



Government Response to the House of Commons Business, Innovation and Skills Committee Report on Business-University Collaboration

Presented to Parliament by the Secretary of State for Business,
Innovation and Skills by Command of Her Majesty

March 2015



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INTRODUCTION

1. Our vision is for the UK to be the best place in the world for science and business. Our ability to develop and commercialise new ideas, products and services is critical to our economic future and to providing jobs.
2. The Government warmly welcomes the committee's report and, as foreshadowed in the Minister's evidence to the committee, we are responding positively to its recommendations. The Government has made support to business-university collaboration a priority, reflecting its vital role in underpinning the Government's long-term economic plan. The body of evidence presented to this committee indicates that many of the Government's initiatives are working well, but we recognise that this is a highly competitive global environment and we must constantly pursue improvements and new ways of working.
3. Whilst this response covers the committee's specific recommendations, it should be read in conjunction with "*Our plan for growth: science and innovation*", the Government's Science and Innovation Strategy (www.gov.uk/government/publications/our-plan-for-growth-science-and-innovation). Published in December 2014, the strategy sets out the Government's intent for the UK to remain a global leader in science and innovation and defines the scale and scope of the UK science and innovation system out to 2020 and beyond. The strategy is built on the five core principles of Excellence, Agility, Collaboration, Place and Openness and is underpinned by a robust case for the role of science and innovation in delivering sustainable growth. It shows how we can create long term certainty for researchers and businesses so that they can plan investments in confidence while balancing an ability to react to a changing world.

CATAPULTS

The Catapult network has made a promising start, with Catapults undertaking a range of activities in a range of fields. To capitalise on this, it is important that best practice is shared across the Catapult community so that existing work can be embedded more consistently across the network, as recommended by the Hauser review. (Paragraph 11)

4. The Government agrees that it is important that the Catapults and their collaborators use a range of methods to share best practice. The Hauser Review emphasised the importance of collaboration and communication across the network and with outside partners, and recommended that SME engagement strategies and a more coherent model for engaging with universities should be developed. The Government welcomed those recommendations in the Science and Innovation Strategy in December 2014 and committed to continue to

invest in the current Catapult network and to expand the network gradually as the fiscal situation allows.

5. Innovate UK are ensuring the Catapults work together. They hold a series of regular cross catapult forums to share best practice and look for common opportunities. The topics covered include: Research Base interaction (also includes all seven Research Councils and HEFCE); Technical liaison and European programmes; as well as more operational aspects such as communications and finance. There are also excellent bi-lateral projects between centres - for example the Cell Therapy Catapult is working with the Transport Systems Catapult on efficient transport logistics. As the centres mature, more combined projects and programmes will come about, potentially in areas such Big Data & Modelling and the Internet of Things.

We recommend that the Government commit to acting on the recommendations of the Hauser review, and to securing cross-party agreement for this action. As part of that commitment, we recommend that the Government conduct a light touch review that identifies effective examples of collaboration between universities and industry throughout the Catapult network, and ensures that this information is shared amongst interested parties to encourage and support further interaction. This review should be driven by the National Centre for Universities and Business and Innovate UK, building on the work of the Hauser Review. (Paragraph 12)

6. The Government has welcomed Dr Hauser's recommendations, and they are further discussed in the Science and Innovation Strategy. Funding to maintain and expand the network will be considered as part of the next spending review.
7. There are already a large number of Catapult / industry / university interactions. The cross Catapult forum on Research Base liaison is examining best practice on interaction with Universities around:
 - a. Strategic Relationships
 - b. Joint programmes and projects
 - c. Developing People and skills
 - d. Access to capability
 - e. Informing policy and future research agendas
8. In line with the Catapult model, one of the near term objectives of the Catapult programme and the Research Councils will be to increase the level of people-exchange between academia and the Catapults. The vast majority of such placements will be working directly with industry projects.
9. We do not envisage commissioning a further review at this stage as it would be unlikely to add value to the work already undertaken by Dr Hauser and could slow the work to implement his recommendations. However, Innovate UK and National Centre for Universities and

Business will continue to work together and have recently met to discuss how to help increase levels of interaction and to better showcase collaboration between universities and industry throughout the catapult network.

PUBLIC SECTOR PROCUREMENT AND THE SBRI

In its evaluation of the Small Business Research Initiative, the Government should explain why it failed to meet the £100 million target for contracts awarded through the scheme in 2013–14. It should also use this review to assess the assumptions made in setting targets for the scheme, in order to confirm that there is reasonable basis for believing the £200 million target for 2014–15 can be met. If the evaluation demonstrates that the Small Business Research Initiative is not on track to meet its £200 million target, the Government should make clear the corrective steps it will take to address the underperformance. The Government should report back to us with the outcome of this review by the end of January. (Paragraph 16)

10. The government's evaluation of the Small Business Research Initiative announced at Budget 2013 is currently underway and the outcomes will not be available until it is concluded, when we would be happy to discuss them with the committee or its successor. The evaluation comprises of three different strands; a process evaluation to assess the effectiveness of the processes set up to deliver SBRI; a retrospective impact evaluation looking at past SBRI competitions to assess the impact they had on the businesses involved, and; a baseline survey covering the latest full year of SBRI, to enable future assessment of impact.
11. The Small Business Research Initiative is providing more opportunities for small companies to bring their innovative ideas to public services and we are seeing good examples of new products and solutions developed for departments. We set ambitious targets to achieve the greatest possible outcome and last year (2013/14) £78.5m worth of contracts were awarded as a result of the scheme, a 75 per cent increase on 2012/13. Whilst this did not meet the target of £100m, we have seen good progress by individual departments. We are also considering further steps to embed the Small Business Research Initiative more firmly in government.
12. As set out in the Science and Innovation Strategy, the Government has committed to expanding the Small Business Research Initiative further. During 2015, we will improve awareness and understanding of the Small Business Research Initiative, communication of successful outcomes, tracking of Small Business Research Initiative projects, sharing of best practice and networking between departments. Actions include:

- a. A competition for departments across Whitehall to identify their two biggest challenges for the future that can be met through the Small Business Research Initiative.
- b. We have strengthened the governance and management with a new Small Business Research Initiative Board led by HMT that will review plans and hold departments to account.
- c. We are strengthening the central coordination of the Small Business Research Initiative with a central team led by BIS which will support departments in their use of the Small Business Research Initiative, track progress, raise awareness and promote networking.

INNOVATE UK'S FUNDING

We recommend that Innovate UK routinely publish the total number of applications, proportion of applications that merit funding, and proportion of Business-University Collaboration applications that receive funding as part of its annual report. We further recommend that Research Councils UK publish comparable data on applications for, and successful securing of funding for, their initiatives that are designed to support and promote business-university collaboration. (Paragraph 21)

13. The Government agrees with the recommendation. The Government is committed to transparency and accountability in public expenditure and has taken many actions to increase the availability of information. Not only does this let people hold government to account, but it can also help to improve efficiency, give people choice in using public services and contribute to economic growth.
14. Innovate UK will publish data referring to the total number of applications it receives, the amount of applications that merit funding and the proportion of those who are offered funding at the end of each financial year. Information will also show the percentage of Innovate UK funding which involves business-university collaboration. This data will be available on Innovate UK's website.
15. The Research Councils UK (RCUK) approach to transparency is set out on its website (www.rcuk.ac.uk/transparency/) and each Research Council already publishes grant application outcomes and success rates; this data includes those grants that support for business-university collaboration. Many other research grants also contain elements to support collaboration but it is not practical to break them out as separate items.

The Secretary of State has set out the case for doubling Innovate UK's budget. The Autumn Statement and planned Science and Innovation Strategy are opportunities for the Government to give a statement of intent about increasing funding for Innovate UK over the course of the next Spending Review. Investing in innovation

brings about demonstrable economic returns. We therefore expect the Minister to be arguing strongly for increasing Innovate UK's funding, in addition to protecting the financial support for science and innovation more broadly, in forthcoming Spending Review negotiations. Any increase in funding for Innovate UK should not be secured by diverting funding away from, or diminishing the remainder of, the science budget. (Paragraph 22)

16. We note and welcome the Committee's support for increasing funding for innovation. The Government has substantially increased Innovate UK's budget, it will reach over £500 million in 2015-16. The recently published Science and Innovation Strategy set out the actions taken by the Government to catalyse innovation during this Parliament. It also set out further actions planned, which included further support for the Catapult network, including its expansion.
17. Decisions on the future levels of investment to Innovate UK and other innovation instruments will be taken as part of the next Spending Review.

GATEWAY TO RESEARCH

The Gateway to Research was intended to help SMEs access information about the research base. We are aware that this portal is still being developed. However, we are concerned about the lack of a capability to monitor who is using the Gateway, and therefore whether it is reaching its desired audience. This capability should be developed as a matter of priority, with the resulting data being used to inform the Gateway's future development. (Paragraph 27)

We recommend that, in its response to this report, RCUK provides details of the monitoring and evaluation of Gateway to Research users that will be undertaken, a timetable for data collection and an explanation as to how this data will inform future iterations of the Gateway. (Paragraph 27)

18. The Government welcomes RCUK Gateway to Research as a useful tool in helping connect business to publicly funded research and innovation projects. Key to the success of the tool is that it is easy and low overhead to use. RCUK acknowledge that a registration based process would provide useful information on users and their use of the tool, but strongly feel that this would present a barrier and deter users. Nonetheless, RCUK fully accepts and recognises the committee's point that information about users is greatly beneficial for the monitoring of performance and continual improvement of the service. Google Analytics is already being employed to gain high-level-use statistics, and in summer 2015, allowing sufficient time to pass for users to access new data from spring 2015, RCUK is planning to engage users to determine the potential of a basic, repeat-user registration system.

COLLABORATIVE ONLINE PLATFORM

It is of paramount importance that research capability and funding opportunities to support collaboration are easily accessible, clear and navigable through a single interface. The new NCUB online platform should be developed to complement, rather than complicate, the existing information systems. However, it is unclear what processes or structures, if any, are in place to build on the capability of the Gateway to Research as part of this new platform. (Paragraph 31)

As much of this work is being conducted by the National Centre for Universities and Business (NCUB), we recommend that the NCUB set out its plans for the development of the online collaborative platform. This should include an assessment of existing platforms and their respective capabilities, so that NCUB can demonstrate it is building on, rather than duplicating or complicating, existing capabilities. We also recommend that the NCUB includes in these plans a clear statement of objectives, planned functions and information on how it will engage with interested parties in the platform's development, alongside an estimated timetable for launch. The ability to monitor or classify users by type should be built into the platform's capability from an early stage. (Paragraph 32)

19. The Government strongly welcomes of the development on this online brokerage platform by the National Centre for Universities and Business working with Research Councils, HEFCE and Innovate UK. As the committee recognises, the UK has great breadth and depth in the UK Research Base but this can make it challenging for businesses of all sizes to understand where capabilities that would be of use to them may be.
20. The National Centre for Universities and Business plans a UK-wide Intelligent Brokerage Tool that will provide a step change in the ease with which business-university connections can be made; its objectives are to:
 - a. Enable business to identify potential opportunities for collaboration (research outputs, research experts, consultancy opportunities, facilities/equipment, and funding opportunities);
 - b. Provide a tool where issues and challenges for industry can be addressed through smart searching and automated brokering.
21. For this platform, Gateway to Research will be one of the major sources of data alongside Innovate UK's ' _Connect' and other sources such as the Research Excellence Framework impact Case Studies and information from university websites will also be used.

22. The project to develop the online Intelligent Brokerage Tool is already underway and is due to deliver a working prototype for user testing in April 2015. Once the benefits have been demonstrated, this will be scaled and extended through the latter part of 2015. The project team is working in consultation with representatives from UK universities, SMEs and larger businesses across a number of sectors during the development phase. More details about the planned development and engagement strategy will be communicated through the National Centre for Universities and Business website (www.ncub.co.uk).

SINGLE POINT OF CONTACT

The single point of contact can be a useful point at which universities can gauge demand from industry for interaction and capacity to meet that demand. This single point of entry should be designed to enhance the other ways in which universities are encouraging interaction with industry. (Paragraph 35)

Every university should have a single point of contact for businesses that are seeking to collaborate. The forthcoming NCUB online portal should clearly signpost contact information for each university, so that businesses looking to collaborate can easily find someone to talk to as a first point of call. (Paragraph 36)

23. The Government agrees with these recommendations, and in line with our on-going implementation of the Witty review, we continue to encourage Universities to ensure a single point of entry for SMEs and for Business Schools to be involved in this single contact point. We will monitor progress through the annual HE-BCI survey and the annual stakeholder meeting. The presence of an enquiry point for SMEs is measured by the HE-BCI survey and the latest figures (for 2012-13) show that 89% of institutions do have this mechanism, and UK university collaboration with external partners including business has risen 45% in real terms since 2003-4 and continues to grow, reaching £3.6 billion in 2012-13.
24. Nonetheless, given the complexity and size of the potential market for business-university collaboration, the Government agrees that more can be done to make opportunities more visible and easier to engage. Current developments include the Research Councils' Gateway to Research and the National Centre for Universities and Business brokerage platform (which will include contact details for relevant contact points within universities), which have been discussed further elsewhere and will be welcome routes to connecting interested parties.

HIGHER EDUCATION INNOVATION FUNDING

There is widespread support for increasing HEIF to £250 million per annum. HEFCE is currently assessing the evidence base for increasing HEIF. (Paragraph 40)

If the evidence base presented as a result of HEFCE's review of HEIF funding is strong, the Government should prioritise additional funds for HEIF in the next Spending Review. (Paragraph 41)

25. The Government is pleased that the success of HEFCE's Higher Education Innovation Funding (HEIF) has been recognised. Higher Education Innovation Funding ensures that universities have the capability to engage effectively with a wide range of partner organisations and businesses. It has been successful in delivering a return on the public investment in knowledge exchange of £6.30 gross additional income generated for universities from every £1 invested over the period 2003-2012.
26. In recognition of the important role of Knowledge Exchange, the Government reiterated in the Science and Innovation Strategy its long-term commitment, set out in its response to the Witty Review, to supporting universities in knowledge exchange, which will help deliver economic growth, and is committed to supporting a fully rounded approach to funding all forms of knowledge exchange, with all forms of partner, including recurrent funding for knowledge exchange through Higher Education Innovation Funding. The level and form of knowledge exchange funding will be considered as part of the next Spending Review

MEASURING 'IMPACT' OF ACADEMIC RESEARCH

Done properly, assessing impact as part of the Research Excellence Framework should help the higher education community to better communicate the purpose and quality of its work. Impact criteria should therefore enhance research quality assessments, not detract or distract from basic research, which may not have an immediately obvious commercial application. Our understanding of "impact" therefore needs to include social, economic and cultural factors, as well as how research can transform thinking within a field. Achieving this understanding will require sophisticated metrics, as well as an assessment mechanism designed to avoid the submission of stock answers as evidence to the review. (Paragraph 43)

Care will be required when considering how much weight is assigned to impact within the overall assessment programme. The ability to produce high quality fundamental research is a strength of the UK's innovation ecosystem. This should not be taken for

granted. There is a risk that increasing the weighting assigned to impact within the Research Excellence Framework beyond 20 per cent could distort funding away from this type of work, to the detriment of the overall system. (Paragraph 44)

HEFCE should proceed with caution, and appropriate consultation, in its evaluation of impact criteria, taking into account concerns about both criteria design and weighting. Such consultation should include the full range of academic disciplines expected to engage with the REF, in addition to other interested parties. HEFCE should set out plans for such a consultation. (Paragraph 45)

27. The Government agrees with the general tone of the committee's thoughts on impact and would note that the inclusion of impact within the Research Excellence Framework is only one aspect of a wide range of efforts to improve the impact of research. Working with the Research Councils, Funding Councils and Innovate UK, a range of measures and actions have improved impact from research for the economy and wider society: (i) delivering highly skilled people, (ii) improving performance of business, (iii) creating new businesses, (iv) improving public policy and services, and (v) attracting foreign direct investment in R&D from global businesses.
28. As announced in the Science and Innovation Strategy the Government is seeking to further enhance the effectiveness of our research and innovation system by developing an improved impact policy framework, recognising the importance of the pursuit of fundamental research which underpins the great advances in our understanding. Research Councils, Innovate UK and Higher Education Funding Bodies will build on the evidence collected from their activities, case studies from the Research Excellence Framework and similar exercises to make a proposal by summer 2015 on the development of a whole system approach to research impact. It will further our understanding of the impact relationships between research outputs and economic and societal outcomes, greater effectiveness and agility, and better awareness of systemic risks and opportunities.
29. The Research Excellence Framework is a joint endeavour by the funding councils and equivalents from the UK's devolved authorities and the future of the Research Excellence Framework will be decided jointly by them following evaluation of the just completed 2014 Research Excellence Framework. Plans for the next Research Excellence Framework will be developed during 2015, and, as with previous exercises, consultation with stakeholders will be a major and extensive feature.
30. The results of the 2014 Research Excellence Framework were published in December 2014, after the committee had published its report. The Research Excellence Framework results showed that the quality of research from UK universities has improved significantly since the last

exercise in 2008. The overall quality research of 52,061 academic staff from 154 UK universities was peer-reviewed, with 30% of the submitted work judged to be 'world-leading' (4*) and a further 46% to be 'internationally excellent' (3*). For the first time in 2014, assessment of impact was included in order to encourage and reward engagement with a broad range of users of research; impact accounted for 20% of the Research Excellence Framework 2014. 44% of submitted impacts were judged outstanding (4*) by over 250 external users of research, working jointly with the academic panel members; a further 40% were judged very considerable (3*).

31. HEFCE has commissioned Professor James Wilsdon to lead an independent review looking at the role of metrics broadly in research assessment and considering how well metrics can be used across different academic disciplines to assess the excellence of research undertaken in the higher education sector. The review will report later in 2015.

UNIVERSITY ENTERPRISE ZONES (UEZs)

Universities are in a strong position to be able to drive growth across the country. Many have been active in local growth initiatives for some time, for example by engaging with LEPs. (Paragraph 48)

UEZs need to fit within this existing local ecosystem for innovation. How this is achieved should be built into the evaluation of the UEZ pilot scheme, using the examples of effective collaboration already highlighted by previous reviews. (Paragraph 48)

32. In response to Sir Andrew Witty's Review of Universities and Growth, Universities are taking an increasing role in shaping Local Enterprise Partnership strategies and activities. They are helping the Local Enterprise Partnerships understand their locality's comparative economic advantages, and how to capitalise on them to drive growth. We are supporting this by developing, with the National Centre for Universities and Business as the lead, a Smart Specialisation Advisory Hub to share best practice, improve alignment between partners and support Local Enterprise Partnerships to deliver stronger collaborative propositions through an understanding of comparative advantage.
33. The interests of Higher Education Institutions are represented on all 39 Local Enterprise Partnership boards, and the majority of representatives are at Vice-Chancellor/pro Vice Chancellor level. The thinking and the capabilities of the universities is increasingly at the heart of local growth strategies. A small, but significant, number of University led projects have been funded via Local Enterprise Partnership Growth Deal Round 1, and more were funded through Growth Deals Round 2 (announced Jan 2015).

34. The four University Enterprise Zone pilots have focused their activities on strengths of the Universities and, through their partnership arrangements, are embedding in the wider innovation and economic context:
- a. University of Bradford (Leeds City Region) – Digital Health Zone will innovate and grow businesses in communications-enabled healthcare.
 - b. University of the West of England, Bristol – Robotics and Autonomous Systems, Bio-Health Sciences.
 - c. Universities of Liverpool and Liverpool John Moores in partnership as ‘Sensor City Liverpool’ – sensor systems and measurements.
 - d. University of Nottingham’s Technology Entrepreneurship Centre specialising in big data, digital and satellite applications, advanced manufacturing, aerospace and energy.
35. We note and agree the importance of positioning of University Enterprise Zones to fit within the existing local innovation ecosystem. Embedding the University Enterprise Zone activity within the local economic context, and having the endorsement of the Local Enterprise Partnership, was a key criterion upon which bids were assessed. A University Enterprise Zone Outline Evaluation Plan and Baseline document has been produced for BIS by SQW and Cambridge Econometrics, and mechanisms and principles are now being developed and rolled out to the Delivery Bodies. The relationship to the wider innovation ecosystem and Local Enterprise Partnership strategy is part of the evaluation. The Evaluation Plan and Baseline document will be published in spring 2015.

LEPs must have the freedom to work collaboratively to develop innovative bids for future UEZs that maximise benefits from the low levels of available funding. (Paragraph 49)

The Government should confirm that future rounds of applications to the UEZ programme will be less restrictive in terms of who can apply to set up a UEZ, for example cross-LEP bids. (Paragraph 49)

36. Should the pilot University Enterprise Zone scheme be expanded, then the future shape of the programme and the scope of eligible bids will consider these recommendations as well as other outcomes from the evaluation process of the University Enterprise Zone pilot programme.

THE PROPOSED NATIONAL CENTRE FOR UNIVERSITIES AND BUSINESS ADVISORY HUB

If the UK is to have a coherent innovation strategy, it is vital that there is a UK wide picture of the capacity, capability and coherence of local innovation ecosystems, and how these contribute to UK wide growth goals. Smart specialisation should be the means by which we understand the relative strengths and weaknesses of

local, devolved and national innovation landscapes and strategies. Businesses operate across these borders and therefore government at all levels must provide a coherent package of innovation support. (Paragraph 54)

37. The Government agrees that Smart Specialisation is an effective approach to ensuring effective use of our resources to support innovation. By using it to build an evidence-based understanding of the strengths of an area the risks of duplication and dissipation of resources are reduced, investments are more likely to be integrated in the local economy and it helps to build links with similar activities elsewhere.
38. The guidance given to Local Enterprise Partnerships on developing their plans for European Structural and Investment Funds encouraged them to follow a Smart Specialisation approach when determining their priorities and this approach was further embedded within the Local Enterprise Partnerships Strategic Economic Plans.
39. In responding to Sir Andrew Witty's Review of Universities and Growth Government recognised that there was a need for Local Enterprise Partnerships to have a source of expert impartial advice when determining future investment priorities. BIS therefore commissioned the National Centre for Universities and Business to develop a proposal for an Advisory Hub on Smart Specialisation which will help Local Enterprise Partnerships to have a clearer understanding of where their relative strengths are when compared to their peers.

LEPs should be fully consulted as a key stakeholder in developing the NCUB Advisory Hub. This would allow sharing of best practice and advice on implementing strategic plans for European Structural and Investment Fund allocations. These attributes should be built into the NCUB's recommendations to Government on the way forward for the Advisory Hub. The proposed Advisory Hub should complement and link with the planned NCUB online platform. In addition, the Hub should link with existing relevant work, such as best practice guidance and other sources of Government support for business. (Paragraph 55)

40. The envisaged role of the Smart Specialisation Advisory Hub is to support Local Enterprise Partnerships and other local partners in understanding how their particular strengths match up to those of other areas – giving a clearer picture of their comparative advantages. This will support better local research and innovation-led growth interventions and strengthen business, university, catapult and other partner engagement. It will also help ensure that the projects supported are of the highest quality and highlight opportunities to successfully collaborate with appropriate partners. The Hub will therefore provide assurance to funders, in particular the Managing Authorities for the European Structural and Investment Funds, that their funding is being used effectively and appropriately.

41. The National Centre for Universities and Business is keen to support the Government in realising the ambitions of a Smart Specialisation Advisory Hub and when developing their proposal to Government, it has put considerable effort into engaging individual Local Enterprise Partnerships, the Local Enterprise Partnership network and other innovation partners across the country. Consultation and engagement with national and local partners especially with the Local Enterprise Partnerships has been encouraging and there is appetite for the services envisioned. The National Centre for Universities and Business has submitted their proposal to BIS and it is currently under consideration.

A STRATEGIC APPROACH TO BUSINESS-UNIVERSITY COLLABORATION

We recommend that the forthcoming Science and Innovation Strategy address each key relative weakness of the UK's innovation system, as outlined in the BIS Benchmarking Analysis. The Strategy should identify and explain which Government policies, programmes and incentives are designed to tackle those weaknesses, and explain how the effectiveness of those interventions will be measured, monitored and evaluated. (Paragraph 57)

As the Government prepares its Science and Innovation Strategy, there is a need for clarity on how its policies will utilise the strengths of universities across Scotland, Northern Ireland, Wales and England within a UK-wide strategy. Businesses operate across the UK, so coordination with devolved administrations is required to ensure coherence in the innovation support system. (Paragraph 58)

42. The Government's Science and Innovation Strategy sets out our aim for the UK to be the best place in the world for science and business. The plan to achieve this has 6 elements:
- a. Deciding priorities
 - b. Nurturing scientific talent
 - c. Investing in our scientific infrastructure
 - d. Supporting research
 - e. Catalysing innovation
 - f. Participating in global science and innovation
43. Each element has a chapter of the strategy devoted to it which examines the UK's current position, actions taken by the Government and the next steps consisting of a mixture of high level direction, new investments and announcements on policies and programmes.
44. Science and innovation is increasingly an open enterprise that requires collaboration across departments, sectors and nations. We recognise

and fully agree with the committee that to achieve our aims for the UK requires all the elements of the UK science and innovation system to work effectively together. That is why we have made collaboration one of the core principles of the strategy as we must ensure that our policy and institutional arrangements advance, and do not constrain, opportunities for cooperation. We have and will continue to work closely with the devolved authorities across the full range of science and innovation topics.

45. The Devolved Administrations were represented on the Strategy's Ministerial Advisory Group through their respective higher education funding authorities (SFC, HEFCW and DELNI) and were invited to stakeholder engagement events; as part of the Capital Roadmap Consultation engagement events were held in Belfast, Cardiff and Edinburgh.

MEASURING SUCCESS: THE R&D SCORECARD

Many of the Government's major initiatives are aimed at increasing R&D activity in the UK and encouraging investment in a wide portfolio of sectors and technologies. It is important that the Government has a respected and impartial way to evaluate the success of such initiatives. This is particularly significant at a time of constrained public spending. (Paragraph 61)

46. Both the UK government and its partner organisations such as Innovate UK and the National Physical Laboratory remain strongly committed to on-going evaluation of their activities. The recent publication of BIS Analysis paper 4 "Innovation: Estimating the effect of UK direct public support"¹, which found substantial impacts of UK innovation policy through robust evaluation techniques, provides a good example of this commitment.

We recommend that the Government reintroduce a means of monitoring R&D activity, a function previously fulfilled by the R&D scoreboard, in order to measure progress in its R&D initiatives. Use of the scoreboard, or similar indicators, should be built into mechanisms for measuring progress in implementing the forthcoming Science and Innovation Strategy. (Paragraph 62)

47. The UK government appreciates the value of regular monitoring of a range of innovation indicators, recently summarised in Innovation Report 2014². In addition to a substantial amount of national statistics produced on R&D the UK is a participant in a range of regular international innovation comparisons, including the EU innovation index³, the World

¹ www.gov.uk/government/publications/innovation-effect-of-public-support

² www.gov.uk/government/publications/innovation-report-2014-innovation-research-and-growth

³ http://ec.europa.eu/enterprise/policies/innovation/policy/innovation-scoreboard/index_en.htm

Economic Forum Global Competitive Index⁴ and the INSEAD/WIPO Global Innovation Index⁵. In addition, BIS has published a comprehensive innovation benchmarking review “Insights from international benchmarking of the UK science and innovation system”⁶ in 2014.

THE STRUCTURAL GAP IN R&D SPEND

We recommend that the Government aims for 3 per cent of GDP to be spent on R&D by 2020. This aim should be built into the Science and Innovation Strategy as a long-term objective and as an indication of the UK’s commitment to building capability in this area. (Paragraph 68)

48. Our ability to develop and commercialise new ideas, products and services is critical to our economic future and to providing jobs. Investment in our knowledge base is a crucial challenge for both government and business. This government is committed to delivering a sustained and balanced level of investment, having regard to the fiscal challenge.
49. The Science and Innovation Strategy recognises that the investment required to keep us at the forefront globally must be a Government priority and we have announced £5.9 billion of capital investment in science and innovation from 2016-2021.
50. Further decisions on public investment in science and innovation will be made after the General Election and resource funding for science and innovation beyond 2015-16 will be determined in a spending review after the election. The strategy, and the evidence compiled in producing it, will be essential in building and supporting a strong case for investment in science and innovation.

⁴ www.weforum.org/reports/global-competitiveness-report-2014-2015

⁵ www.globalinnovationindex.org/content.aspx?page=gii-full-report-2014

⁶ www.gov.uk/government/publications/performance-of-the-uk-research-base-international-comparison-2013

STABILITY IN THE INNOVATION ECOSYSTEM

We agree with the Minister that greater stability in the innovation support system is required. We expect the forthcoming Innovation Strategy to deliver on the desire from businesses and universities for a long-term commitment to, and increasing stability of, mechanisms to support innovation and business-university collaboration. (Paragraph 71)

51. As the committee highlights, stability is an important component in the ecosystem as it allows organisations to plan with confidence. This commitment to science and innovation has been strategic and long-term.
 - a. the Industrial Strategy has set a whole of government approach in partnership with business and the voluntary sector.
 - b. the budget of Innovate UK (formerly the Technology Strategy Board) has been increased to more than £500 million for 2015-16.
 - c. we have established a network of seven Catapult Centres and the Catapult network will expand with two more Catapults for Energy Systems and Precision Medicine.
 - d. the long-term capital budget for science has been committed into the next Parliament, which will grow in line with inflation to 2020-21, an investment totalling £5.9 billion from 2015-16 to 2020-21 in vital scientific infrastructure necessary for universities and business.
 - e. the ring-fenced £4.6 billion per annum funding for science and research programmes has been protected in cash terms from 2011-2016 and we have reiterated a long-term commitment to supporting universities in knowledge exchange.

CONCLUSION

We urge the Government to use the Science and Innovation Strategy as an opportunity to set out its plans to build capacity in the innovation system and to articulate an ambitious vision for this sector. (Paragraph 72)

52. This government and its predecessors have done much in recognition of the crucial role that science and innovation play in our economic prospects and well-being. The UK's research base and business environment, with its open, competitive market and trusted institutions, supports the growth of all businesses, especially those that innovate. The science and innovation strategy will build on this strength by reinforcing each element of the innovation ecosystem.
53. In our new strategy, we have made clear the priorities for the UK to help meet the challenges ahead:
 - a. the importance of achieving excellence
 - b. the imperative to operate at a quickening pace and show agility to seize new opportunities
 - c. the need to accommodate and foster higher levels of collaboration between disciplines, sectors, institutions, people and countries
 - d. the need to recognise the importance of place, where people and organisations benefit from mutual proximity
 - e. the modern demand for openness and engagement with the world
54. We have prioritised science and innovation spending in difficult times: ring fencing science and research spend, increasing Innovate UK's budget and announcing a long term capital investment programme. We are strengthening our partnerships between the public and private sector, epitomised by the Industrial Strategy and the 8 Great Technologies.
55. The existing seven Catapults are widely supported by the business community and we will continue to expand gradually as the fiscal position improves.
 - a. Two more Catapults for Energy Systems and Precision Medicine.
 - b. £61 million funding to the High Value Manufacturing Catapult to meet increasing demand and provide outreach and technical support to SMEs.
 - c. £28 million in a new National Formulation Centre as part of the High Value Manufacturing Catapult in Sedgefield.
56. Centred around the British Business Bank, we will continue to make finance markets work better for innovative smaller businesses.
 - a. the Venture Capital Catalyst Fund, which increases the availability of later stage venture capital, was extended by £100 million in 2014.
 - b. a new commitment of £400 million over three years to extend the Bank's flagship venture capital programme, Enterprise Capital

Funds, which will allow Funds to make larger investments of up to £5 million in innovative smaller businesses.

57. In the course of this government, the tax regime has been strengthened by increasing the competitiveness of our R&D tax credit schemes, expanding the tax-advantaged venture capital schemes, and introducing the Patent Box.
58. As part of our commitment to pursue improvement and new ways of working, we have asked Professor Dame Ann Dowling to make recommendations on how Government can help businesses and academia to better understand each other's needs, interests and constraints and to develop trusting relationships which will allow them to share long-term strategic plans. Her review will report to the new government after the election in May and her findings will be considered as part of the spending review.
59. The performance of universities' knowledge exchange can be further promoted through sharing of best practice and by assessment of performance. In the Science and Innovation Strategy, the Government has asked HEFCE to develop a robust, evidence based framework against a suite of key knowledge exchange activities to assess performance and identify examples of good practice.
60. Our vision is for the UK to be the best place in the world for science and business and the science and innovation strategy is about getting the best possible outcomes from science and innovation. The strategy sets out the Government's intent for the UK science and innovation system out to 2020 and beyond. Further decisions on public investment in science and innovation, building on those made by this government, will be made after the General Election. The actions are not for government alone, "*Our plan for growth: science and innovation*" is for government, for business, and the education system. It can only deliver if it is owned and supported by the science and innovation communities in academia and business, and by all those who work alongside them.

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