Government horizon scanning : ninth report of session 2013-14 : report, together with formal minutes relating to the report / Science and Technology Committee.

House of Commons

Science and Technology Committee

Government horizon scanning

Ninth Report of Session 2013–14

HC 703

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Science and Technology Committee

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Horizon scanning, in its broadest sense, is an attempt to systematically imagine the future in order to better plan a response. In the absence of a crystal ball, it can help organisations to detect signals, identify trends and think more inventively about what the future might hold, enabling them to capitalise on opportunities and better mitigate threats. It is a crucial activity for any organisation tasked with long-term decision-making.

Horizon scanning is currently enjoying much popularity in government, but the landscape for its execution has long been in flux. In recent years, the Government Office for Science's Foresight Unit has been the one consistent feature of an ever-changing arrangement of short-lived units and forums, and is highly regarded for the scientific rigour of its work. We have also glimpsed pockets of good practice in other departments. However, much of horizon scanning taking place in government today does not deliver the benefit that it is capable of.

The Day review—a Cabinet-led evaluation of cross-government horizon scanning—highlighted several issues: historically, government horizon scanning has been badly coordinated, with departmental silos leading to duplication of effort and loss of insight. Untrained officials have struggled to interpret poorly presented outputs with little obvious policy relevance, making the findings of horizon scanning easy to ignore. The result has been an overabundance of reports that have delivered little in the way of policy change. The review proposed a simple solution: a new hub of cross-departmental horizon scanning, located in the Cabinet Office, at the heart of Government. This recommendation was promptly implemented, and we congratulate the Government for so swiftly acknowledging and acting on the need for change.

However, close scrutiny of the new programme reveals substantial weaknesses. Firstly, it does not give sufficient weight to the valuable role to be played by the Government Office for Science (GO-Science). The relationship between the new programme and GO-Science's long-established (and much lauded) Foresight Unit is ill-defined and fails to exploit the expertise that exists across GO-Science and its networks. The decision to situate the new programme in the Cabinet Office was the correct one, but nevertheless creates a departmental divide between the two units and compounds the historic error made in locating GO-Science in the Department for Business, Innovation and Skills: an error that successive administrations have failed to correct. We consider Foresight's lack of cross-departmental influence to be an unfortunate side-effect of its non-central location and, while we are pleased that this mistake has not been repeated for the new programme, its Cabinet Office location accentuates the incongruity of GO-Science's position. We therefore recommend that GO-Science be relocated to the Cabinet Office.

A second weakness is the programme's apparent lack of clarity—or, at the very least, transparency—regarding its activities. The Minister makes impressive claims about the programme's plans to engage and interact with a wide audience, but we have seen nothing to substantiate these and no evidence of progress being made. Since the programme was

first announced nearly a year ago it has failed to publish a single output or provide any public update on its activities. We consider this lack of information—or even a dedicated web presence—to lay a poor foundation for the Minister's ambitions.

Finally, we are extremely concerned that the new programme offers no opportunity for external views to be heard. Horizon scanning should be a way of opening the Government's eyes to a wide array of possible futures; these simply cannot be imagined by Civil Servants alone. We therefore make a number of recommendations aimed at opening up the programme to greater external input, transforming what we fear may currently be an echo chamber for government views into a more useful hub for genuine futures thinking.

In our view, these failings can be attributed, in part, to a lack of clear ministerial oversight in the early stages of the programme's development. We hope that this report will go some way towards rectifying these shortcomings while the programme is still in its infancy.

1 Introduction

Background

1. It is human nature to think and, on occasion, worry about the future and it is therefore unsurprising that we sometimes attempt to predict it. We draw confidence from the belief that a future foreseen can be better managed, its opportunities capitalised on and its threats mitigated, if not always prevented. In some circumstances, science has helped us to become relatively adept at predicting the future: the Met Office, for example, uses sophisticated scientific techniques to deliver a high degree of accuracy in its short-term forecasting.[1] Unfortunately, as real-world events—from natural disasters, to global political and economic crises and the emergence of new technologies—repeatedly demonstrate, such accuracy is rarely possible in the medium to long-term. The future is therefore likely to always retain its ability to surprise us.[2]

2. This is problematic for governments, whose responsibility it is to prepare policies fit for an inherently unpredictable future while managing an already complex present, often under the pressure of a short-term parliamentary cycle. Governments have therefore developed a range of strategies intended to help them prepare for the long-term.[3] One strategy favoured by the current UK administration is horizon scanning: an attempt to systematically imagine rather than predict the future so that it can be better managed when it arrives, whatever form it may take. In late 2012, as part of its efforts to ensure that horizon scanning was being used effectively to inform policy making, the Government commissioned a cross-departmental review led by Jon Day, Chairman of the Joint Intelligence Committee. The Day review, published in January 2013, concluded that while the UK did not "lack the resources to conduct horizon scanning", a deficit of "truly cross-governmental oversight and coordination" had prevented it from reaching (and influencing) the relevant audiences.[4] Mr Day recommended action to "improve upon and formalise the structures for directing work and making use of the end product".[5] Consequently, in July 2013 the Government announced that it would be "taking a new, joined-up approach" to cross-departmental horizon scanning through the creation of a new horizon scanning programme.[6] Included within the remit of this programme was the formation of two new steering groups to be located in the Cabinet Office and operated under the leadership of the Cabinet Secretary, Sir Jeremy Heywood. According to the Government, these groups would share best practice in horizon scanning, minimise

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1 Science and Technology Committee, Thirteenth Report of Session 2010-12, *Science in the Met Office*, HC1538

2 Science and Technology Committee, Thirteenth Report of Session 2010-12, *Science in the Met Office*, HC1538

3 See also Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1 and also Public Administration Select Committee, Twenty Fourth Report of Session 2010-12, *Strategic thinking in Government*, HC1625

4 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, paras 3 and 6

5 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 3

6 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

duplication and ensure that implications for policy were highlighted at the right levels across government, in addition to overseeing "several new strands of work to inform major areas of policy".[7] This report examines the programme and considers more broadly the Government's approach to horizon scanning.

Our inquiry

3. In July 2013, we issued a call for written evidence addressing the following issues[8]:

a) How do government departments make use of horizon scanning?

b) How effective is horizon scanning in government? Do Ministers and senior officials consider horizon scanning outputs appropriately?

c) What changes could be made to improve existing horizon scanning activity? Will the recommendations made in Jon Day's review of cross-government horizon scanning capability address current shortcomings? What progress has been made implementing these?

d) How effective is the Government at responding to policy or regulatory challenges presented by new technologies?

We also asked for evidence on three case studies: 3D printing; autonomous road vehicles and intelligent transport infrastructure; and negative emissions technologies. In relation to these case studies, we asked:

e) What are (or were) the policy challenges presented by this technology? How have these challenges been identified?

f) How prepared is (or was) the Government to react to challenges presented by this technology? How effective was this reaction?

Insights from these case studies are not explicitly examined in the report but have contributed to our deliberations.

4. During the inquiry, we received 18 written submissions and took oral evidence from 17 witnesses, including:

- Horizon scanning experts from across industry, academia and the third sector;
- Representatives of the national science academies and learned societies;

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7 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

8 Science and Technology Committee, "Horizon scanning in Government departments", 15 July 2013

- Senior civil servants Sir Jeremy Heywood, Cabinet Secretary and Jon Day, Chair of the Horizon Scanning Oversight Group, Cabinet Office;
- The Government's Chief Scientific Adviser, Professor Sir Mark Walport; and
- The Government, represented by the Rt Hon Oliver Letwin MP, Minister for Government Policy, Cabinet Office (hereafter "the Minister").

We would like to thank those who provided written and oral evidence.

5. In this report we consider horizon scanning in its broadest sense, as a suite of techniques used by the Government to help it imagine and prepare for the future. Chapter 2 sets out the case for horizon scanning, briefly considering what it entails, how it is defined and where in government it has typically taken place. The chapter ends with a brief summary of the Day review and its key findings. Chapter 3 then examines the new horizon scanning programme set-up as a result of the Day review and offers several recommendations for its improvement.

2 Horizon scanning in government

The need for effective horizon scanning in government

6. The Government describes horizon scanning as "an overall term for analysing the future".[9] It states that it is used to consider "how emerging trends and developments might potentially affect current policy and practice", so that policy-makers can "take a longer-term strategic approach" and develop policies that are "more resilient to future uncertainty".[10] Horizon scanning currently supports three main types of activity across government:

a) strategy development, where horizon scanning is used to support the "central business planning process, where high-level, long-term objectives are set and where corporate level risks can be identified, monitored and where necessary, mitigated against";[11]

b) policy-making, where horizon scanning "provides a vital function in future proofing policy and making it resilient against future uncertainty";[12] and

c) operational delivery, where horizon scanning and modelling techniques are used to "test a number of hypotheses on a particular system" and "explore interdependencies and their comparative weightings in a variety of situations".[13]

The Government pointed out that horizon scanning had been conducted by the Civil Service "in one form or another for many years" and that policy-level horizon scanning, in particular, was "a well-established practice across many departments".[14] It stated that these activities had led to "a number of notable successes" in the past and highlighted that in today's "tight economic climate" it was "more important than ever" for policy-makers to "have the best possible understanding of the world around us, and how that world is changing" in order to prioritise and adapt effectively.[15]

7. Witnesses considered the Government's interest in horizon scanning to be well founded and agreed that, used well, it could enhance decision-making. The Royal Society described horizon scanning as "an important strategic tool for government decision-making" and Dr Martyn Thomas, Royal Academy of Engineering (RAEng), pointed out that evidence-based policy-making required "appropriate evidence" to be collected "about what the

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9 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

10 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

11 GHS015 [HM Government] para 5

12 GHS015 [HM Government] para 8

13 GHS015 [HM Government] para 9

14 GHS015 [HM Government] paras 8 and 24

15 GHS015 [HM Government] para 24; Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

future is likely to be like".[16] Cranfield University's Centre for Environmental Risks and Futures (CERF) highlighted the economic argument in favour of horizon scanning, stating that the policies that it informed could be "more sustainable and adaptable to changing circumstances", allowing for "more efficient and effective use of diminishing resources".[17]

8. Nevertheless, witnesses were also keen to point out horizon scanning's limitations. CERF stated that the future was "generally not predictable" and described horizon scanning as "a tool" which enabled policy-makers to reflect on how their decisions "might unfold in a number of possible futures", rather than as an attempt to predict a single version of it.[18] Professor Steve Rayner, University of Oxford,[19] agreed that "the most surprising future would be a future without surprises" and that we would therefore "be wise to recognise the limits" of our ability to predict it.[20] Rather, we should design policies that are "robust to unanticipated futures" and "arm ourselves with flexibility to address the unexpected".[21]

9. Although a strong advocate for horizon scanning, the Minister also recognised its limits, acknowledging that it was not a way of "predicting the future with certainty".[22] However, the Government's description of horizon scanning as a way of "future proofing" policy does suggest that it placed a high level of confidence in its outcomes.[23] The risk that horizon scanning might give "politicians and officials a false sense of security" was highlighted by the Public Administration Select Committee in 2012, in its inquiry into *Strategic thinking in government*.[24] The Committee stated that it was "concerned" that the rise in government horizon scanning might lead policy-makers to believe that they were "prepared for all eventualities" and recommended "a greater recognition of the unpredictable nature of the issues which face us as a nation".[25]

10. **We agree with the Government that horizon scanning is a potentially valuable activity and that, used well, it can enhance both short- and long-term decision-making. However, horizon scanning cannot accurately predict the future and it cannot be used to effectively "future proof" individual policies.**

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16 GHS009 [Royal Society] para 2; Q37 [Dr Thomas]

17 GHS005 [CERF] para 4.5

18 GHS005 [CERF] para 4.3

19 Professor Rayner submitted evidence jointly with five other academics from the University of Oxford: Professor Catherine Redgwell, Professor Julian Savulescu, Professor Richard Darton, Professor Myles Allen and Mr Tim Kruger.

20 GHS004 [University of Oxford] para 20

21 GHS004 [University of Oxford] para 20

22 Q239

23 GHS015 [HM Government] para 8

24 Public Administration Select Committee, Twenty Fourth Report of Session 2010-12, *Strategic thinking in Government*, HC1625, para 90

25 Public Administration Select Committee, Twenty Fourth Report of Session 2010-12, *Strategic thinking in Government*, HC1625, para 90

Definitions and terminology

11. In his 2013 review of cross-government horizon scanning, Jon Day, Chair of the Joint Intelligence Committee, observed that there was currently "no set, cross-government agreed definition" of the term 'horizon scanning'.[26] He offered the following definition for future use across government:

> **Government horizon scanning:** A systematic examination of information to identify potential threats, risks, emerging issues and opportunities, beyond the Parliamentary term, allowing for better preparedness and the incorporation of mitigation and exploitation into the policy making process.[27]

This definition encompasses several of the techniques detailed in the Government Office for Science's (GO-Science) *Horizon scanning toolkit*, an online resource which describes a total of 24 different horizon scanning "tools".[28] Several of these were described in a helpful analogy contained within the Public Administration Select Committee's 2007 report, *Governing the future:*

> Let us assume you are standing on the bridge of a ship. You scan the horizon (**Horizon Scanning**) and see an iceberg and your supply ship. You work out the likely speeds and direction of the iceberg and supply ship (**trend analysis**) and put the information into the ship's computer (**modelling**) and then plot a course (**roadmapping**) so that you meet with the supply ship and not the iceberg. While you are doing this you dream of eating some nice chocolate that you hope is on the supply ship (**visioning**).
>
> You realise that the speeds and directions of the iceberg and the supply ship might change, so you work out the range of options to make sure you have the greatest chance of meeting the supply ship (**scenarios**). Even with all of this planning, you know there is a chance of the unexpected and hitting the iceberg so you get the crew to do an evacuation drill (**gaming**). While they are doing it, you work back from the most likely future position of the supply ship to work out the steps you need to get there (**backcasting**).[29]

Given the large number of these tools—of which, according to GO-Science, "horizon scanning" itself is one[30]—several witnesses criticised the Government's use of 'horizon scanning' as "an overall term for analysing the future".[31] English Heritage "noted the confusion" that surrounded "the different usages of the term 'horizon scanning'"[32] and

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26 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 5

27 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 5

28 Foresight Horizon Scanning Centre, "Horizon Scanning Toolkit", 2008

29 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 26

30 Foresight Horizon Scanning Centre, "Horizon Scanning Toolkit", *The Tools*, 2008

31 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

32 GHS007 [English Heritage] para 11

Fiona Lickorish, Centre for Environmental Risks and Futures (CERF), pointed out that there was:

> an inconsistency of the use of the term "horizon scanning" between government and external practitioners. External practitioners tend to use the term "horizon scanning" to mean a particular methodology [...] whereas in government the term is often used interchangeably with "futures analysis", "foresight", "forward-looking" and "intelligence".[33]

Ms Lickorish warned that such "inconsistency" could "lead to misunderstandings between practitioners and government when [government officials] ask for horizon scanning, and that is not really what they are looking for".[34]

12. This inconsistency in terminology did not go unnoticed by Mr Day. In his review, he explained that "for the practitioner" horizon scanning was "part of the Futures tool kit" while "for the strategic customer" it was "an umbrella term describing the analytical activity of looking beyond the here and now".[35] Mr Day also acknowledged in his review that "this difference in terminology" was "confusing" and may have been "a factor" in why "previous attempts to embed horizon scanning into [government] decision making" had failed.[36] However, when we questioned Mr Day on this matter during our inquiry, he stated that these terms "all broadly meant the same thing" and that government spent "too much time focusing on definitions".[37] When asked whether the Government's use of the term 'horizon scanning' should be changed to more accurately reflect its usage outside of government, Mr Day replied that to "change course now" would be "more rather than less confusing" because "we have branded this [activity] within Government as horizon scanning".[38] The Minister told us that he was "really profoundly uninterested" in attempting to define horizon scanning and, when asked to do so, announced that: "my definition of 'horizon scanning' is scanning the horizon".[39] He continued:

> We all know, roughly speaking, when it is being done and when it isn't. It is about whether people are looking sensibly, intelligently and carefully at the future and making educated guesses about what might be most important and interesting about it, and then, in a systematic way, approaching the question: are we suitably adapted to deal with the uncertainties and make greatest use of the likely opportunities? If this fulfils that, whether that counts in the theology of X or Y as horizon scanning, or something else, or grand strategy, I neither know nor care.[40]

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33 Q93

34 Q93

35 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 5

36 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 5

37 Q178

38 Q181

39 Q235

40 Q235

13. **Unlike the Minister, we consider it important that the term 'horizon scanning' is properly defined and applied by government. Inconsistent use of this term has clearly caused confusion in the past. We remind the Government that the Day review cited it as a contributory factor in the Government's historic failure to properly embed horizon scanning into its decision-making.**

14. **In this report, we have had little choice but to adopt the Government's usage of the term 'horizon scanning'; however, this is by no means an endorsement. We consider the term 'futures analysis' to be a more accurate description of the suite of activities undertaken by the Government under the banner of 'horizon scanning'. We are also unconvinced by the Government's argument that its branding of horizon scanning has been so successful as to make a correction impractical. *We therefore recommend that the Government rename its horizon scanning programme the "futures research programme" and clearly set out, both internally and in public, the techniques that it considers to be within the programme's remit.***

Centres of horizon scanning in government

15. Horizon scanning can be conducted on a variety of topics, from the broad (for example, the impact of emerging technologies on the UK economy) to the relatively narrow (for example, the future of computer trading in financial markets).[41] Consequently, horizon scanning activity has historically taken place in two types of location within government:

a) specialised, often centrally-located units responsible for considering cross-government themes or topics with high strategic value; and

b) individual departments, responsible for considering more discrete, department-specific issues.

Key centres of government horizon scanning are described below.

Cross-government horizon scanning

16. Cross-government horizon scanning has recently taken place in three main centres:

The Prime Minister's Strategy Unit

17. The Prime Minister's Strategy Unit (PMSU) was created under the leadership of Tony Blair in 2002 and, for a time, was "the only body at the centre of government with the remit of future thinking".[42] It had three main roles:

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41 See Government Office for Science/Foresight, *The Future of Computer Trading in Financial Markets: An International Perspective*, October 2012

42 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 35

a) to carry out strategy reviews and provide policy advice in accordance with the Prime Minister's policy priorities;

b) to support government departments in developing effective strategies and policies, including helping them to build their strategic capability; and

c) to identify and effectively disseminate thinking on emerging issues and challenges for the UK Government, for example through occasional strategic audits.[43]

According to the Public Administration Select Committee (which scrutinised the work of the PMSU in 2006 report, *Governing the future*) the PMSU was seen as "a kind of internal consultancy or think-tank" and its work was "widely praised".[44] It supported policy development both at the departmental level and through its work with the Prime Minister's Policy Directorate.[45] The PMSU was dissolved by the current administration in 2010.[46]

The Strategic Horizons Unit and the Horizon Scanning Forum

18. In 2008, then Prime Minister Gordon Brown announced the creation of several new national security-focused bodies intended to help the Government "address and manage an increasingly diverse but interconnected set of security challenges and some of their underlying factors including climate change, competition for energy, poverty, and globalisation".[47] These included two new horizon-scanning bodies, both based in the Cabinet Office:

- The Horizon Scanning Unit: Part of the Joint Intelligence Organisation of the Cabinet Office, the Horizon Scanning Unit was launched in September 2008 to "coordinate horizon scanning activity and improve its overall effectiveness across government".[48] In November 2008 it was renamed the Strategic Horizons Unit.

- The Horizon Scanning Forum: The Horizon Scanning Forum, also part of the Cabinet Office, met for the first time in September 2008. Its role was to work "closely with the new Cabinet Office Strategic Horizons Unit to meet the National Security Strategy commitment to 'strengthen the Government's capacity for horizon-scanning, forward planning and early warning'".[49] For a time, it acted as the main commissioning and coordinating body for national security-related horizon scanning work. The forum now appears to have been dissolved.

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43 The National Archives, "Prime Minister's Strategy Unit", last updated 25 January 2007, accessed March 2014http://webarchive.nationalarchives.gov.uk/20031220221857/cabinetoffice.gov.uk/strategy/

44 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, paras 17 and 19

45 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, paras 20-22

46 Financial Times, "Cameron to close down his strategy unit", *Westminster Blog*, November 15 2010

47 HC Deb, 22 July 2008, col 111WS [Commons written ministerial statement]

48 Cabinet Office, *Review of cross-government horizon scanning*, "Annex A: Horizon scanning history", January 2013

49 HC Deb, 9 February 2009, col 1585W [Commons written answer]

In early 2010 the Horizon Scanning Unit/Strategic Horizons Unit was transferred to the National Security Secretariat. According to the Day review, "at this point the horizon scanning coordination function within the Cabinet Office ceased to exist".[50]

The Government Office for Science

19. Located in the Department for Business, Innovation and Skills (BIS), the Government Office for Science (GO-Science) is "the home of science and engineering across government".[51] The Foresight programme, established in 1994, is GO-Science's centre for futures analysis. Its role is to help "the UK Government to think systematically about the future" in order to "ensure today's decisions are robust to future uncertainties".[52] The main outputs of the Foresight programme are in-depth reports which "build a comprehensive evidence-base on major issues looking 20-80 years into the future".[53] Recent examples include: *The future of manufacturing* (2013), *The future of identity* (2013), *The future of computer trading in financial markets* (2012) and *Reducing risks of future disasters* (2012 Several witnesses to this inquiry commended the work of the Foresight programme[54] and the Public Administration Select Committee has described the programme as "a world leader in futures work".[55]

20. In its 2004 *Science and Innovation Investment Framework 2004-2014*, the Government committed to establishing an additional "centre of excellence in science and technology horizon scanning".[56] This unit – the Horizon Scanning Centre (HSC) – now forms part of the Foresight programme and provides "training, toolkits and networks to strengthen futures thinking capacity and share best practice within and across government".[57] According to Sir Mark Walport, the Government's Chief Scientific Adviser (GCSA) and the head of GO-Science, "a lot of the work of the Horizon Scanning Centre is not in producing reports; it is working with networks of people both inside Government and outside to catalyse horizon scanning work".[58] Networks currently led by the HSC include the Heads of Horizon Scanning Network, which comprises "70 representatives" from across "34 government department and agencies", and the Future Intelligence and Security Outlook Network (FUSION), "which focuses on security issues and includes more than 60 members from across 20 organisations".[59] Both the Foresight programme and the HSC continue to exist and remain key centres of government horizon scanning.

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50 Cabinet Office, *Review of cross-government horizon scanning*, "Annex A: Horizon scanning history", January 2013

51 Government Office for Science, "About us", accessed March 2014

52 Foresight, "About Foresight", accessed March 2014

53 Foresight, "About Foresight", accessed March 2014

54 See for example GHS013 [AcSS] para 4; GHS002 [ITS UK] para 2.3; Q8 [Natalie Day] and Q90 [Fiona Lickorish]

55 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 27

56 HM Treasury/Department for Trade and Industry/Department for Education and Skills, *Science and innovation investment framework: 2004-2014*, July 2004

57 Foresight, "About Foresight", accessed March 2014

58 Q170

59 Q175

21. Since 2010, GO-Science has been the only organ of government in which cross-departmental horizon scanning has taken place. Unlike past hubs for such activity, GO-Science has performed this function from a non-central location in government. This matter is discussed further in paragraphs 34-37.

Departmental horizon scanning

22. Historically, horizon scanning has been conducted "to varying degrees across a number of government departments".[60] According to the Government:

> The application of horizon scanning in government departments supports the central business planning process, where high level long term objectives are set and where corporate level risks can be identified, monitored and where necessary, mitigated against. Many government departments centrally manage their horizon scanning function through a central strategy or strategic analysis team.[61]

The Government offered several examples of department-led horizon scanning to demonstrate the extent and breadth of this activity:

> In 2011, Government published the 'White Paper on the Natural Environment', the first in 20 years. The paper received input from across government, including the use of horizon scanning. The National Ecosystem Assessment, a key piece of horizon scanning-based evidence, played a substantive role in the white paper as it provided an assessment of the UK's natural environment and a future assessment of how it will change.[62]
>
> [...]
>
> The Department of Energy and Climate Change's 'Future of Heating' plan takes forecasts of likely future heat demand in the UK and considers the different technologies that could meet this demand, and how specific barriers to deployment could be addressed.[63]
>
> [...]
>
> The Ministry of Justice has carried out horizon scanning activities to identify the key drivers of civil and family justice workload and used this information to create models to estimate future demand for Ministry of Justice services.[64]

23. Departmental horizon scanning was assessed between 2003 and 2013 as part of a series of Science and Engineering Assurance Reviews conducted by GO-Science.[65] These found

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60 Cabinet Office, *Review of cross-government horizon scanning*, "Annex A: Horizon scanning history", January 2013

61 GHS015 [HM Government] para 5

62 GHS015 [HM Government] para 7c

63 GHS015 [HM Government] para 8d

64 GHS015 [HM Government] para 9d

65 Government Office for Science, "Reviewing science and engineering", accessed March 2014

performance to be inconsistent. For example, while GCHQ's approach to horizon scanning was said to be "impressive"[66] and the Department for Environment, Food and Rural Affairs was considered to have "been in the vanguard"[67] of developing capability, the reviews found that the Department of Energy and Climate Change[68], the Home Office[69] and the Department for Culture, Media and Sport[70] did not, at the time, systematically conduct horizon scanning. These reviews were completed during the tenure of Sir Mark's predecessor as GCSA, Sir John Beddington. In his valedictorial session with the Committee, Sir John stated that these reviews were now "moving on to a new stage", which Sir Mark would "be expected to take forward".[71] He explained:

> We have a problem that I have characterised as the Forth [rail] bridge. By the time you finish one [of these reviews] you need to start on the [next one]. We are looking for a new system where it will be the responsibility of the chief scientific adviser in the Department to review the way in which evidence has been used, including the amount of resources, but that review would be subject to external challenge by a panel appointed by the chief scientific adviser.[72]

According to the Day review, a 2012 assessment of government horizon scanning capability found that "all departments" recognised "the value of horizon scanning" but that the resources allocated were "not generally significant" and its use was "not [...] systematic".[73]

24. The Minister acknowledged that the time spent on horizon scanning varied "very, very widely" across departments and stated that he still needed to "gain an understanding" of whether "that balance across different departments" was "right".[74] However, he stressed that the Government was "very single-mindedly" trying to concentrate on how departments were thinking about the future and whether or not they were "developing appropriately flexible and continuingly re-examined" responses to it.[75]

25. **It is beyond this inquiry's remit to conduct a full review of horizon scanning across individual government departments. However, given the inconsistencies of practice and performance that have been highlighted in the past we consider it important that a mechanism for regular scrutiny is put in place. *We recommend that the Government***

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66 Government Office for Science, *Science review of GCHQ*, 2010, para 4.5

67 Office of Science and Innovation, *Science review of the Department for Environment, Food and Rural Affairs*, December 2006, para 38

68 Government Office for Science, *Science and engineering assurance review of the Department for Energy and Climate Change*, August 2012, URN12/762, p.8

69 Office of Science and Innovation, *Science review of the Home Office and the Ministry of Justice*, December 2007, p.9

70 Office of Science and Innovation, *Science review of the Department for Culture, Media and Sport*, para 4.6

71 Oral evidence taken before the Science and Technology Committee on 11 March 2013, HC 1052-I (2012-2013), Q11

72 Oral evidence taken before the Science and Technology Committee on 11 March 2013, HC1052-I (2012-2013), Q11

73 Cabinet Office, *Review of cross-government horizon scanning*, "Annex E: Literature review", January 2013, p.11

74 Q225-6

75 Q229

Office for Science incorporate a regular review of departmental horizon scanning into the next phase of its Science and Engineering Assurance programme.

The Day review

26. The Day review—which was one of the instigators for this inquiry—was itself brought about as a result of a recommendation made by a Select Committee. In April 2012, the Public Administration Select Committee published a report on *Strategic thinking in government*. In this report, the Committee concluded that policy decisions were often made "for short-term reasons, little reflecting the longer-term interests of the nation" and stated that it could have "little confidence" that government policies were informed by "a clear, coherent strategic approach".[76] It recommended "a review of the use of horizon scanning and its purpose".[77] Following publication of this report, the Cabinet Secretary, Sir Jeremy Heywood, announced that he had commissioned a review of cross-departmental horizon scanning.[78] This was carried out in late 2012 by Jon Day, a senior civil servant with a background in national security who had recently been appointed Chair of the Joint Intelligence Committee. The objective of the review was to:

> consider how Departments make use of horizon scanning, to assess the capabilities and structures used by the Civil Service to anticipate risk and identify opportunities over the medium-to-long term, and to make recommendations on how best to enable effective, shared strategic analysis across government on the future challenges facing the UK.[79]

The review consisted of an examination of relevant literature and a series of "workshops, questionnaires and meetings" in which views were sought from "senior officials, policy makers and horizon scanning practitioners".[80]

27. The findings of the Day review were published in January 2013. According to Mr Day, the review demonstrated "the silo nature" of horizon scanning in government, revealing a "problem of joining up, directing and making use" of horizon scanning rather than a lack of the requisite skills or resources.[81] It stated that:

> While some horizon scanning networks coordinate and share best practice, a lack of truly cross-governmental oversight and coordination has prevented cross-cutting horizon scanning work reaching the relevant audiences. This has led to duplication of effort, with narrow, stove piped working which limits the relevance and impact of the output. In addition, there is a belief

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76 Public Administration Select Committee, Twenty Fourth Report of Session 2010-12, *Strategic thinking in Government*, HC1625, p.3

77 Public Administration Select Committee, Twenty Fourth Report of Session 2010-12, *Strategic thinking in Government*, HC1625, para 90

78 Oral evidence taken before the Public Administration Select Committee on 24 May 2012, HC133-i (2012-2013), Q27

79 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 2

80 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 7

81 Q176-177

> that horizon scanning is ignored when the strategic level is not open to challenge.[82]

The review highlighted that, since 2010, there had been no central horizon scanning coordination function in government and that previous efforts to "embed cross-cutting horizon scanning into government structures" had not met with "enduring success".[83] It recommended that a new Cabinet Office-based governance structure for cross-government horizon scanning be established, in order to "remove departmental compartmentalisation and generate an agreed view on cross-cutting issues".[84] (See Figure 1.) The new structure for cross-government horizon scanning came into existence in July 2013 and is the subject of the next chapter of this report.

28. In September 2013, the Public Administration Select Committee completed a "major inquiry on the future of the civil service".[85] It stated that it was "unconvinced" that the Government had developed "the analysis, policies and leadership to address" the problems faced by the Civil Service, highlighting the "siloed" mentality that also featured prominently in the Day review.[86] The Committee recommended "the establishment of a Parliamentary Commission into the Civil Service, in the form of a joint committee of both Houses".[87] ***We consider the siloed nature of the Civil Service to be a fundamental issue which should be explored in a Parliamentary Commission into its future, as recommended by the Public Administration Select Committee.***

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82 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 6

83 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 5. See also Annex A: Horizon scanning history

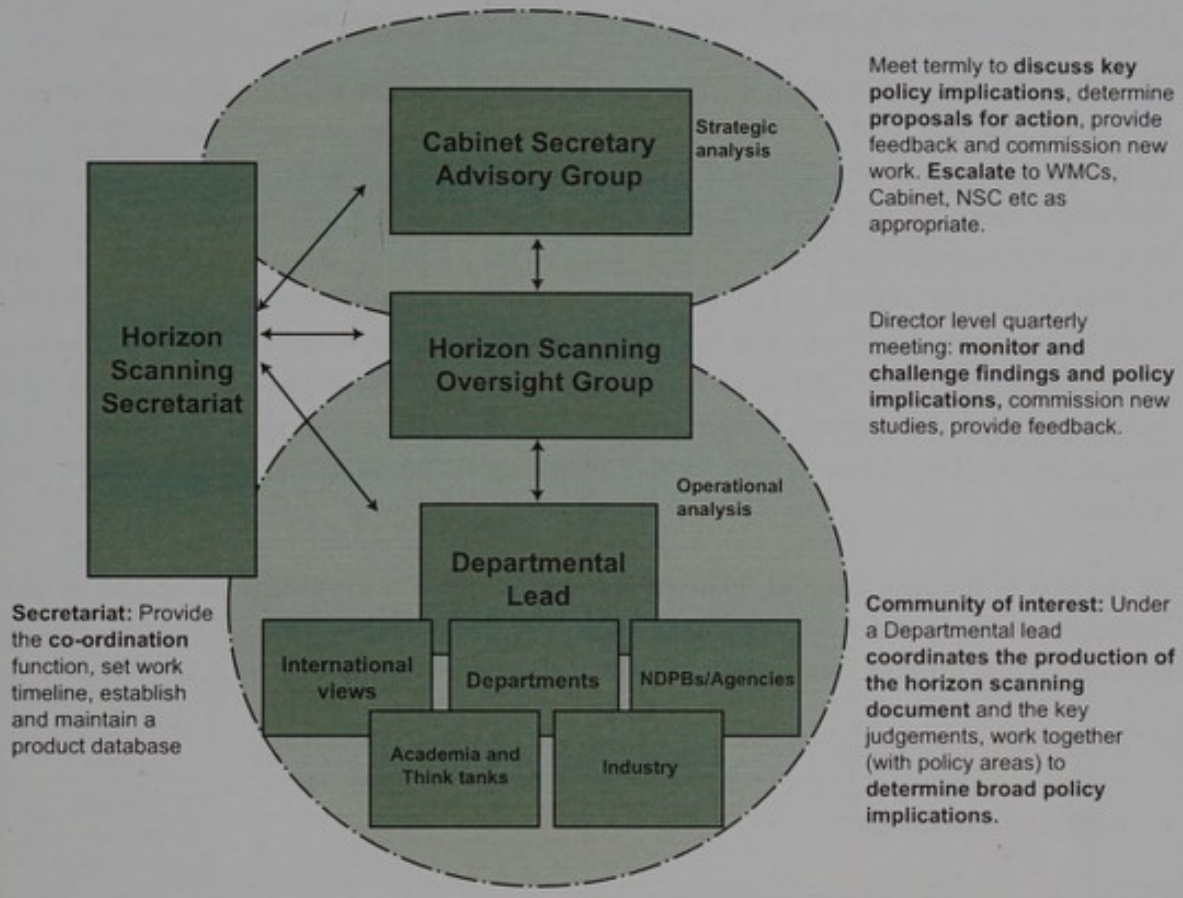
84 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 12

85 Public Administration Select Committee, "Future of the civil service", accessed March 2014

86 Public Administration Select Committee, Eighth Report of Session 2013-14, *Truth to power: how Civil Service reform can succeed*, HC74, summary (p.3) and para 157

87 Public Administration Select Committee, Eighth Report of Session 2013-14, *Truth to power: how Civil Service reform can succeed*, HC74, summary (p.3)

Figure 1: The new structure for cross-government horizon scanning, as recommended by the Day Review[88]



[88] Cabinet Office, *Review of cross-government horizon scanning,* January 2013, p.5

3 A new way forward?

The Government's new horizon scanning programme

29. Following the publication of the Day review in January 2013, the Government announced in July that it had initiated a new horizon scanning programme.[89] The programme, it stated, was to be led by the Cabinet Secretary, Sir Jeremy Heywood, with ministerial oversight from the Minister for the Cabinet Office (Francis Maude MP), the Minister for Government Policy (Oliver Letwin MP) and the Minister of State for the Cabinet Office (David Laws MP).[90] Under a new governance structure implemented as part of the programme, Sir Jeremy was to be advised by a group of senior civil servants known as the Cabinet Secretary's Advisory Group (CSAG), which was itself to be supported by a second group of civil servants known as the Horizon Scanning Oversight Group (GOSH), chaired by Jon Day, Chair of the Joint Intelligence Committee and author of the Day review.[91]

30. As part of the new horizon scanning programme, the Government stated that it had "commissioned several new strands of work to inform major areas of policy". It was announced that these strands were:

- emerging technologies;
- emerging economies;
- changing supply and demand of resources;
- changing social attitudes of young people; and
- the future of demographic change in the UK.[92]

For each of these five strands, the Government stated that departments would work together in "communities of interest" to coordinate the production of horizon scanning and determine broad policy implications, which would then be reviewed, "two or three times a year", by CSAG and GOSH.[93] Departmental membership of CSAG, GOSH and the five communities of interest is detailed in Table 1.

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89 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

90 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013; GHS015 [HM Government] para 33

91 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

92 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

93 GHS015 [Gov] para 32; Q208 [Mr Day]

Table 1: Membership of The Cabinet Secretary's Advisory Group (CSAG), Horizon Scanning Oversight Group (GOSH) and communities of interest, as of December 2013[94]

Department[95]	CSAG	GOSH	Communities of interest				
			Emerging technologies	Social attitudes of young people	Supply & demand of resources	Emerging economies	Demographic change
Business, Innovation & Skills	X	X	X	X	X	X	X
GO-Science	X	X	X	X			
Cabinet Office	X	X	X	X	X		
Communities & Local Government	X	X	X	X	X		x
Culture, Media and Sport			X				
Education	X			X			X
Energy and Climate Change		X	X		X		
Environment, Food & Rural Affairs			X		X		
Foreign & Commonwealth Office	X	X	X		X	X	X
Health	X	X	X	X	X		X
Her Majesty's Treasury	X	X	X			X	X
Home Office		X	X	X			X
International Development	X	X	X		X	X	X
Ministry of Defence	X	X	X	X	X	X	
Ministry of Justice			X	X			
Transport		X	X	X			
Work & Pensions	X	X	X	X		X	X
Northern Ireland Executive			X		X		X
Welsh Government			X	x	X		X
Scottish Government			X		X		X

31. Witnesses were broadly in favour of the new programme. The Royal Society supported the Government's "increasing interest in horizon scanning" and Intelligent Transport Systems UK stated that the changes recommended by the Day review were "necessary and

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94 GHS019 [HM Government supplementary]

95 Only Government Departments and devolved administrations listed. See GHS019 for a full list.

we welcome them".[96] Cranfield University's Centre for Environmental Risks and Futures (CERF) agreed that the recommendations were "generally well founded" and Fiona Lickorish, head of CERF, highlighted the new organisational structure as being particularly useful.[97] Witnesses recognised the historic silos that existed between departments and were particularly supportive of the decision to locate the new programme in the Cabinet Office. The Royal Academy of Engineering stated that the Cabinet Office was the "clear choice" of locus for horizon scanning and considered that this location would "help support cross-departmental activity".[98] Ms Lickorish agreed that the new programme should be located in the Cabinet Office and Jessica Bland, Nesta, was also "very pro the idea of a central function".[99] The Government told us that the Day review had also been "well received in government" and that there had been "buy-in from departments at all levels to engage with the new programme".[100] It highlighted that all government departments were involved in "at least one" community of interest and considered this to be indicative of the "progress" achieved by the new programme.[101] However, it stated that it was "too early to make a comprehensive assessment" as to whether the new programme had "effectively addressed the gaps identified in the [Day] review".[102] Mr Day was content that the Government had implemented his recommendations as he had intended but stated that it was "still too early to say whether they have been as successful as I had hoped".[103]

Areas for improvement

The role of the Government Office for Science (GO-Science)

32. The quality of the work of the Government Office for Science (GO-Science)—particularly that of the Foresight programme—was strongly endorsed by witnesses. Intelligent Transport Systems UK (ITS UK) described Foresight's 2006 report on intelligent infrastructure as "ambitious", "detailed" and "respectfully received by the transport community" and Natalie Day, Oxford Martin School, stated that "many" Foresight reports had proved to be "instrumental".[104] The Government itself also highlighted the quality of Foresight's work. Sir Jeremy Heywood, Cabinet Secretary, stated that Foresight reports were typically of "impeccable quality", describing them as "brilliant pieces of work, really original and path-breaking", while the Minister compared the Foresight unit to a Rolls Royce, which "purrs along and then every couple of years you get one of these great things".[105] However, Foresight's work has not always been used

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96 GHS009 [Royal Society] para 3; GHS002 [ITS UK] para 2.4

97 GHS005 [CERF] para 5.1; Q105 [Ms Lickorish]

98 GHS006 [RAEng] para 3.1

99 Q109

100 GHS015 [HM Government] para 28

101 GHS015 [HM Government] para 40

102 GHS015 [HM Government] para 39

103 Q186

104 GHS002 [ITS UK] para 2.3; Q8 [Ms Day]

105 Q234 [Sir Jeremy Heywood]; Q242 [Minister]

effectively by policy-makers. ITS UK stated, for example, that Foresight's intelligent infrastructure report had had "little lasting impact on subsequent policy" and Sir Jeremy said that while GO-Science had "over many years" conducted "some really excellent work", this had "not always translated into actual policy changes".[106]

33. Given the high standard of the work conducted by the Foresight programme—and its role, in recent years, as the only cross-cutting horizon scanning function in Government (see paragraph 20)—several witnesses were puzzled that GO-Science did not play a more substantial role in the new horizon scanning programme. Dr Martyn Thomas, Royal Academy of Engineering (RAEng), stated that "the role of GO-Science, the work of the Government Chief Scientific Adviser [GCSA], and in particular the network of departmental CSAs [Chief Scientific Advisers]" had not been "stressed anything like enough" in the Day review.[107] Jonathan Cowie, former head of policy at the Institute of Biology, agreed that GO-Science should be "more involved" in government horizon scanning.[108] The review did not set out any specific role for departmental CSAs and although several are represented on the Horizon Scanning Oversight Group (GOSH), none are included in any of the five communities of interest.[109] GO-Science itself is represented in three of the five communities of interest but is not represented in the groups relating to "changing supply and demand of resources" or "emerging economies".[110]

34. Sir Mark Walport, the current GCSA and the head of GO-Science, described GO-Science's role in the new horizon scanning programme as follows:

> We provide support for it. We work, as we have done, on identifying important areas of the future where science, engineering and technology are likely to make contributions and we do detailed pieces of work. Working with the Cabinet Secretary's group [CSAG] we have been doing work in support of demography, which underpins almost every aspect of future policy. And demography feeds very nicely into our work on Future Cities. I don't think there is any incompatibility at all.[111]

Sir Jeremy, Cabinet Secretary, said that GO-Science was "playing a very good role" in the new programme; however, the Minister acknowledged that links between the GO-Science and the Cabinet Office could be improved, stating that an "issue" which he needed to "take up and resolve" was "the connection [...] between the Foresight programme and the horizon scanning programme".[112] The Minister explained:

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106 GHS002 [ITS UK] para 2.3; Q234 [Sir Jeremy Heywood]

107 Q46

108 Q56

109 Three deputy departmental CSAs are included in the community for the emerging technologies work strand. See GHS022 [HM Government supplementary].

110 GHS019 [HM Government]

111 Q213

112 Q242

> I would like to feel confident—which I do not at the moment—that [the Foresight programme] and [the new horizon scanning programme] are brought together in a way which means that in horizon scanning we make maximum use of the Foresight programme to make sure it is easily translated, but also that we feed back into it. I think I am right in saying that there are about 20 people employed in the Government Office for Science on the Foresight programme. That is quite a big, powerful and intellectually able resource, and we need to make sure that it is correctly connected with this exercise.[113]

GO-Science's location in Government

35. There is evidence to suggest that the apparent disconnect between the Government's two cross-departmental horizon scanning programmes and Foresight's limited policy impact can both be linked to GO-Science's non-central location in government. Fiona Lickorish, Centre for Environmental Risks and Futures (CERF), stated that Foresight's work had been "perhaps sidelined" because of its location in the Department for Business, Innovation and Skills and that uptake of its outputs had "not been as good" as it could have been if the unit had been "more centrally located in government".[114] Ms Lickorish added:

> I worked with the strategic horizons unit when it was in the Cabinet Office, and it appeared to have—this is no fault of [...] Foresight—a lot more purchase across government than what was currently available in GO-Science.[115]

Mr Day also appeared to recognise the importance of a central location and recommended in his review that "strategic coordination of horizon scanning activity" be provided by the Cabinet Office in order to "remove departmental compartmentalisation and generate an agreed view on cross cutting issues".[116] He also stressed the need for horizon scanning to have a "senior champion" with cross-departmental influence.[117] The efficacy of these measures in "embedding horizon scanning in the culture of the Civil Service" appeared to be borne out by Sir Mark, who stated that Mr Day's work had "been very helpful for the Government Office for Science and the Horizon Scanning Centre because it has enabled our work to be embedded much more effectively across government".[118]

36. **We regard the work of the Foresight programme to be excellent and consider its relative lack of impact on policy to be a reflection of GO-Science's non-central location in Government rather than the quality of the Foresight programme's outputs.**

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113 Q242

114 Q86

115 Q109

116 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 12

117 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 10

118 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 10; Q180 [Sir Mark]

37. Our predecessor committees have suggested on several occasions that GO-Science and the GCSA's role, to ensure that "the best scientific advice" is utilised at "all levels of government", would be more easily fulfilled if both were to be moved to a more central location in government.[119] In its October 2006 report on *Scientific Advice, Risk and Evidence Based Policy Making*, the Committee stated that the Cabinet Office "would in many respects be a natural location for the Government Chief Scientific Adviser [GCSA], reflecting his role as Chief Scientific Adviser [CSA] to the Cabinet and Prime Minister, his cross-departmental remit and his independence".[120] The Committee concluded that "in view of the cross-cutting nature of science and the cross-departmental responsibilities" of the GCSA, "it would make sense for the post to be based in a department with a similarly cross-cutting remit": that is, the Cabinet Office.[121] In March 2009, the Innovation, Universities, Science and Skills (IUSS) Committee made the same recommendation in its report *Engineering: turning ideas into reality*.[122] The Committee proposed that both the office of the GCSA and GO-Science as a whole should be "placed in the Cabinet Office", explaining that:

> These proposals would be easy for the Government to implement, would put down a marker of the Government's commitment to evidence-based policy, and would lay the structural and cultural foundations for a more evidence-focused civil service.[123]

This recommendation was made for a third time in July 2009 in the IUSS's report *Putting Science and Engineering at the Heart of Government Policy*. This stated that:

> The Government had an opportunity at the last reshuffle to move GO-Science as per our recommendation in the engineering report. That it did not, was a missed opportunity. As the Government Chief Scientific Adviser explained, location matters because it affords daily face-to-face interaction between colleagues in the same building; and as he further pointed out, he has only seen the Prime Minster four times in the past year. We therefore appeal directly to the Prime Minster, who is responsible for GO-Science, to bring it into the Cabinet Office alongside the Strategy Unit.[124]

The previous Government repeatedly rejected these recommendations. In its response to the Committee's 2006 report, the Government stated that the location of the GCSA post

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119 Government Office for Science, "About us", accessed March 2014

120 Science and Technology Committee, Seventh Report of Session 2005-06, *Scientific advice, risk and evidence based policy making*, HC900-I, para 24

121 Science and Technology Committee, Seventh Report of Session 2005-06, *Scientific advice, risk and evidence based policy making*, HC900-I, para 19

122 Innovation, Universities, Science and Skills Committee, Fourth Report of Session 2008-09, *Engineering: turning ideas into reality*, HC50-I, para 313

123 Innovation, Universities, Science and Skills Committee, Fourth Report of Session 2008-09, *Engineering: turning ideas into reality*, HC50-I, para 312

124 Innovation, Universities, Science and Skills Committee, Eighth Report of Session 2008-09, *Putting science and engineering at the heart of Government policy*, HC168-I, para 37

was "a matter for the Prime Minister", but promised to keep this "under review".[125] Three years later, in its response to the Committee's *Engineering* report, the Government accepted that there remained "room for improvement" in ensuring that appropriate scientific and engineering advice was available across government, but stated that is was "fully confident in the ability of the GCSA to take this forward within the newly formed Department for Business, Innovation and Skills".[126] The Government reiterated that this decision would be "kept under review".[127] Finally, in its response to *Putting Science and Engineering at the Heart of Government Policy*, the Government stated that the Prime Minister considered GO-Science to be "best located within BIS" and did "not recognise [the] Committee's assessment of his engagement with the GCSA as 'woefully inadequate'".[128]

38. Our predecessor Committees hoped that a more central location for GO-Science would improve the level of contact between the Prime Minister and his Chief Scientific Adviser. In November 2010 the Prime Minister told the Liaison Committee, that he would "certainly" spend more time with his scientific advisers in the future.[129] We have therefore kept close note of this relationship over the last four years. In March 2013, at the end of his tenure as GCSA, we asked Sir John Beddington how often he had met the Prime Minister during his time in post. Sir John responded that he had written to the Prime Minister "over 40 times" during this Parliament and had "usually" received a reply, but acknowledged that he had "not seen him and banged the table".[130] In our previous session with Sir John, in October 2012, he had stated that he had spent time with the Prime Minister on "two occasions" in the previous 12 months.[131] When we asked Sir Mark the same question in April 2013 he acknowledged that he had not yet met the Prime Minister in his capacity as GCSA.[132] When we asked again in December, Sir Mark admitted to only a single "one-to-one meeting", although he added that he had seen the Prime Minister "at other events" and considered himself to have had "good contact" with him.[133]

39. **We consider the Government's position regarding the location of GO-Science to be illogical, particularly in light of its recent decision to place horizon scanning—quite rightly in our view—at the heart of government decision-making, in the Cabinet Office.**

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125 Science and Technology Committee, First Special Report of Session 2006-07, *Scientific Advice, Risk and Evidence Based Policy Making: Government Response to the Committee's Seventh Report of Session 2005-06*, HC307, para 11

126 Innovation, Universities, Science and Skills Committee, Fifth Special Report of Session 2008-09 , *Engineering: turning ideas into reality: Government Response to the Committee's Fourth Report of Session 2008-09*, HC759

127 Innovation, Universities, Science and Skills Committee, Fifth Special Report of Session 2008-09 , *Engineering: turning ideas into reality: Government Response to the Committee's Fourth Report of Session 2008-09*, HC759

128 Science and Technology Committee, Ninth Special Report of Session 2008-09, *Putting Science and Engineering at the Heart of Government Policy: Government Response to the Innovation, Universities, Science and Skills Committee's Eighth Report of Session 2008-09*, HC1036, para 3

129 Oral evidence taken before the Liaison Committee on 18 November 2010, HC 608-i (2010-2011), Q93

130 Oral evidence taken before the Science and Technology Committee on 11 March 2013, HC 1052-I (2012-2013), Q31-32

131 Oral evidence taken before the Science and Technology Committee on 24 October 2012, HC 666-i (2012-2013), Q3

132 Oral evidence taken before the Science and Technology Committee on 24 April 2013, HC 1052-ii (2012-2013), Q39

133 Oral evidence taken before the Science and Technology Committee on 4 December 2013, HC 847 (2012-2013), Q16

Horizon scanning is a cross-cutting activity with widespread and potentially significant policy implications, which the Government has committed to embedding across the Civil Service. The same can be said for much of the work of GO-Science. We are therefore at a loss to understand why a recommendation accepted as good practice for one—namely strategic coordination of horizon scanning from the Cabinet Office—has repeatedly been rejected for the other. *We again recommend that GO-Science be relocated from the Department for Business, Innovation and Skills to the Cabinet Office, where it can more easily fulfil its remit of ensuring that the best scientific evidence is utilised across government.*

40. **From its new location, we hope that GO-Science would naturally become more fully integrated into the horizon scanning programme. However, we also think that this relationship would benefit from being formally strengthened. *We recommend that the Government Chief Scientific Adviser sit permanently on both the Cabinet Secretary's Advisory Group (CSAG) and the Horizon Scanning Oversight Group (GOSH) and that GO-Science be represented in all communities of interest. We also encourage Departmental Chief Scientific Advisers (DCSAs) to engage more closely with the programme and suggest that DCSAs or their deputies offer themselves as representatives for any community of interest in which their department has an interest.***

Transparency and communication

The argument for transparency

41. Witnesses considered good communication to be central to successful horizon scanning. Marcus Morrell, Arup, stated that communication was a "very important" element of any horizon scanning exercise and that it was "critical" for results to be communicated "in a clear way" so that users could "accessibly digest the material and findings".[134] Doug McKay, Shell, agreed and added that it was necessary to "invest a substantial amount of time in the communication of the results" if horizon scanning were to achieve proper user engagement.[135] The Foresight Toolkit, a predecessor to the current Horizon Scanning Toolkit, recommended that "25 per cent of an initial budget for a foresight programme should be put aside for communicating findings after publication".[136] Witnesses also recommended that the results of government horizon scanning should be shared with the public, although with some caveats. Intelligent Transport Systems UK (ITS UK) stated that the "outputs from state-funded horizon scanning work" should be "made available to the public to read within a sensible time frame" and Professor Steve Rayner, University of Oxford, considered "openness and transparency" to be "fundamental precondition[s] for maintaining public trust and confidence".[137] However, both of these witnesses also acknowledged the risks of absolute transparency. Professor Rayner stated

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134 Q74

135 Q29

136 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1 , para 82

137 GHS002 [ITS UK] para 1.3; GHS004 [University of Oxford] para 22

that, "in some circumstances", the benefits of "un-self-censored" horizon scanning might outweigh the benefits of full transparency.[138] ITS UK also recognised that exceptions might need to be made where publication carried "evident risks, in areas such as defence or security".[139]

42. The extent to which the outputs of government horizon scanning are currently published appears to vary. All major Foresight reports are published on the GO-Science website and are widely publicised across stakeholder groups.[140] However, witnesses perceived reluctance from some departments to publish the outputs of their horizon scanning work. The Institution of Engineering and Technology (IET) stated that "many departments" were "less than enthusiastic about publicising" such outputs because "what can be seen at the horizon is too easily ridiculed by cynics or the media".[141] ITS UK also highlighted the "risk of negative publicity", but stated that this was "not a valid reason for not publishing" horizon scanning outputs.[142] It agreed that there was currently a "lack of openness" in government horizon scanning.[143]

43. **We accept that it may sometimes be necessary for the findings of government horizon scanning to remain confidential, particularly when they relate to sensitive issues such as security and defence. However, such cases should be the exception, not the rule. *With these exceptions, we propose that the outputs of all government horizon scanning be made transparent.* This recommendation applies both to centrally-managed horizon scanning and that conducted at the departmental level, which we consider to be somewhat poorly communicated at present.**

Communication and the new horizon scanning programme

44. When asked whether the new horizon scanning programme's outputs would be published, Mr Day stated that the "presumption" would be "in favour of publication" unless there was "a reason not to".[144] The Minister clarified this position by distinguishing between the two 'sides' of a horizon scanning exercise. He explained:

> On the first of those two sides—the collection of evidence, projections and the translation of those into possible scenarios—my view is that we should be maximally transparent. [...] We should go beyond mere transparency into a positive programme of communication, making sure this is widely disseminated and people can comment, and that we make use of the comments and go back to them in an interactive process.[145]

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138 GHS004 [University of Oxford] para 22

139 GHS002 [ITS UK] para 1.3

140 See, for example, Q168 [Walport]

141 GHS008 [IET] para 1.1

142 GHS002 [ITS UK] para 1.3

143 GHS002 [ITS UK] para 1.3

144 Q198

145 Q236

[...]

> On the other side, however, when it comes to how Departments make use of that set of scenarios and understanding of the possible futures in their policy, I do not think we can at all guarantee to be public about that. That will depend case by case on what it makes sense to reveal and not reveal.[146]

The Minister stated that, as reports emerged from the programme, they would be published "right away" so that the aforementioned "interactive process" between the Government and the wider community could take place.[147] In December 2013, Mr Day told us that one of the programme's exercises had "been through the full process" and would be published "as soon as possible next year".[148] However, the Government has not yet, to our knowledge, published any outputs or any additional information about the programme since it was first announced in July 2013. The programme also does not appear to have a dedicated webpage on either Gov.UK or the current GO-Science website.

45. **We were encouraged by the Minister's plans to "go beyond mere transparency into a positive programme of communication" as part of the new horizon scanning programme. However, several months in, we have not yet seen any evidence of this occurring. We have been disappointed by the lack of information shared about this programme—particularly in relation to its individual work strands—and do not feel that this lays a strong groundwork for the interactive approach which the Minister claims the programme will soon be taking.** ***We recommend that the Government enhance the visibility and transparency of the new horizon scanning programme by promptly setting up a dedicated gov.uk webpage. The new webpage should:***

a) ***detail the background and objectives of the programme;***

b) ***clearly set out the landscape for government horizon scanning, detailing the roles and responsibilities of all major centres of activity;***

c) ***set-out the terms of reference and current membership of the Cabinet Secretary's Advisory Group (CSAG) and the Horizon Scanning Oversight Group (GOSH);***

d) ***provide access to the minutes of meetings of both CSAG and GOSH;***

e) ***detail the objectives, scope and planned activities for each work strand, together with membership of the relevant community of interest;***

f) ***provide links to all of the programme's outputs and supporting documentation, including a facility for comment and interactive engagement, and***

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146 Q237

147 Q237

148 Q199

g) ***provide information and contact details for organisations and individuals who wish to become involved with the programme.***

This webpage should be launched by July 2014 at the latest.

46. ***We also encourage all departments to increase the transparency of their own horizon scanning by providing links to key departmental outputs through this central page and by making supporting information available via a public hub such as data.gov.uk. Transparency should be a key feature of the regular reviews of departmental horizon scanning recommended in paragraph 23.***

47. We consider better communication and improved transparency to be essential precursors to mending another shortcoming in the current programme: that is, the lack of opportunity for external engagement.

External engagement

48. In its 2006 report, *Governing the Future,* the Public Administration Select Committee pointed out that "the ability to think strategically depends, in part, on a willingness to listen to challenges and contrary views".[149] It stated that "involving a wide range of people" in such activities was therefore "important".[150] Witnesses to this inquiry strongly agreed that a wide range of external viewpoints should be incorporated during any horizon scanning exercise. The Royal Academy of Engineering stated that horizon scanning should be conducted in an environment that was "open to challenge" and stressed the need to include "the views of those outside of the civil service and government".[151] Fiona Lickorish, CERF, explained that this was because it was often "easier" for an external person to "probe" issues "a little bit further" and ask "difficult questions", allowing them to be "aired and talked about".[152] Doug McKay, Shell, agreed, pointing out that if horizon scanning was "all internal" it would result in people "saying the same thing" as they had said before".[153] The Day review acknowledged the need for government horizon scanning to undergo "robust challenge" in order "to ensure credibility and enable the development of implications for policy and strategy".[154] It recommended that policy-makers, industry and academia should engage with the new programme through membership of the communities of interest (see figure 1) and that the Cabinet Secretary's Advisory Group (CSAG) should include a "non-executive director", appointed by the Cabinet Secretary, "to provide external views and challenge".[155]

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149 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 79

150 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 79

151 GHS006 [RAEng] para 3.3

152 Q82

153 Q14

154 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 7e

155 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 12i and figure

49. The Government also acknowledged "the power of engaging with external stakeholders and experts" and agreed that "external challenge" was central to the testing of horizon scanning's assumptions and implications.[156] However, the Government has not, to date, implemented the Day review's recommendations to involve external stakeholders in the communities of interest and appoint a non-executive director to CSAG. Mr Day stated that this was because the first year of the programme had been "focused on doing this internally within Government" but that "increasingly, we are now moving out and engaging with the private sector and academia".[157]

50. **Government horizon scanning must be open to challenge if it is to be effective and this means that it must accommodate a range of external viewpoints. This was made clear in the Day review and we were therefore surprised and disappointed to discover that none of the bodies created in its aftermath currently include any external representation. While we acknowledge the need for government horizon scanning to be government-led, we see little value in a horizon scanning exercise which does not incorporate a broader perspective.**

Engaging with scientific experts

51. Cutting-edge science and technology are frequently the subject of horizon scanning projects: 'emerging technologies' has been singled-out as one of the new horizon scanning programme's five strands of work. However, as a "systematic examination of information", horizon scanning itself can also be considered a form of scientific activity.[158] Jessica Bland, Nesta, stated that scientific techniques such as modelling were an increasingly common tool in horizon scanning and a recent Nesta study has shown that other quantitative techniques such as bibliometrics (the statistical analysis of publications) and social network analysis are also becoming increasingly important.[159] In addition, Professor Ann Buchanan, Academy of Social Sciences, and Dr Martyn Thomas, Royal Academy of Engineering (RAEng), stressed the contribution to be made by social scientists[160], arguing that this area of expertise was "absolutely essential" to many horizon scanning projects.[161] Fiona Lickorish, CERF, agreed that horizon scanning was a "social science activity" and added that if there were areas of horizon scanning in which scientific expertise was not of use, then "I haven't ever done them".[162]

52. An obvious mechanism for involving external scientific experts in the horizon scanning process would be through membership of CSAG and the topic-focused communities of interest, as recommended by the Day review. Dr Thomas, RAEng, stated that CSAG, in particular, should "link more closely with all the national academies" to ensure that

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156 GHS015 [HM Government] para 3

157 Q192

158 Cabinet Office, *Review of cross-government horizon scanning*, January 2013, para 5

159 Q98 [Ms Bland]; Nesta, *Quantitative analysis of technology futures: part 1*, May 2013

160 See Q35 and Q53 [Professor Buchanan]

161 Q52 [Dr Thomas]

162 Q94-95

relevant experts could contribute to its work.[163] The Royal Society agreed that the national academies could play "an important role in assisting the horizon scanning efforts of government", in part because of their access to "wide and deep" scientific networks, while Jonathan Cowie, former Head of Science Policy at the Institute of Biology, highlighted that smaller learned societies also had access to "a substantial body of considerable specialist expertise".[164] The Institution of Engineering and Technology suggested that since "the delivery of policy for many Departments [...] rests heavily on public and private industry" it would "seem sensible to expand the membership of both the CSAG and [GOSH] to reflect this" by including representatives from industry on the two steering groups.[165]

53. Sir Mark Walport, the Government Chief Scientific Adviser, acknowledged the importance of science to futures thinking and stated that departmental CSAs had "clearly defined responsibilities" to ensure that there was "sufficient scientific input into horizon scanning across government".[166] He added that he "could not conceive" of a horizon scanning group "that did not have scientific input" and stated that "it would be surprising" if "science, engineering, technology and social science" were "not to have a very strong input into the Cabinet Secretary's Advisory Group".[167] Sir Jeremy Heywood, Cabinet Secretary, said that he did not "rule out bringing in a couple of non-execs or some outsiders on to our group [CSAG], or Jon Day's challenge group [GOSH]", but stated that "the area where I really want to see the external input would be the communities of interest", "where the actual work on looking at best thinking and developing hypotheses gets done".[168]

54. **At its best, horizon scanning is underpinned by scientific techniques and can be enhanced by the involvement of scientific experts, whatever the topic.** ***We therefore recommend that representatives of each of the UK national academies—the Royal Society, the British Academy and the Royal Academy of Engineering—be included as observers on the Horizon Scanning Oversight Group (GOSH) and that membership of the communities of interest be immediately opened up to external organisations, including academic groups, learned societies and industry.***

Engaging with Parliament

55. The new horizon scanning programme does not currently appear to facilitate any parliamentary input, despite the existence of significant horizon scanning activity and expertise across both the House of Commons and the House of Lords. For example, the Parliamentary Office of Science and Technology (POST) is a bicameral office that aims to "anticipate policy implications" of current science and technology issues in order to provide parliamentarians with "independent, balanced and accessible analysis" of these

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163 Q58

164 GHS009 [Royal Society]; GHS014 [Concatenation Science Communication] para 5

165 GHS008 [IET] para 3.3

166 Q214

167 Q212

168 Q241

issues.[169] POST's work is overseen by a Board comprised of parliamentarians drawn from both Houses and several "leading non-parliamentarians from the science and technology community".[170] POST also maintains close relationships with a wide range of academic and other stakeholders and runs a programme of parliamentary events intended to "stimulate debate on a range of topics", making it a key potential point of contact between parliamentarians and the wider community.[171] POST's expertise in futures research was recognised in the Public Administration Select Committee's 2006 report, *Governing the future*, which recommended that it form the basis for a dedicated "futures forum" where parliamentarians could "work with external bodies to inform themselves and stimulate debate".[172] The Committee stated that such a forum could "build on the excellent work conducted by [POST] in providing information and a forum for debate in Parliament on scientific issues" and recommended that POST be "strengthened" to "enhance its work" in this field.[173]

56. Horizon scanning also forms part of the remit of parliamentary Select Committees. In the House of Commons, for example, the majority of Select Committees are appointed to "examine the expenditure, administration and policy" of their principle department—all matters inherently linked to a department's expectations and plans for the future.[174] Indeed, the Science and Technology Committee has frequently considered topics informed by, or made necessary as a result of, horizon scanning; for example our recent inquiries on antimicrobial resistance[175], the communication of climate science[176] and scientific advice and evidence in emergencies.[177]

57. **We consider it vital that the horizon scanning conducted on behalf of Government informs and is informed by the horizon scanning conducted on behalf of Parliament. We consider the Parliamentary Office of Science and Technology (POST) to be one possible conduit for this flow of information. *We recommend that representatives from POST act as observers on all relevant communities of interest included within the new horizon scanning programme.***

58. ***We also recommend that the Government establishes a method through which parliamentarians with an interest in horizon scanning—for example, Select Committee Chairs and Members—can engage with the new horizon scanning programme.***

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169 Parliamentary Office of Science and Technology, "POST", accessed March 2014

170 Parliamentary Office of Science and Technology, "POST Board", accessed March 2014

171 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 101

172 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 103

173 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 101-103

174 Standing orders of the House of Commons: Public Business 2013, Standing Order 152(1)

175 Science and Technology Committee, "Antimicrobial resistance", accessed March 2014

176 Science and Technology Committee, "Climate: public understanding and its policy implications", accessed March 2014

177 Science and Technology Committee, "Scientific advice and evidence in emergencies", accessed March 2014

4 Conclusion

59. In recent years, the landscape for cross-government horizon scanning has been in flux. Centralised hubs of horizon scanning have come into—and, in the case of the short-lived Strategic Horizons Unit, very rapidly out of—existence, to be replaced with departmental functions with little cross-government influence. The Government Office for Science (GO-Science) has attempted to fill this vacuum by itself conducting high quality cross-cutting horizon scanning through its "world lead[ing]"[178] Foresight programme and by attempting to improve and coordinate departmental capability through its specialist Horizon Scanning Centre. However, GO-Science's non-central location has limited its influence and horizon scanning remains an activity frequently performed but rarely used across much of government. The result, according to the Public Administration Select Committee, is that "policy decisions are made for short-term reasons, little reflecting the longer-term interests of the nation".[179]

60. The Government hopes that its new horizon scanning programme will be a panacea for these past ills. It states that the programme constitutes a "new approach" which aims to "embed better horizon scanning capabilities in the policy-making process" across the UK Civil Service.[180] We agree that the new programme provides an opportunity for a clean slate. However, we are concerned that, so far, the programme has more closely resembled a quick fix than a deeply considered change of approach. In particular, there has been a worrying lack of clarity over exactly what horizon scanning is and what the new programme will attempt to do. While the Minister shrugged off his inability to define horizon scanning as a reluctance to engage in a "theological dispute"[181], we are unconvinced by this argument and consider his response to be evidence that the remit of the programme has not been properly set out. At the very least, it has not been properly communicated: since the programme was first launched nearly a year ago no further information about its activities has been made public and its meetings have occurred behind closed doors, without published minutes. The Minister has also acknowledged that he was not "confident" in how the new programme would "make maximum use of" the excellent work currently conducted by the Government Office for Science (GO-Science).[182] In this report, we have suggested one step—the re-location of GO-Science to the Cabinet Office—which would help integrate these two loci for strategic horizon scanning; nevertheless, we are disappointed that this fundamental question was not resolved more successfully by the Day review and was not taken into consideration prior to the launch of the new programme.

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178 Public Administration Select Committee, Second Report of Session 2006-07, *Governing the Future*, HC123-1, para 27

179 Public Administration Select Committee, Twenty Fourth Report of Session 2010-12, *Strategic thinking in Government*, HC1625, p.3

180 Cabinet Office/Government Office for Science, "Horizon scanning programme: a new approach for policy making", 12 July 2013

181 Q235

182 Q242

61. We at least partly attribute the failings of the new programme to a lack of clear ministerial oversight. When we first invited the Cabinet Office to provide us with a Minister from whom to take oral evidence, we were told that it would be the Minister for the Cabinet Office, Francis Maude MP—one of three individuals who we were told would be providing ministerial oversight for the new horizon scanning programme.[183] Less than a week before we were due to hear from Mr Maude, we were told that he was no longer available. According to Mr Maude, during the lengthy rescheduling that ensued,[184] it became "apparent that it would make greater sense for another Cabinet Office minister to appear" in his place. He continued: "the Programme is at a very early stage of development, and as a result of subsequent consideration within Cabinet Office, Oliver Letwin will now provide ministerial oversight of this work".[185] Mr Letwin himself later provided further explanation:

> Up until very recently, Francis Maude was keeping an eye on [the programme] because it had been set up by the Cabinet Secretary's process and he is the Minister for the Cabinet Office. As it has evolved and it became clear that what it is actually going to be focusing on is a series of things that will probably have policy rather than administrative effects, in the invisible dividing line between Francis and myself we concluded that it made more sense for it to be on my side of the House, as I deal with policy rather than administration and he deals with administration rather than policy. Therefore, I have been drafted in, and from now on I will be taking a very active interest in it.[186]

62. **We do not consider it satisfactory for proper Ministerial oversight to commence over six months after a new initiative has been launched. Indeed, we consider this to indicate a lack of careful thought in the planning of the new programme that is also apparent in several aspects of its design and implementation.** ***We recommend that the Government take a more considered approach to such initiatives in the future and encourage it to seriously consider the recommendations made in this report to address the shortcomings of its new horizon scanning programme.***

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183 GHS015 [HM Government] para 33

184 The oral evidence session in question was due to take place on 09 December 2013; the rescheduled session did not occur until six weeks later on 22 January 2014.

185 General correspondence of the Science and Technology Committee, letter from Francis Maude MP to Andrew Miller MP, 7 January 2014 in respect of Government horizon scanning

186 Q221

Conclusions and recommendations

Horizon scanning in government

1. We agree with the Government that horizon scanning is a potentially valuable activity and that, used well, it can enhance both short- and long-term decision-making. However, horizon scanning cannot accurately predict the future and it cannot be used to effectively "future proof" individual policies. (Paragraph 10)

2. Unlike the Minister, we consider it important that the term 'horizon scanning' is properly defined and applied by government. Inconsistent use of this term has clearly caused confusion in the past. We remind the Government that the Day review cited it as a contributory factor in the Government's historic failure to properly embed horizon scanning into its decision-making. (Paragraph 13)

3. In this report, we have had little choice but to adopt the Government's usage of the term 'horizon scanning'; however, this is by no means an endorsement. We consider the term 'futures analysis' to be a more accurate description of the suite of activities undertaken by the Government under the banner of 'horizon scanning'. We are also unconvinced by the Government's argument that its branding of horizon scanning has been so successful as to make a correction impractical. We therefore recommend that the Government rename its horizon scanning programme the "futures research programme" and clearly set out, both internally and in public, the techniques that it considers to be within the programme's remit. (Paragraph 14)

4. It is beyond this inquiry's remit to conduct a full review of horizon scanning across individual government departments. However, given the inconsistencies of practice and performance that have been highlighted in the past we consider it important that a mechanism for regular scrutiny is put in place. We recommend that the Government Office for Science incorporate a regular review of departmental horizon scanning into the next phase of its Science and Engineering Assurance programme. (Paragraph 25)

5. We consider the siloed nature of the Civil Service to be a fundamental issue which should be explored in a Parliamentary Commission into its future, as recommended by the Public Administration Select Committee. (Paragraph 28)

Areas for improvement

The role of the Government Office for Science (GO-Science)

6. We regard the work of the Foresight programme to be excellent and consider its relative lack of impact on policy to be a reflection of GO-Science's non-central location in Government rather than the quality of the Foresight programme's outputs. (Paragraph 36)

7. We consider the Government's position regarding the location of GO-Science to be illogical, particularly in light of its recent decision to place horizon scanning—quite rightly in our view—at the heart of government decision-making, in the Cabinet

Office. Horizon scanning is a cross-cutting activity with widespread and potentially significant policy implications, which the Government has committed to embedding across the Civil Service. The same can be said for much of the work of GO-Science. We are therefore at a loss to understand why a recommendation accepted as good practice for one—namely strategic coordination of horizon scanning from the Cabinet Office—has repeatedly been rejected for the other. We again recommend that GO-Science be relocated from the Department for Business, Innovation and Skills to the Cabinet Office, where it can more easily fulfil its remit of ensuring that the best scientific evidence is utilised across government. (Paragraph 39)

8. From its new location, we hope that GO-Science would naturally become more fully integrated into the horizon scanning programme. However, we also think that this relationship would benefit from being formally strengthened. We recommend that the Government Chief Scientific Adviser sit permanently on both the Cabinet Secretary's Advisory Group (CSAG) and the Horizon Scanning Oversight Group (GOSH) and that GO-Science be represented in all communities of interest. We also encourage Departmental Chief Scientific Advisers (DCSAs) to engage more closely with the programme and suggest that DCSAs or their deputies offer themselves as representatives for any community of interest in which their department has an interest. (Paragraph 40)

Transparency and communication

9. We accept that it may sometimes be necessary for the findings of government horizon scanning to remain confidential, particularly when they relate to sensitive issues such as security and defence. However, such cases should be the exception, not the rule. With these exceptions, we propose that the outputs of all government horizon scanning be made transparent. This recommendation applies both to centrally-managed horizon scanning and that conducted at the departmental level, which we consider to be somewhat poorly communicated at present. (Paragraph 43)

10. We were encouraged by the Minister's plans to "go beyond mere transparency into a positive programme of communication" as part of the new horizon scanning programme. However, several months in, we have not yet seen any evidence of this occurring. We have been disappointed by the lack of information shared about this programme—particularly in relation to its individual work strands—and do not feel that this lays a strong groundwork for the interactive approach which the Minister claims the programme will soon be taking. We recommend that the Government enhance the visibility and transparency of the new horizon scanning programme by promptly setting up a dedicated gov.uk webpage. The new webpage should:

    a) detail the background and objectives of the programme;

    b) clearly set out the landscape for government horizon scanning, detailing the roles and responsibilities of all major centres of activity;

    c) set-out the terms of reference and current membership of the Cabinet Secretary's Advisory Group (CSAG) and the Horizon Scanning Oversight Group (GOSH);

d) provide access to the minutes of meetings of both CSAG and GOSH;

e) detail the objectives, scope and planned activities for each work strand, together with membership of the relevant community of interest;

f) provide links to all of the programme's outputs and supporting documentation, including a facility for comment and interactive engagement, and

g) provide information and contact details for organisations and individuals who wish to become involved with the programme.

This webpage should be launched by July 2014 at the latest. (Paragraph 45)

11. We also encourage all departments to increase the transparency of their own horizon scanning by providing links to key departmental outputs through this central page and by making supporting information available via a public hub such as data.gov.uk. Transparency should be a key feature of the regular reviews of departmental horizon scanning recommended in paragraph 23. (Paragraph 46)

External engagement

12. Government horizon scanning must be open to challenge if it is to be effective and this means that it must accommodate a range of external viewpoints. This was made clear in the Day review and we were therefore surprised and disappointed to discover that none of the bodies created in its aftermath currently include any external representation. While we acknowledge the need for government horizon scanning to be government-led, we see little value in a horizon scanning exercise which does not incorporate a broader perspective. (Paragraph 50)

13. At its best, horizon scanning is underpinned by scientific techniques and can be enhanced by the involvement of scientific experts, whatever the topic. We therefore recommend that representatives of each of the UK national academies—the Royal Society, the British Academy and the Royal Academy of Engineering—be included as observers on the Horizon Scanning Oversight Group (GOSH) and that membership of the communities of interest be immediately opened up to external organisations, including academic groups, learned societies and industry. (Paragraph 54)

14. We consider it vital that the horizon scanning conducted on behalf of Government informs and is informed by the horizon scanning conducted on behalf of Parliament. We consider the Parliamentary Office of Science and Technology (POST) to be one possible conduit for this flow of information. We recommend that representatives from POST act as observers on all relevant communities of interest included within the new horizon scanning programme. (Paragraph 57)

15. We also recommend that the Government establishes a method through which parliamentarians with an interest in horizon scanning—for example, Select Committee Chairs and Members—can engage with the new horizon scanning programme. (Paragraph 58)

Conclusion

16. We do not consider it satisfactory for proper Ministerial oversight to commence over six months after a new initiative has been launched. Indeed, we consider this to indicate a lack of careful thought in the planning of the new programme that is also apparent in several aspects of its design and implementation. We recommend that the Government take a more considered approach to such initiatives in the future and encourage it to seriously consider the recommendations made in this report to address the shortcomings of its new horizon scanning programme. (Paragraph 62)

Formal Minutes

Monday 28 April 2014

Members present:

Andrew Miller, in the Chair

Stephen Metcalfe	Pamela Nash
Stephen Mosley	David Tredinnick

Draft Report (*Government horizon scanning*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 62 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Ninth Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

Written evidence was ordered to be reported to the House for publishing with the Report.

[Adjourned till Wednesday 30 April at 9.00 am

Witnesses

Wednesday 23 October 2013	*Page*
Alun Huw Williams, Principal, SAMI Consulting, **Doug McKay**, Vice-President International Organisations, Shell International Ltd, and **Natalie Day**, Head of Policy, Oxford Martin School, University of Oxford	Q1–32
Dr Martyn Thomas, Royal Academy of Engineering, **Professor Ann Buchanan**, Academy of Social Sciences, and **Jonathan Cowie**, former Head of Science Policy and Books, Institute of Biology	Q33–67

Wednesday 20 November 2013	
Fiona Lickorish, Head of the Institute for Environment, Health, Risks and Futures, Cranfield University, **Jessica Bland**, Technology Futures Analyst, Nesta, and **Marcus Morrell**, Senior Futures Analyst, Arup	Q68–113
Professor Burkhard Schafer, Professor of Computational Legal Theory, Edinburgh School of Law, **Professor Paul Newman**, Mobile Robotics Group, University of Oxford, **Dr Nick Reed**, Intelligent Transport Systems UK, and **Dr Graeme Smith**, Business Manager, Connected Services, Control and Electronics, Ricardo UK Ltd	Q114–165

Wednesday 4 December 2013	
Professor Sir Mark Walport, Chief Scientific Adviser to Her Majesty's Government and Head of the Government Office for Science, and **Jon Day**, Chair, Horizon Scanning Oversight Group, Cabinet Office	Q166–220

Wednesday 22 January 2014	
Rt Hon Oliver Letwin MP, Minister for Government Policy, Cabinet Office, and **Sir Jeremy Heywood**, Cabinet Secretary	Q221–243

Published written evidence

The following written evidence was received and can be viewed on the Committee's inquiry web page at www.parliament.uk/science. INQ numbers are generated by the evidence processing system and so may not be complete.

1	National Roads Policing Lead	GHS0001
2	ITS United Kingdom	GHS0002
3	Tim Kruger	GHS0004
4	Cranfield University	GHS0005
5	The Royal Academy of Engineering	GHS0006
6	English Heritage	GHS0007
7	The Institution of Engineering and Technology	GHS0008
8	The Royal Society	GHS0009
9	The Russell Group of Universities	GHS0010
10	Telematics.com	GHS0012
11	Academy of Social Sciences	GHS0013
12	Concatenation Science Communication	GHS0014
13	HM Government	GHS0015
14	Ricardo UK Ltd	GHS0016
15	School of Law, University of Edinburgh	GHS0017
16	Milton Keynes Council	GHS0018
17	HM Government (supplementary)	GHS0019
18	HM Government (supplementary)	GHS0021
19	HM Government (supplementary)	GHS0022

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the Committee's website at www.parliament.uk/science.

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2013–14

First Special Report	Educating tomorrow's engineers: the impact of Government reforms on 14–19 education: Government Response to the Committee's Seventh Report of Session 2012–13	HC 102
First Report	Water quality: priority substances	HC 272–I (HC 648)
Second Special Report	Marine science: Government Response to the Committee's Ninth Report of Session 2012–13	HC 443
Third Special Report	Bridging the valley of death: improving the commercialisation of research: Government response to the Committee's Eighth Report of Session 2012–13	HC 559
Second Report	Forensic science	HC 610 (Cm 8750)
Fourth Special Report	Water quality: priority substances: Government response to the Committee's First Report of Session 2013–14	HC 648
Third Report	Clinical trials	HC 104 (Cm 8743)
Fifth Special Report	Clinical trials: Health Research Authority Response to the Committee's Third Report of Session 2013–14	HC 753
Fourth Report	Work of the European and UK Space Agencies	HC 253 (HC 1112)
Fifth Report	Pre-appointment hearing with the Government's preferred candidate for Chair of the Natural Environment Research Council (NERC)	HC 702
Sixth Special Report	Forensic science: Research Councils UK Response to the Committee's Second Report of Session 2013–14	HC 843
Seventh Special Report	Clinical trials: Medical Research Council Response to the Committee's Third Report of Session 2013–14	HC 874
Sixth Report	Women in scientific careers	HC 701
Seventh Report	Pre-appointment hearing with the Government's preferred candidate for Chair of the Arts and Humanities Research Council (AHRC)	HC 989
Eighth Special Report	Work of the European and UK Space Agencies: Government Response to the Committee's Fourth Report of Session 2013–14	HC 1112
Eighth Report	Communicating climate science	HC 254

Session 2012–13

First Special Report	Science in the Met Office: Government Response to the Committee's Thirteenth Report of Session 2010–	HC 162

	12	
First Report	Devil's bargain? Energy risks and the public	HC 428 (HC 677)
Second Report	Pre-appointment hearing with the Government's preferred candidate for Chair of the Medical Research Council	HC 510–I
Second Special Report	Engineering in government: follow-up to the 2009 report on Engineering: turning ideas into reality: Government Response to the Committee's Fifteenth Report of Session 2010–12	HC 511
Third Report	The Census and social science	HC 322 (HC 1053)
Fourth Report	Building scientific capacity for development	HC 377 (HC 907)
Fifth Report	Regulation of medical implants in the EU and UK	HC 163 (Cm 8496)
Sixth Report	Proposed merger of British Antarctic Survey and National Oceanography Centre	HC 699 (HC 906)
Third Special Report	Devil's bargain? Energy risks and the public: Government Response to the Committee's First Report of Session 2012–13	HC 677
Fourth Special Report	Building scientific capacity for development: Government and UK Collaborative on Development Sciences Response to the Committee's Fourth Report of Session 2012–13	HC 907
Fifth Special Report	Proposed merger of British Antarctic Survey and National Oceanography Centre: Natural Environment Research Council Response to the Committee's Sixth Report of Session 2012–13	HC 906
Seventh Report	Educating tomorrow's engineers: the impact of Government reforms on 14–19 education	HC 665 (HC 102, Session 2013–14)
Eighth Report	Bridging the valley of death: improving the commercialisation of research	HC 348 (HC 559, Session 2013–14)
Sixth Special Report	The Census and social science: Government and Economic and Social Research Council (ESRC) Responses to the Committee's Third Report of Session 2012–13	HC 1053
Session 2010–12		
First Special Report	The Legacy Report: Government Response to the Committee's Ninth Report of Session 2009–10	HC 370
First Report	The Reviews into the University of East Anglia's Climatic Research Unit's E-mails	HC 444 (HC 496)
Second Report	Technology and Innovation Centres	HC 618 (HC 1041)
Third Report	Scientific advice and evidence in emergencies	HC 498 (HC 1042 and HC 1139)
Second Special Report	The Reviews into the University of East Anglia's Climatic Research Unit's E-mails: Government Response to the Committee's First Report of Session 2010–12	HC 496
Fourth Report	Astronomy and Particle Physics	HC 806 (HC 1425)
Fifth Report	Strategically important metals	HC 726 (HC 1479)
Third Special Report	Technology and Innovation Centres: Government	HC 1041

	Response to the Committee's Second Report of Session 2010–12	
Fourth Special Report	Scientific advice and evidence in emergencies: Government Response to the Committee's Third Report of Session 2010–12	HC 1042
Sixth Report	UK Centre for Medical Research and Innovation (UKCMRI)	HC 727 (HC 1475)
Fifth Special Report	Bioengineering: Government Response to the Committee's Seventh Report of 2009–10	HC 1138
Sixth Special Report	Scientific advice and evidence in emergencies: Supplementary Government Response to the Committee's Third Report of Session 2010–12	HC 1139
Seventh Report	The Forensic Science Service	HC 855 (Cm 8215)
Seventh Special Report	Astronomy and Particle Physics: Government and Science and Technology Facilities Council Response to the Committee's Fourth Report of Session 2010–12	HC 1425
Eighth Report	Peer review in scientific publications	HC 856 (HC 1535)
Eighth Special Report	UK Centre for Medical Research and Innovation (UKCMRI): Government Response to the Committee's Sixth Report of session 2010–12	HC 1475
Ninth Report	Practical experiments in school science lessons and science field trips	HC 1060–I (HC 1655)
Ninth Special Report	Strategically important metals: Government Response to the Committee's Fifth Report of Session 2010–12	HC 1479
Tenth Special Report	Peer review in scientific publications: Government and Research Councils UK Responses to the Committee's Eighth Report of Session 2010–12	HC 1535
Tenth Report	Pre-appointment hearing with the Government's preferred candidate for Chair of the Technology Strategy Board	HC 1539–I
Eleventh Special Report	Practical experiments in school science lessons and science field trips: Government and Ofqual Responses to the Committee's Ninth Report of Session 2010–12	HC 1655
Eleventh Report	Alcohol guidelines	HC 1536 (Cm 8329)
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