83. How might we maximise the current R&D and innovation UK landscape to help take advantage of the opportunities provided by future technologies? What needs to be done by Government and its agencies, and industry to tackle any gaps?

This question was not answered by the respondent.

84. In which future communications technologies that you consider the UK has, or could achieve, an international leadership position?

This question was not answered by the respondent.

85. What more might government and industry do to exploit future technologies, associated new applications and emerging business models?

This question was not answered by the respondent.

86. What role might local bodies have in facilitating the future delivery of digital communications infrastructure?

Text Response

See answer to Q39c

87. How can councils maximise the digital communications infrastructure in their local area to support their work on economic regeneration?

Text Response

See answer to Q39c

88. Please provide details of information you feel is relevant to the development of the Digital Communications Infrastructure Strategy and not already covered by the consultation questions.

Text Response

The DCMS have avoided a question on the future of public service broadcasting in an infrastructure context and one can understand the political reason why. But in infrastructure terms the displacement of the TV traffic currently carried by the DTT networks onto mobile networks would flatten the current 4G networks. The long term future of DTT in the planning of 5G networks is a critical issue that cannot sensibly be deferred for ever.