

Initial Report

Last Modified: 10/07/2014

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

Peter Lockhart

4. Are you responding on behalf of an organisation?

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

5. Organisation name

Text Response

Chemring Technology Solutions

6. Contact email address

Text Response

pete.lockhart@chemringts.com

7. Contact address

Text Response

Roke Manor Research Ltd Old Salisbury Lane Romsey, Hants SO51 0ZN

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		1	100%
13	Other		0	0%
14	Business user or business group		0	0%
	Total		1	

9. If other, please give details.*This question was not displayed to the respondent.***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	

12. If yes, please give details.

Text Response

The question is whether the UK government can be an effective facilitator between players in this market and should it intervene when it sees market failure? The UK government through the actions of innovateUK already operates as a facilitator in this market to helping to develop networks between the major UK players. This coupled with research funding through the SBRI results in the government helping to stimulate new innovation in the market. Through EU actions, the UK government does intervene to address market failure and this has been a success especially in the early years of mobile communication development. There is a question of how the UK manages "the scale up" of these initial successes into global brands. The role of the UK government is to manage the economy to meet the needs of its subjects by supporting wealth creation. This means managing the conversion of UK assets such as knowledge workforce and capital into wealth creating propositions. In a regulated economy such as EU, the UK government has to use its position to ensure that state aid rules allow a free and fair market. As the world has effectively become a global marketplace the UK government needs to ensure that UK is an attractive place for foreign companies to do business by developing a skills strategy that is appropriate for the digital economy and by supporting investment in both engineering and business model development.

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

Text Response

The government has a variety of powers from tax-raising, regulations as a well as significant market influence through public procurement. As with any large enterprise the UK government needs a strategy and planning function to define the vision and to manage implementation through the creation of a delivery structure with clear tactical plans. In delivering its products and services an enterprise will typically architect its solutions for optimum business efficiency whilst assuring a level of services by creating management and control structures.

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

Text Response

By operating public services as an interconnected set of enterprises with common standards and policies and with each organisation having a clear view on their communication needs will allow the government to act a lead customer for the UK business. The work of Liam Maxwell has shown how open procurement with common policies can lead to efficiency saving. It is believed that broadening this process will lead to further efficiency savings and with clear direction this will help to achieve government policy objective.

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

#	Answer	Bar	Response	%
1	I think there are significant barriers.		0	0%
2	I think there are insignificant barriers.		0	0%
3	I do not think there are any barriers.		1	100%
4	I do not think IPV6 is required.		0	0%
	Total		1	

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?

Text Response

The cost per user for provision of broadband services is dependent on population density. If digital communication is considered to be a "utility" then this needs to be supplied ubiquitously. However, each section of economic activity needs to be considered individually, i.e. connectivity to rural industries is a different question than provision of digital services to rural communities.

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?

Text Response

This is an interesting question and again needs to be decomposed into end user profiles and the subsequent business case for provision. One too many connectivity, implicitly captures economies of scale and the need for broadcast services will remain. However, as implied in the question, a set of specific user profiles needs to be defined and the needs of these groups modelled and to understand future service provision and also how these systems need to be designed for resilience.

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

Text Response

This is another interesting question as it requires an understanding of the socio-economic factors across these competing nations to achieve a rigorous analysis. Communication infrastructure is only one factor in the business

case for investment although may be significant indicator of overall investment.

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

Text Response

It would be interesting to understand what metrics are used by other nations to promote themselves to business. For instance Estonia has taken an integrated approach to service delivery and also has a reputation for creating world class start-ups such as Skype. Estonia has an overarching approach to provision that links physical and logical aspects.

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

Text Response

It is believed that future metrics should be service provision based rather than physical connectivity.

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?

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

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?

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

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?

#	Answer	Bar	Response	%
1	Very Unlikely		0	0%
2	Unlikely		0	0%
3	Undecided		0	0%
4	Likely		1	100%
5	Very Likely		0	0%
	Total		1	

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?

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

37. If yes, please give details.

Text Response

In these scenarios there is an underestimate of impact on machine learning technologies to mitigate bandwidth and anticipate user needs.

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?

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

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

This question was not answered by the respondent.

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

#	Answer	Bar	Response	%
1	Very Unlikely		0	0%
2	Unlikely		0	0%
3	Undecided		0	0%
4	Likely		1	100%
5	Very Likely		0	0%
	Total		1	

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		0	0%
4	Agree		1	100%
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?

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

46. If yes, please give details.

Text Response

In order to fully answer this question, it would have been useful to breakdown the future scenario into services, i.e. broadcast, voice communication, data services, location, logistics, healthcare etc, and define a set of users from infrastructure managers to the end users of the services. This would have allowed a balanced response covering technologies, potential future business models and socio-technical impacts

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?

#	Answer	Bar	Response	%
1	Very Unlikely		0	0%
2	Unlikely		0	0%
3	Undecided		0	0%
4	Likely		1	100%
5	Very Likely		0	0%
	Total		1	

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?

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

52. Please give details.

Text Response

This is a very difficult question to address and answers tend to fall into the classical environment analyses such as PEST. Political issues such as the UK relationship to Europe, increased UK nationalism/federalism and the resulting lack of coherence could affect deployment. The UK has an issue with sovereign control over the communication especially as it is increasingly being designed and standardised with little UK input. Government influence needs to support an entrepreneurial culture and educate the UK that a failure of a start-up is part of the journey to create a success!

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.		1	100%
2	Some form of public intervention is likely.		0	0%
	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 displayed to the respondent.

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

Text Response

No response given.

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		1	100%
3	Scenario 3		1	100%
4	None		0	0%

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

Text Response

Over the next 10 years there will be a marked change in the provision of digital services but with a "long tail" associated with legacy technologies. We already see a divide between those who use social media, in-game comms and other emerging applications to communicate, these users do not distinguish between the differing communication infrastructures and will demand continuous ubiquitous connectivity. They will receive the majority of their information via this media and increasingly ignore traditional linear television. There will be an increase in wearable technology driven by lifestyle demand rather than healthcare needs. The "megatrends" of climate change, globalisation and demographic change will create specific constraints for technology. For instance demographic change will require the imposition of home monitoring technology to reduce healthcare costs.

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

Text Response

This again requires an understanding of the vision for UK and a subsequent prioritisation of needs for the infrastructure. The areas where the market will fail are in the provision of services to remote communities or more markedly to the "digitally disenfranchised" who are unable to access services due to a lack of skill or finances. The market will also require support in driving an efficient use of resources, i.e., land, energy and spectrum.

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.

This question was not answered by the respondent.

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?

#	Answer	Bar	Response	%
1	I think there is a role for a revised USO		0	0%
2	I think there is a role for a revised USC		0	0%
3	I think there is a role for both a revised USC and a revised USO		1	100%
4	I do not think a revised USO or USC are needed		0	0%
	Total		1	

62. What might this look like?

Text Response

This should not be couched in bandwidth terms rather the minimal levels of service provision.

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?

Text Response

In 2025 – 2030, we envisage a continual to move away terrestrial TV broadcast, freeing up valuable spectrum for use for new mobile services especially to support efficient transport and energy usage.

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

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

65. Please give details.

This question was not answered by the respondent.

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

#	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	

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

No response given.

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

Text Response

No response given.

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?

Text Response

No response given.

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

As implicit in this response it is recommended that systems, or more correctly a system of systems approach is undertaken with the government taking the role of system architect to allow the infrastructure to be configured and capable of adapting to future needs.

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?

Text Response

Obviously access and management of infrastructure is key and the UK could start considering how to implement a more dynamic spectrum market building on some of the whitespace concepts.

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.

Text Response

No response given.

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

Text Response

This can only be addressed on a case by case advantage.

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

Text Response

No response given.

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

No response given.

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?

Text Response

The UK has a world renowned science base but has a reputation of failing to exploit its investment in science. Innovation is often described as the conversion of knowledge in to wealth. The UK government as a consequence of the Hauser and Dyson reports have created a number of technology transfer organisations (catapult centres) to stimulate promote growth in specific market areas such as Space, Transport. This approach could to be expanded to be more inclusive and focus on UK business, from SME to Large enterprises. These large enterprises are the organisation that has the scale of investment and vision to invest in long term infrastructure, unfortunately the UK does not have a large OEM business in communications rather it has scale in operation and services. The focus of the communication industry is increasingly in the Far East and the UK needs to influence standards development to ensure that there will be fair access to the future markets

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

Text Response

The UK is developing leadership in machine learning, quantum technologies, cyber physical systems and new material technologies. It is believed that UK could develop leadership in the development of an adaptive systems technology that could support emerging business models.

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

Text Response

No response given

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

Text Response

No response given

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

Text Response

Communication infrastructure needs to be charged on a similar cost basis as other utilities.

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

Industry develops long term strategic roadmaps that it uses to plan technology investment, these include a view on future market needs and potential technology push.