Executive Summary

The University of Oxford welcomes the Government’s initiative to develop an Industrial Strategy. In addition to this institutional response, we have also contributed to submissions from the Russell Group and the Oxfordshire Local Enterprise Partnership (OxLEP).

In his July 2015 ‘One Nation’ Budget speech the then Chancellor George Osborne stressed, ‘... we’ve got to secure the success of our university sector, which is one of the jewels in the crown of the British economy.’ The UK’s universities are well placed to support the Government in delivering an ambitious and successful industrial strategy, as major employers, workforce educators, commercialisers of research, exporters, local leaders and partners in their communities, and industry collaborators. As the Russell Group’s submission emphasises, the UK’s world-leading universities are able to draw on wide-ranging international links, expertise and knowledge to tackle key challenges and enhance the UK’s ability to innovate and succeed against global competition.

The report Engines of Growth indicated that Russell Group universities generate a return of £100 for every £1 of initial investment and showed how research drives our economy, changes our society, improves our health, enhances our culture and protects the environment.¹

Oxfordshire is home to some of the UK’s principal resources for high quality, knowledge-based, economic growth. The University of Oxford and the ‘big science facilities’ in Culham and Harwell are central not only to the Strategic Economic Plan for Oxfordshire 2016 but also are national assets delivering value throughout the UK and internationally. The University will increasingly act as a leadership/coordination hub for UK-wide research and knowledge exchange initiatives.

It is vital that a good portion of the government’s very welcome £4.7 billion additional R&D investment is allocated to excellence in ‘blue-skies’ research – as the engine room of new ideas, paradigm shifts, new technology platforms and new industries. And in line with the balanced funding principle, that there is an increase within the total envelope in Quality-Related Funding (QR).

We recommend also in our detailed response (below) a range of other measures. These include a boost to HEIF and minimum three year block allocations, reforming the tax environment for research and university-business collaboration, promoting STEM and foreign language learning from primary school onwards, and significant funding allocations for LEPs and local growth funds. And as the House of Commons Exiting the European Union Committee recently stressed² - the UK also needs the continued ability to welcome international skills and talent and an explicit commitment from government that it wishes to continue joint research with the EU27 on the basis of the Horizon 2020 framework, and its successor.

¹ http://russellgroup.ac.uk/policy/publications/engines-of-growth-the-impact-of-research-at-russell-group-universities/
² http://www.parliament.uk/business/committees/committees-a-z/commons-select/exiting-the-european-union-committee/publications/
2. Are the ten pillars suggested the right ones to tackle low productivity and unbalanced growth? If not, which areas are missing?

Broadly, we agree that the ten pillars are an appropriate framework to tackle low productivity and unbalanced growth. We particularly welcome the Paper’s acknowledgement that productivity growth comes, to a large degree, from innovation and that in the UK, university research plays a significant role in underpinning the national innovation ecosystem.

**Being able to compete on a global scale for the brightest and best talent must be at the heart of the UK’s Industrial Strategy.**

The **success of the Higher Education sector in the UK owes much to its ability to attract international skills and talent.** As the House of Commons Exiting the European Union Committee recently commented:

> The UK Government must design a future immigration system that does not make it difficult for such talent, both students and staff, to come to the UK. It must also send a strong and consistent message that the UK is a welcoming place for people to come and study. The Government should make clear that it wishes to continue to take part in the Erasmus+ student exchange programme.\(^3\)

The Committee also observed:

> The UK has benefitted from being part of Horizon 2020 ... The Government needs to make an explicit commitment that it wishes to continue joint research with the EU27 on the basis of the Horizon 2020 framework, and its successor.\(^3\) (Emphasis added)

3. Are the right central government and local institutions in place to deliver an effective industrial strategy? If not, how should they be reformed? Are the types of measures to strengthen local institutions set out here and below the right ones?

We welcome the government’s introduction of LEPs as a helpful partner supporting growth in the local economy. We also value the government’s support of local government reform, to improve mechanisms for support across the local economy. The University will continue to support improvements in governance in Oxfordshire through constant dialogue and through our Green Paper Programme.\(^4\)

Universities will continue to be key institutions in implementing the industrial strategy, both as sources of innovation and of higher level skills, but also as economic anchors that support growth in local areas as well as nationally. By way of example, preliminary data from BIGGAR indicate that in 2014/15 the University of Oxford contributed £5.8bn GVA and supported 50,600 jobs across the UK. Of these, £2.3bn GVA and 33,700 jobs were in Oxfordshire. This combination of national (and international) reach with a significant local economic effect illustrates the key role universities play both in local anchoring and in spreading the effect across the wider nation.

Universities’ public good missions put them in a unique place to contribute to their local economy and society – not just educating students and conducting research, but supporting cultural organisations, promoting entrepreneurship and volunteering, and improving healthcare, education and services through academic collaboration.

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\(^3\) [www.parliament.uk/business/committees/committees-a-z/commons-select/exiting-the-european-union-committee/publications/](http://www.parliament.uk/business/committees/committees-a-z/commons-select/exiting-the-european-union-committee/publications/)

4. Are there important lessons we can learn from the industrial policies of other countries which are not reflected in these ten pillars?

There are many lessons we can learn from other countries, and we should always seek to learn from good practice; however, we need to be mindful of the UK context, our own strengths and economic makeup, and recognise that not everything is directly transferable to the UK’s distinctive economic environment. In particular, UK Universities are recognised as being globally leading: practices applied in the UK should aim to draw on these strengths, and care should be taken not to weaken or undermine their success.  

**Pillar 1: Investing in science, research and innovation** – we must become a more innovative economy and do more to commercialise our world leading science base to drive growth across the UK.

5. What should be the priority areas for science, research and innovation investment?

Whilst we welcome the government’s desire to apply a strategic focus to those areas of the economy that offer greatest opportunity for the future, we would caution that this still requires a broad base of excellence in research across a wide range of disciplines. Predicting the utility of research outputs is fraught with difficulty. It is critical that the desire to be strategic in the way the UK invests public funding should not lead to selecting of areas of discovery research based on the mistaken assumption that government can reliably pick winners or see into the future.

The importance of long term, discovery research in seeding new innovations must not be forgotten. The recent prominence of Oxbotica, one of Oxford’s fastest growing spinouts is a very good case in point. Oxbotica just won the FT boldness in business small business awards and is one of the world’s leading autonomy companies. That success is based on two decades of academic work in image recognition, control systems and location determination among other areas of engineering. This work would not have happened without public funding for blue skies research, especially from the Research Councils, that came well before industrial interest and funding.

The UK must continue to invest in research and discovery which is game-changing; research which provides the basis for disruptive innovation as well as incremental improvement. To enable this, there needs to be long term, stable investment in the pipeline of ideas and people that will be needed to grow new and innovative ventures. This is a priority which the Research Councils and HEFCE do so much to support.

Research excellence can and does drive innovation in many sectors.

An analysis of the 6,670 non-redacted impact case studies submitted for REF 2014 showed the large number and wide range of beneficiaries and impacts, and that multiple fields of research lead to multiple types of impact.  

As the Consultation notes (p. 15), ‘innovation is not just about a few people in labs making breakthroughs’, but demands flexibility, creativity, effective communication and imagination; the aim should therefore not only be to increase the ‘number of PhDs in the STEM subjects’, but to

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5 As an example, commentators often call for UK universities to replicate Stanford’s approach to technology transfer, suggesting that this will then lead to similar success. Even other US universities generally don’t attempt this, because they know they don’t have the special environmental conditions (proximity to Silicon Valley, historic endowments) which cannot be replicated. Indeed, the Heads of Technology Transfer at both Stanford and MIT are on record as saying that their model would be inappropriate in the UK; http://blog.hefce.ac.uk/2016/05/12/the-special-relationship-and-university-technology-transfer/. All sorts of other appeals to replicate someone else’s system without adjusting to the UK environment (such as Fraunhofer Institutes in Germany or Entrepreneurship in Waterloo), both very successful in their local context) are likely to founder.

provide high quality research training across the sector, especially in relation to our global competitors (p. 26).

It is too easy for parts of government to undersell ‘non STEM.’ The Arts and Humanities are e.g. a dynamic and innovative field. Oxford University academics in the Humanities are working with a broad range of partners in the Business and Technology Sector on innovative new patents and design applications, with government and policy makers, and as a central strand of tourism, heritage and the creative industries. The impact and public engagement with research achieved by the Arts and Humanities are cutting edge, and central to any strategy that seeks to have a genuinely transformative effect upon the UK’s economic and cultural vitality.

There needs to be a strengthening of infrastructure and mechanisms that underpin knowledge exchange in all its forms, maximising the routes for University activity to make an impact on the economy and wider society. Government’s ongoing support for the Higher Education Innovation Fund (HEIF) in the Green Paper and the explicit, continued responsibility to support Knowledge Exchange in Universities that the Higher Education and Research Bill now gives UKRI are both very welcome.

Success in science and innovation as a collaborative endeavour between universities and businesses cannot be achieved by universities alone taking action. In our experience there is a lack of UK-based industry willing and able to in-license university technologies. 52% of our licences are signed to foreign firms. This is not for lack of trying within the UK. The proportion of licences granted overseas rises to 82% if we look at the relevant sub-set of this data for technology licences (not software) granted to non-SME businesses (which excludes our own spinouts, which are SMEs and naturally based mainly in the UK). So, it is not just about universities doing more to commercialise the world leading science base, what is also needed is both demand and absorptive capacity in UK PLC to make the most of these opportunities. As the Science and Technology Committee (Commons) recently observed, ‘compared to our OECD counterparts, the research intensity of UK business is low … [Government] should be leading the way by creating conditions that are conducive to businesses investing more in R&D. To date, however, the Government’s efforts to increase technology transfer have been disproportionately targeted at the university, rather than business, sector.’

6. Which challenge areas should the Industrial Challenge Strategy Fund focus on to drive maximum economic impact?

7. What else can the UK do to create an environment that supports the commercialisation of ideas?

The UK’s place in global innovation rankings is high and in many areas world-leading. Universities have made significant strides over the last decade in improving their ability to support knowledge exchange, including the formal commercialisation of ideas, and maximising the impact of their research outputs on the economy and society. The Higher Education Innovation Fund (and the way it has been implemented by HEFCE, retaining maximum flexibility for universities to respond to local need) has been possibly the most effective government intervention in incentivising English universities to develop and improve new ways of having an economic impact in the last two decades. HEFCE evaluation showed that in the largest research universities, including Oxford, HEIF generated a more than 20-fold economic return, and we would urge the government to continue to support and extend the HEIF mechanism within the new structure of UKRI. A larger fund and a minimum three-year indicative allocation to HEIs would greatly assist longer-term planning, the ability to recruit and retain skilled professional KE staff and help leverage other funds.

7 Source: HEB-CI survey
The R&D tax credit should be more straightforward. The R&D tax credit is a key incentive for companies, especially smaller, innovative companies, to invest in R&D. At present, companies that fund universities to conduct research on their behalf or to support their own development may be eligible for this credit, but the definitions are complex and the uncertainties of eligibility act as a deterrent for small companies. If all business-funded research was automatically eligible, it would be a significant incentive (and save smaller companies the costs of specialist accounting advice).

HMG should review VAT treatment rules to encourage industry to co-locate on university campuses. Current rules place unnecessary and complex-to-calculate restrictions on the amount of work which can be done collaboratively with industry in university buildings that are built VAT free for research. The “industry work” is not commercial in the traditional sense of using the work to generate income – it is still research. Collaborative research should be exempt.

The UK’s Patent Box regime has been welcomed by many companies to incentivise investment in IP and products based on IP. We would encourage the government to continue to support this as a way of increasing industry pull for innovation.

8. How can we best support the next generation of research leaders and entrepreneurs?

UKRI needs to continue to invest in the next generation of research leaders through adequate support at DPhil and postdoctoral levels.

University support for entrepreneurship development and training is being facilitated by HEIF and HEFCE funding for social enterprise.

Oxford University provides significant support for entrepreneurship including social entrepreneurship through many different channels. E.g. the Said Business School supports and coaches entrepreneurs, as does Oxford University Innovation (OUI), helping them build companies and source funding. Our entrepreneurship portal, Enterprising Oxford, provides learning resources for aspiring entrepreneurs (attracting a much wider audience: 36,000 users from 182 countries). The OUI Incubator, founded in 2011, has supported more than 50 ventures, which have gone on to raise over £40M from a range of private and public sources. The Careers Service Internship Programme and its Student Consultancy Programme are giving vital experience beyond academia to the entrepreneurs of the future. The University has joined with other partners to create the Oxfordshire Social Enterprise Partnership (OSEP) which has helped Oxfordshire become a beacon for social enterprise. Social enterprise and the social economy has been successful in engaging those parts of the community less likely to engage in traditional enterprise.

One extremely successful government initiative is the Graduate Entrepreneurship Visa Scheme, to allow entrepreneurial students from outside the EU to stay in the UK and found their own business after they graduate. Since 2011 Oxford University has received 143 applications, of which 84 have been endorsed – all of them after a personal interview and many of them after the provision of support to improve their business plan and test their commitment to opening a business in the UK. The gender balance has been almost 50:50, which is particularly encouraging. The applicants have come from 28 different countries and 58 different degree areas – and we have been pleased to retain their talents which would otherwise have been lost to the UK. We would urge the government to continue to support and extend this programme.

The UK should do more to make use of the language skills and cultural connections of its diverse populations. We need, as the Green Paper says, to be become “more outward-looking than ever before” (p. 5) and “a great, global trading nation” (p.79). A high proportion of children in UK schools speak a language other than English at home and in their communities. Currently these highly valuable language skills so valuable in trade and entrepreneurship are often not just neglected, but viewed as an educational handicap in many schools.
A lack of tangible investment even in the government initiatives designed to promote language learning has created a downward spiral in foreign languages provision and competence. As a result of dropping take-up in schools, some 50 universities have scrapped courses in Modern Languages since 2000 and others are under significant pressure as applications fall further.\(^8\) The Translation and Interpreting courses that are so vital to exporters and trade negotiators are similarly diminishing. Teacher training in MFL is shrinking despite incentives, and the critical shortage of language teachers will be exacerbated if the recruitment of EU nationals becomes more difficult post-Brexit. There is an urgent need to address this situation if young people are to be equipped with a skill that is essential for their participation in the global economy, and essential for ‘exporting Britain.’

9. **How can we best support research and innovation strengths in local areas?**

The University of Oxford has worked with other regional organisations — the LEP, local authorities, and entities based at Harwell and Culham – to develop a Green Paper outlining a blueprint for innovation led growth in the region.\(^9\) This has informed Oxfordshire’s Innovation Strategy and the LEP’s Strategic Economic plan. Funds from City Deal and Local Growth Fund awards have been specifically targeted to support new innovation centres, and initiatives to enhance local innovative businesses’ use of cutting edge research and facilities in the universities.

As discussed also in the OXLEP submission,

- To ensure that the UK as a whole benefits from investment in innovation hotspots such as Oxfordshire and Cambridge, there will need to be clear mechanisms for inter-LEP relationships to promote opportunities for growth and investment in other regions.
- The science and innovation audits should be used to identify gaps in provision or barriers to progress.
- The local innovation landscape will benefit from long term, stable investment and continued encouragement of collaboration between major anchor institutions and the LEP.
- **Flexible funding to local areas is required** so they can invest according to the needs of local conditions is very important.
- For LEPs, Funding streams such as Local Growth Fund for capital and regional growth deals are vital. However, they must as far as possible be framed so as to ensure that they underpin university business links and science and innovation priorities locally.

**Pillar 2: Developing skills** — we must help people and businesses to thrive by: ensuring everyone has the basic skills needed in a modern economy; building a new system of technical education to benefit the half of young people who do not go to university; boosting STEM (science, technology, engineering and maths) skills, digital skills and numeracy; and by raising skill levels in lagging areas.

10. **What more can we do to improve basic skills?** How can we make a success of the new transition year? Should we change the way that those resitting basic qualifications study, to focus more on basic skills excellence?

We welcome the importance accorded to high quality education for all students at all levels of education.

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\(^8\) See APPG on Modern Languages Manifesto, [https://www.britishcouncil.org/sites/default/files/manifesto_for_languages.pdf](https://www.britishcouncil.org/sites/default/files/manifesto_for_languages.pdf)

Without a focus on encouraging women to train in STEM and digital subjects and remain in scientific professions, the UK risks missing out half its talent. Oxford and other HEIs reach out to girls at secondary school to encourage them to study STEM subjects. However, work needs to start much earlier - in primary school - to sustain girls' enthusiasm for STEM and ensure that the culture of our education system (and that of parents) focusses strongly on developing girls into STEM subjects and careers. We would stress the particular importance of mathematics study.

11. Do you agree with the different elements of the vision for the new technical education system set out here? Are there further lessons from other countries' systems?

12. How can we make the application process for further education colleges and apprenticeships clearer and simpler, drawing lessons from the higher education sector?

13. What skills shortages do we have or expect to have, in particular sectors or local areas, and how can we link the skills needs of industry to skills provision by educational institutions in local areas?

14. How can we enable and encourage people to retrain and upskill throughout their working lives, particularly in places where industries are changing or declining? Are there particular sectors where this could be appropriate?

Pillar 3: Upgrading infrastructure – we must upgrade our standards of performance on digital, energy, transport, water and flood defence infrastructure, and better align central government infrastructure investment with local growth priorities.

15. Are there further actions we could take to support private investment in infrastructure?

The work of the National Infrastructure Commission (NIC) is leading to a much better understanding of infrastructure needs at a national and regional level.

The NIC could benefit from being placed on a statutory footing, including to help signal government ambitions for a long-term policy framework and action that will provide the UK with the infrastructure it needs.

The consideration by the NIC of the opportunity to establish a Cambridge to Oxford corridor is a positive step, and with appropriate planning will generate a significant economic uplift across the corridor. However, given the economic importance of the cities of Oxford and Cambridge, both in their own right and in seeding growth in their regions, significant investment into the "last mile" infrastructure in these cities is vital if we are to reap the economic rewards without overloading the already strained transport and housing in those cities.

16. How can local infrastructure needs be incorporated within national UK infrastructure policy most effectively?

We would encourage the government to continue to use the Local Growth Fund to target infrastructure improvements linked to innovation gains.

In Oxfordshire we have e.g. used this funding towards new innovation centres and infrastructure that will enable the development of innovation districts in Oxford North and Osney Mead. In addition, specific investments in university-based infrastructure to meet industry needs will enhance the role of universities such as Oxford in acting as anchor institutions for innovation-led economic growth.

We also welcome the investment of government in a new flood relief channel for Oxford. This will not only improve the residents' lives but also enable the development of Osney Mead Knowledge Quarter to enhance innovation and provide more space for business growth.

17. What further actions can we take to improve the performance of infrastructure towards international benchmarks? How can government work with industry to ensure we have the skills and supply chain needed to deliver strategic infrastructure in the UK?
Pillar 4: Supporting businesses to start and grow – we must ensure that businesses across the UK can access the finance and management skills they need to grow; and we must create the right conditions for companies to invest for the long term.

18. What are the most important causes of lower rates of fixed capital investment in the UK compared to other countries, and how can they be addressed?

UK banks are more focused on capital markets than corporate lending, especially to SMEs. There remain significant hurdles for banks to invest in growing companies – a recent report produced by Oxford and Cambridge with Barclays touches on this. The solutions for this are tricky, and may require reconsideration of banking regulation and risk weights under the Basel convention.

19. What are the most important factors which constrain quoted companies and fund managers from making longer term investment decisions, and how can we best address these factors?

The growth of patient capital is critical in allowing long term investment. Closed end funds like venture capital operate on an arbitrary 10-year horizon, which, for a variety of reasons, effectively leaves a 5-7 year investment horizon. As noted, patient capital approaches, such as that pioneered by Neil Woodford in Oxfordshire, are overturning this model and allowing more appropriate timescales for investment in technology and growth companies. This allows investors to achieve liquidity through the listing of the fund, and the structure does not force fund managers to sacrifice sensible long-term investing in order to generate short term returns. The University of Oxford’s work with Oxford Sciences Innovation shows how large scale funds can be raised on this basis through universities and capital institutions working together. The University-OSI deal was made possible because the University has clear policies on IP ownership and the ability to take a reasonable equity position in new businesses that it can share with a partner.

Tax incentives are a very important factor; the EIS and SEIS schemes have been very useful in attracting capital into early stage technology businesses (both Oxford and Cambridge have had much success in working with Parkwalk Advisors in raising and investing a series of EIS/SEIS funds over recent years). Changing pension rules has also encouraged an inflow of capital into this type of vehicle.

20. Given public sector investment already accounts for a large share of equity deals in some regions, how can we best catalyse uptake of equity capital outside the South East?

21. How can we drive the adoption of new funding opportunities like crowdfunding across the country?

Crowd funding is not a substitute for other types of private or public funding but in our experience it can be used as a possible route to provide small-scale funding for projects that would otherwise not be attractive or eligible for the other funding routes. It is somewhat unpredictable what will catch the attention of ‘the crowd’. Success requires a platform to work on (website for material, online payment capabilities), knowledge/training about how to run a successful campaign and a project team to work extremely hard in planning and delivering what is essentially an extensive online PR campaign.

Oxford has successfully crowd funded for philanthropic donations in the £50-£100k bracket to develop two medical training technologies for use in Africa (emergency maternity training, treating clubfoot). These projects are in the development and implementation phase meaning that they would not be eligible for public research money, and the returns are unattractive for private equity investment. We have also experienced a start-up company raising a small investment round through

10 https://www.home.barclays/news/2016/04(scale-up-UK.html
crowdfunding for equity investment. Our experience of crowdfunding is that a successful campaign, though a lot of work, brings benefits beyond the money in terms of new opportunities and commercial interest generated through the campaign in unexpected ways.

Universities can experiment with these new funding mechanisms, and are already doing so. Funding to help universities to share lessons and good practice, and to underpin the set up costs of this type of activity at enthusiastic universities would increase uptake across the UK.

22. What are the barriers faced by those businesses that have the potential to scale-up and achieve greater growth, and how can we address these barriers? Where are the outstanding examples of business networks for fast growing firms which we could learn from or spread?

We welcome the setting up of the Scale-Up Taskforce which aims to increase the number of businesses expanding their operations.¹¹

The report *Scale-up UK: Growing Businesses, Growing our Economy*, convened by Barclays, features chapters by the Cambridge Judge Business School and the Oxford Said Business School on ‘Solving the Scale-up problem’ and ‘Financing UK Scale-ups’ respectively.¹² The major recommendations are shown below:

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¹² https://www.home.barclays/news/2016/04/scale-up-UK.html
Pillar 5: Improving procurement – we must use strategic government procurement to drive innovation and enable the development of UK supply chains.

Various parts of the University are working with partners to try to address some of the barriers.

Oxford Sciences Innovation plc is providing capital and scaling expertise to businesses driven by intellectual property developed in Oxford’s Mathematical, Physical, Life Sciences Division and Medical Sciences Divisions.\(^{13}\) (OSI investors include Lansdowne Partners, Woodford Asset Management, Google Venture and the Wellcome Trust).

The Said Business School is giving a particular focus in its teaching, research and enterprise support to how we move build upon the UK’s success as a start-up nation to become a scale-up nation.

Business incubation is a key priority for Oxford University, and for OxLEP. University science parks play a key role locally (and across the UK).

At a ceremony on 4 April 2017 at The Oxford Science Park, owned by Magdalen College Oxford, the Universities and Science minister Jo Johnson commented:

> Oxford’s world-leading success is built on its research excellence that continues to attract the best minds and cement the UK’s reputation as an innovative nation. The new Schrödinger Building will be another important addition to Oxford, supporting the relationship between academics and businesses to foster the development of pioneering start-ups. Our Industrial Strategy will build on these existing strengths to ensure the UK remains at the forefront of global science.\(^{14}\)

The Oxford Science Park currently houses more than 2,500 people in over 70 companies, ranging from start-ups to SMEs and multi-national organisations.

Our Begbroke Science Park encourages links between high-tech science-based spinouts, their more established counterparts and the University.

Recent work commissioned by Milton Park Science Park in the South of Oxfordshire showed that many Milton Park companies can trace their origins back to Oxford University, and those University spin-out companies looking to scale-up

1. Grow the fastest (in terms of floor space take up);
2. Account for nearly half of the top ten largest companies at Milton Park; and
3. Represent about a quarter of the total contracted rent (derived from the 250 businesses across the whole of Milton Park).

The BioEscalator being built on the University’s Old Road Campus will focus on the commercialisation of medical and bioscience research. For University researchers, the BioEscalator will be a focal point for interacting with bioscience industry and to form contacts and collaborations. For start-up companies there will be a range of services as well as laboratory and office space.

We are working with OxLEP and other parties to try to increase the spaces in Oxfordshire to house growing private and social enterprises.

The Academic Health Science Networks are proving very useful in enabling firms to understand what is required for uptake by the NHS and to provide a bridge between the NHS and technology providers. Likewise several of the Catapult centres have facilitated useful networks.

\(^{13}\) See http://www.ox.ac.uk/news/2015-05-14-university-oxford-launches-landmark-%C2%A3300m-partnership-boost-development-world-class

Pillar 5: Improving procurement – we must use strategic government procurement to drive innovation and enable the development of UK supply chains.

23. Are there further steps that the Government can take to support innovation through public procurement?

24. What further steps can be taken to use public procurement to drive the industrial strategy in areas where government is the main client, such as healthcare and defence? Do we have the right institutions and policies in place in these sectors to exploit government’s purchasing power to drive economic growth?

Pillar 6: Encouraging trade and inward investment – government policy can help boost productivity and growth across our economy, including by increasing competition and helping to bring new ways of doing things to the UK.

25. What can the Government do to improve our support for firms wanting to start exporting? What can the Government do to improve support for firms in increasing their exports?

26. What can we learn from other countries to improve our support for inward investment and how we measure its success? Should we put more emphasis on measuring the impact of Foreign Direct Investment (FDI) on growth?

Pillar 7: Delivering affordable energy and clean growth – we need to keep costs down for businesses, and secure the economic benefits of the transition to a low-carbon economy.

27. What are the most important steps the Government should take to limit energy costs over the long-term?

28. How can we move towards a position in which energy is supplied by competitive markets without the requirement for on-going subsidy?

29. How can the Government, business and researchers work together to develop the competitive opportunities from innovation in energy and our existing industrial strengths?

30. How can the Government support businesses in realising cost savings through greater resource and energy efficiency?

Pillar 8: Cultivating world-leading sectors – we must build on our areas of competitive advantage, and help new sectors to flourish, in many cases challenging existing institutions and incumbents

31. How can the Government and industry help sectors come together to identify the opportunities for a ‘sector deal’ to address – especially where industries are fragmented or not well defined?

32. How can the Government ensure that ‘sector deals’ promote competition and incorporate the interests of new entrants?

33. How can the Government and industry collaborate to enable growth in new sectors of the future that emerge around new technologies and new business models?

Pillar 9: Driving growth across the whole country – we will create a framework to build on the particular strengths of different places and address factors that hold places back – whether it is investing in key infrastructure projects to encourage growth, increasing skill levels, or backing local innovation strengths.

34. Do you agree the principles set out above are the right ones? If not what is missing?

35. What are the most important new approaches to raising skill levels in areas where they are lower? Where could investments in connectivity or innovation do most to help encourage growth across the country?

Pillar 10: Creating the right institutions to bring together sectors and places – we will consider the best structures to support people, industries and places. In some places and sectors there may be missing institutions which we could create, or existing ones we could strengthen, be they local civic or educational institutions, trade associations or financial networks.

36. Recognising the need for local initiative and leadership, how should we best work with local areas to create and strengthen key local institutions?

37. What are the most important institutions which we need to upgrade or support to back growth in particular areas?

The UK’s universities play a vital role in connecting people, industries, places and new thinking. Some have nationwide and international reach. All of them shape the communities within which they are embedded. The enduring permanence of universities in local communities lends itself to a strategy of building investments around them. Investing in facilities that can be used by industry and academia together, or finding ways to incentivise and support the location of businesses, large and small, in university science parks and campuses will help to capitalise on their attributes and provide a sense of confidence for companies and the local workers alike.
Recently the role of universities as “anchor institutions” has been much discussed, and a number of studies have uncovered the extent of the contribution of universities to the economy. Some of these have been in unexpected areas (for example it was estimated that 43% of visitors to Oxford are here to see some part of Oxford University – a significant contribution to the tourism economy) but they have usually been framed passively – the mere fact of universities’ existence generates welcome economic activity. Over the last decade, however, the active, purposeful engagement of universities in their regions has become increasingly evident. Oxford University is using its resources to build innovation centres, support entrepreneurs and to create new innovation districts within the City of Oxford (to provide space for the growing numbers of start-ups and scale-ups emerging from the City). University departments, museums and galleries are looking for ways to engage children and young people in science, history, and the joy of enquiry, and academics (as well as student consultants, interns and volunteers) are looking to use their knowledge and expertise within the community.

**LEPs are welcome additions to local landscapes.** In Oxford we are very fortunate to have a LEP who engages well with us (incl. via a jointly appointed post to support working together) and recognises the value of the universities in Oxford in supporting innovation and the local economy. Anecdote suggests that not all LEPs see the value in engaging with universities, and this perhaps might be encouraged more. However, the limited core funding available for LEPs constrains their ability to collaborate flexibly with local players to address local innovation needs – we would urge government to properly support LEPs for the long term, especially in places like Oxfordshire where there is almost no regional regeneration funding like ERDF that can be repurposed to support the LEP.

38. Are there institutions missing in certain areas which we could help create or strengthen to support local growth?

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