

## Response to the Green Paper: Building our Industrial Strategy

April 2017

The following are the responses to the Green Paper consultation from the University of Sussex. We have responded to some but not all of the questions, reflecting the nature of the organisation. We have also generally responded to groups of questions, reflecting the overlapping nature of the questions and our responses.

### Questions for Consultation

#### Summary

1. Does this document identify the right areas of focus: extending our strengths; closing the gaps; and making the UK one of the most competitive places to start or grow a business?
2. Are the ten pillars suggested the right ones to tackle low productivity and unbalanced growth? If not, which areas are missing?
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?
4. Are there important lessons we can learn from the industrial policies of other countries which are not reflected in these ten pillars?

The broad thrust of the draft Strategy is reasonable. However, it includes important elements that are about and affect the breadth of the UK's economy and society, and not just about 'industrial strategy'.

We wish to note that industrial strategy is about more than just STEM subjects, skills and topics. The economic value of human behaviours needs to be recognised. The application of STEM knowledge and new technologies needs to be accompanied by full understanding and support of sociological and cultural behaviours to be fully effective.

Development of the full range of skills is essential. We agree that technical and other forms of non-graduate education and development need to be equally promoted as valuable routes to productive capability and capacity.

As well as developing skills, the UK needs to be able to access skills and other forms of knowledge. This requires enabling the two-way movement of people across borders, for various periods of time.

Whilst the UK demonstrates a high level of relevant inward investment for R&D, it is also exposed by the proportion of the total investment that that represents. This paints a poor picture of the endemic level of R&D investment by UK organisations. The UK's level of GERD as a percentage of GDP has been stuck at 1.6%-1.7% for over 20 years. This puts us at a disadvantage in comparison to our major competitors, and to a number of fast developing countries. This is as much about cultures and behaviours as it is about absolute availability of investment.

Throughout the document there is a somewhat over-simplistic representation of the geographical differences, North compared to South. There are pockets of deprivation,

need and imbalance in all regions of the country. Equally, the UK needs the productive areas of London and the South-East to continue to perform in order to fuel the wider economy, both directly and through tax receipts.

## **Investing in Science, Research & Innovation**

5. What should be the priority areas for science, research and innovation investment?
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?
8. How can we best support the next generation of research leaders and entrepreneurs?
9. How can we best support research and innovation strengths in local areas?

We support the breadth of areas identified, and encourage the engagement of diverse expertise to address the range of potential topics encompassed. Over-concentration of resource on a small number of narrowly-defined technologies will not provide the extent of impact that is needed or desired, and cross-over between challenge areas should be supported. There needs to be appropriate pull-through of basic knowledge and technologies, as well as near-market applied work. This requires adequate absorptive capacity, along with the relevant cultures.

As noted above and in the Green Paper, the proportion of non-UK BERD is relatively high, which potentially exposes the UK to changes in investment decisions made outside the UK. A report by CIHE/UK-IRC in 2012 noted that only 10 companies represent 34% of BERD, and 50 companies represent 56%. This is a highly skewed picture, that has probably not changed much to the present day. The lack of diversity results in high risk to UK innovation

Co-production is an important mechanism to promote. This might be between like-organisations, or between those of different types, across and within supply chains. Intrapreneurship is as important as the commercialisation of inventions or discoveries.

We note that there is a danger in focusing on patents as if it were the only mechanism. Copyright and know-how represent much larger bodies of exploitable knowledge. Also, world-wide, only about 3% of patents generate any income. Equally, innovation does not just arise from discovery through a linear process. This argument has been well-rehearsed over many years, and there is a danger of the Green Paper slipping back into this fallacy. Process innovation and the uptake of existing technology by lower-productivity companies are just as important.

The support for research and innovation needs to be reflexive, responding to the different needs of different types and sizes of organisations. For example, for SMEs, loans may not be attractive or practical; whereas for larger firms they may encourage the choice of relatively easy projects. Whilst SMEs are important, more emphasis needs to be given to mid-sized companies, where growth and uptake of innovation is more likely.

## **Developing Skills**

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?

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?

We support the ambitions with respect to developing skills but note the difference between qualifications and skills.

Retraining and up-skilling the workforce in order to meet the future demands of industry, business and public services is essential. On-going skills development needs to be embedded in the culture of the workforce. The pace of change will continue to quicken, which means that all parts of the workforce will need to update their skills on a regular basis.

The cost of the continuous process of re-skilling, training and development will be significant, to individuals and to employers. The Government may wish to explore incentives for companies or individuals who want to improve their potential to be more productive.

## **Upgrading Infrastructure**

15. Are there further actions we could take to support private investment in infrastructure?
16. How can local infrastructure needs be incorporated within national UK infrastructure policy most effectively?
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?

As we have noted earlier, some areas, such as infrastructure, support the wider economy and society, and not just specific aspects of an industrial strategy.

The needs for infrastructure development are not only in certain parts of the country. The radial connections into London might be reasonable, albeit overcrowded, but the connections across the country (both road and rail), e.g. along the South coast, are woefully inadequate: the journey time between Brighton and Canterbury, a distance of under 80 miles, is about the same as that between London and Paris, to use the example from the Green Paper. This level of performance contributes to the emergence of pockets of deprivation previously mentioned.

Development of infrastructure requires political will at all levels, alongside the appropriate levels of public and private finance.

The Green Paper notes the importance of broadband connectivity. We should also be honest about what 'fast' and 'superfast' actually mean, in comparison to our competitors.

## **Supporting Businesses to Start and Grow**

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?
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?
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?
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 support the recognition of the importance of scaling up, and suggest that the balance between this and support of start-ups should be adjusted. As well as identifying the financial requirements of scaling up, we would also note the challenges of space, in particular of grow-on space for companies in incubators as well as those who have graduated from such facilities.

The Green Paper notes the possibilities of supporting moderate growth as well as high-growth opportunities. We observe that initiatives to support moderate growth will need to be different, with different criteria, to those supporting high growth. The former will not necessarily look as attractive or high profile as the latter, which needs to be borne in mind.

We also agree with the observation about the skills gap in relation to leadership and management.

Innovation and growth needs to be supported by a combination of grants, convertible equity products, and loan guarantees, flexed towards the nature of the business and of the activity.

## **Improving Procurement**

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?

We support initiatives to open up and simplify public procurement processes.

## **Encouraging Trade and Inward Investment**

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?

We applaud the recognition of the importance of international trade. Such trade depends on appropriate trade-related policies and agreements, but can also be derailed by inappropriate non-trade policies.

Exports include significant levels of skills and knowledge, as well as that of manufactured goods, and the former should not be overlooked.

### **Delivering Affordable Energy and Clean Growth**

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?

Addressing the UK's energy requirements will require a combination of technology (generation, storage, use) along with demand management and economic frameworks. It is thus a combination of technological, economic and societal solutions. We are not clear that all three strands are being addressed.

### **Cultivating World-leading Sectors**

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?

We recognise the advantages of supporting a sector-based approach where appropriate, but also support the Green Paper's comments about supporting areas of emerging innovation or that have not consolidated.

We advise against drawing sector boundaries too definitively or tightly. We also suggest the opportunity to look for generic areas of expertise or capability that cut across sectors, and which would benefit from some co-ordination or interplay.

The contribution of universities can be seen in their labour market contribution, which may take a more local form, as well as their contribution to innovation, which is less appropriate to restrict geographically, if one is to maximise the benefits arising.

### **Driving Growth Across the Whole Country**

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?

The Local Growth Fund is an important mechanism, which needs to serve all parts of the UK, and to continue with alternative funds once the UK leaves the EU. Whilst appreciating the need for a fair and open process, these processes also need to be simplified and decentralised. The current processes are overly duplicative, slow and constraining in comparison to other investment and funding mechanisms.

### **Creating the Right Institutions to Bring Together Sectors and Places**

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?

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

In considering the nature of 'place', there is a substantive role for a metropolitan focus, as seen through the City Deals and similar approaches. There is also the potential for greater use of a network focus, in which a number of medium-sized places collaborate. Whilst this might be most easily conceptualised on a near-geography basis, there may also be cases of more widely-distributed places having a commonality in which it makes sense to collaborate. This would challenge the existing authority boundaries, but might unleash significant productive potential, if supported by enhanced communications infrastructure.

There are a number of well-formed and prominent networks of universities. However, some areas of the UK are less well served, and the networks tend not to be that inclusive within their regions. It may therefore be that those networks are not maximising the effects that they could have.

The Green Paper asks in a number of places about which institutions need to be created or reinforced, but does not also ask which should be eliminated or reduced to remove duplication or confusion. Alongside this, we suggest the need for continuity in structures and processes.

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