

What constitutes an effective industrial strategy for the UK?

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Chair:	The Earl of Selborne GBE FRS Chair, The Foundation for Science and Technology
Speakers:	Professor Graeme Reid Specialist Adviser to the House of Lords Select Committee on Science and Technology for the Industrial Strategy Inquiry Professor Dame Ann Dowling OM DBE FEng FRS President, Royal Academy of Engineering Andrew Barker Head of Investor Relations, International Airlines Group Anthony Lilley OBE Chief Executive and Chief Creative Officer, Magic Lantern
Panellist:	Dr Andrew Harter FEng FIET FBCS Chair, Cambridge Network and Founder and CEO, RealVNC
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Audio Files:	www.foundation.org.uk
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PROFESSOR GRAEME REID opened by recalling that Lord Hennessey had said the Strategy had been at least the ninth Government industrial strategy to be published¹. The Prime Minister had said this one was distinctive, because it had been created by a Government preparing for Brexit. This context was a turbulent one. Nevertheless, the Strategy had been widely welcomed for revisiting the relationship between Government, industry and universities, particularly in the prominence given to science

¹Building our Industrial Strategy: Green Paper - www.gov.uk/government/consultations/building-our-industrial-strategy

and innovation, and that this had followed the large funding increase in this area announced in the 2016 Autumn Statement. The Lords Select Committee had observed that the Strategy was a rich collection of tactical objectives, lighter on strategic objectives and quite a bit lighter on coherence. A key weakness was the lack of clarity about who in Government should in reality be accountable for delivery of the Strategy, although this was only a Green Paper, so there was time to improve this. In terms of coherence, authorship of the sections on the ten different pillars by different Departments was apparent. There had been some references to science in the section on regions,

but none in the section on trade. More was needed on how the pillars would work together. It was welcome that five prominent individuals had been named to lead work on important industrial sectors. However, there appeared to be an underlying assumption that the UK economy remained separated into traditional sectors, whereas much of the economy of the future would not be constrained by such sectoral definitions.

There were three main gaps in the Strategy. First, it described itself as a Strategy for the UK, but the topics covered by several pillars were devolved, such as skills and aspects of higher education, and there had been no substantive involvement of the Scottish and Welsh

administrations in the preparation of the Strategy. The powers of the growing number of elected mayors also added complexity. Second, if the UK was to seize comparative advantage after EU exit then tax and regulation would be key areas for an industrial strategy, but these had not been covered. Third, immigration policy had also not been covered, but for many businesses their high dependence on attracting skilled staff at many levels was fundamental. Overall this Strategy should be given a warm welcome, but the UK had persistent challenges of low productivity, wide regional disparity in prosperity, in maximum harvesting of its strong science base and scaling up the output of innovation, so there was still much to do.

DAME ANN DOWLING said that the Royal Academy of Engineering's response to the Industrial Strategy had been based on wide consultation. First, the Strategy must be based on an ambitious vision for the UK as a leading trading nation and a top destination for global talent. Success would require stability and continuity, built on consensus beyond an individual Parliament. A more positive perception of industry and modern engineering needed to be promoted.

Second, it was heartening that people were at the core of the Strategy, but the focus needed to be on adult skills of those in the workforce as much as on

young people. Teacher shortages in STEM subjects urgently needed to be tackled, and there needed to be a better interface between businesses and schools so that the real life context of STEM subjects was much more widely understood by teachers. Increasing the diversity of those trained in STEM skills was essential.

Third, the Government needed to be more ambitious in supporting innovation. The 2016 Autumn Statement had been very welcome, but the Government should set a target of 3% of GDP combined public and private R&D investment, and formulate a roadmap with the private sector to achieve it. Improving UK infrastructure should not mean lots of new build-

Ten pillars from the Industrial Strategy Green Paper

- Investing in science, research and innovation
- Developing skills
- Upgrading infrastructure
- Supporting businesses to start and grow
- Improving procurement
- Encouraging trade and inward investment
- Delivering affordable energy and clean growth
- Cultivating world-leading sectors
- Driving growth across the whole country
- Creating the right institutions to bring together sectors and places

ings, but creating environments to test innovations at scale, and developing the specialist skills which businesses needed. Publicly funded schemes to support innovation by business should be simplified, and made better known to SMEs.

Fourth, to tackle the agenda of place there should be well-informed careers advisers with up to date knowledge of STEM careers, to influence the aspirations of young people. Local institutions needed to attain consistent levels of excellence. Fifth, infrastructure improvements must give priority to local transport needs, and the underpinning for a digital future. The UK was strongly placed to develop a leading digital economy, with sufficient investment in digital skills.

ANDREW BARKER welcomed the previous speaker's support for the 3 per cent R&D target. The International Airlines Group (IAG) was the fifth largest airline group in the world, and was precisely the type of large UK based global business whose future investment decisions would be influenced by the Government's industrial strategy. IAG combined investments in engineering in locations across the UK with investments in newer digital businesses like Avios. So investments in the UK skills base, both in engineering and digital skills, were very important.

In terms of infrastructure, a cost effective expansion of Heathrow was the top priority. The Department for Transport should be much more engaged in constructive dialogue with airlines, for example over less expensive options for the Heathrow third runway, including not extending over the M25. London remained the leading international airport hub, and the Strategy should recognise better the massive economic benefits which this secured for the UK economy, both in attracting international business activity to the UK and tourism. The Government should be more joined up in evaluating overall economic benefits to the UK, in that the relatively high air passenger duties levied by the UK resulted in much larger loss of VAT receipts from the smaller number of tourists attracted to this country. Spain, which did not levy such duties, had been much more successful than the UK in retaining Japanese visitor numbers as a result.

Further attention was needed in the Strategy to developing international long term patient capital providers to the UK. Those nations with sovereign wealth funds had found them enormously useful in boosting longer term investment. By comparison, the UK had £1.34 trillion invested in UK pension schemes, but these funds were being invested much less to the long term benefit of the UK economy. There was scope for an imaginative re-alignment.

ANTHONY LILLEY explained why the Industrial Strategy would be important for the business he had founded twenty years ago, Magic Lantern, which involved the interaction of creative people with culture, human behaviour and technology. Although it was debateable whether the creative industries were a sector in the traditional sense, they had substantial economic impact, being responsible for £84 billion of GVA, and were still growing significantly. 30% of the UK's creative industries were based in London, and they were responsible for £18 billion of annual exports.

Many in the creative industries had been dismayed by the language of the Industrial Strategy, which had felt too orientated towards heavy industry and traditional sectoral definitions. Similarly, the current Government definition of R&D was not fit for purpose by excluding almost all contribution from the creative industries. Some muddled thinking was apparent in failing to distinguish cultural subsidies, for example for theatre, from the output of the creative indus-

tries. It should be acknowledged, however, that some cultural subsidies did end up generating substantial wider economic activity, such as the support for the original RSC production of *Les Miserables*. The soft power benefits of the creative industries should be better appreciated. Two shortcomings of policymakers in relation to the creative industries were that they continually debated the accuracy of any economic data relating to these industries, and they sought to operate on unrealistically short timetables.

In terms of suggested priorities for the Industrial Strategy, the focus on STEM skills was too narrow, as the current economy needs skills for example to realise the benefits of robotics in the creative economy. The public investment of bodies such as the BBC and the Arts Council in stimulating innovation should be better recognised. The production of *Game of Thrones* in Belfast was bringing great benefits to the economy in Northern Ireland and this was being supported by local universities. Overall the creative industries succeeded despite the Government's traditional approach, but wider thinking would enhance the Strategy substantially.

At the beginning of the discussion, **DRANDY HARTER**, Chair of The Cambridge Network and Founder and CEO of RealVNC, suggested that as the Industrial Strategy was developed there should be greater willingness to incorporate risk, and less reliance on a very risk adverse approach. He fully supported the comments on developing more patient capital, and that this needed a longer term consensus.

In subsequent discussion, there was a call for more effective regional investment in innovation. Some felt that competition between regional bodies needed to be avoided, and that previous regional bodies had operated to time horizons which had been too short, so that continuing with national schemes of support, with national quality assurance but local implementation, might be a better approach.

There was only limited coverage of environmental concerns in the Strategy, although one pillar had covered energy and clean growth. During the Brexit negotiations, the Government had important decisions to take on whether to retain the full range of current EU environmental regulation. The impact of these on economic growth needed further consideration. During the Brexit negotiations consideration was also needed about whether freedom from the current state

aids regime should be created.

It was surprising that the Industrial Strategy had not shown greater recognition that a Government approach based on giving business freedom to innovate, without increased regulation, had much to commend it. The approach of Singapore, with less direct intervention by Ministers, was attractive. Arguably the success of Germany in this area had been due to its commitments to continuity and stability. The US support for innovation through national laboratories, but not with the determination of priorities by Ministers, had much to commend it. If the research sector had the capability to pick research winners, then procurement had a key role in pulling through the resulting innovation. The development of Amazon and Uber, with their access to patient capital and breaking through traditional sectors, should leave Government cautious of much reliance on a sectoral approach. Current debates about whether internet service providers should have responsibilities as publishers needed thoughtful legislative action. Government action to stop those acting illegally having access to payment providers had been effective.

In terms of the skills agenda, there was support for continuing with a broader education for more years pre university, and for the breadth of the International Baccalaureate. Giving as many university students as possible direct experience of industry would be helpful. The apparent focus of the Strategy on manufac-

turing sectors needed to be amended to recognise that 80% of the UK economy was now based on services. Traditional engineering skills frequently needed to be combined with understanding of behaviour. Creative subjects at school developed resilience and self-reliance, which were vital to the modern economy. In terms of developing skills to last a 50 year career, changing pension arrangements so that a portion of a pension pot could be used mid-career to retrain ought to be considered.

The building sector was not renowned for its level of innovation, and this was coupled with low productivity. Advanced manufacturing techniques and digital technologies could transform the construction sector. The leading companies needed encouragement to invest in this innovation.

Although there was a suggestion that elements of protectionism had served the US well, more felt that the UK had to seek to remain competitive in a global trading economy. The UK would work better with less bureaucracy. Somehow we needed to get through the present period by continuing to welcome international skills to the UK, and with greater stability in our approach to doing so. Success for the Strategy's objectives would depend on confidence in business/university collaboration.

John Neilson

LINKS

Building our Industrial Strategy: green paper

www.gov.uk/government/consultations/building-our-industrial-strategy

House of Lords Science Select Committee Industrial Strategy Inquiry

www.parliament.uk/business/committees/committees-a-z/lords-select/science-and-technology-committee/inquiries/parliament-2015/science-and-technology-and-the-industrial-strategy/

House of Lords Select Committee on Science and Technology

Letter to the Secretary of State for Business, Energy and Industrial Strategy

www.parliament.uk/documents/lords-committees/science-technology/Industrial-strategy/2017-05-02-Industrial-strategy-ltr-to-BEIS-Secretary-of-state.pdf

UKRI:

UKRI

www.gov.uk/government/news/sir-mark-walport-will-lead-uk-research-and-innovation

Research Councils UK

www.rcuk.ac.uk

Arts and Humanities Research Council
www.ahrc.ac.uk

Biotechnology and Biological Sciences Research Council
www.bbsrc.ac.uk
Engineering and Physical Sciences Research Council
www.epsrc.ac.uk

Economic and Social Research Council
www.esrc.ac.uk

Medical Research Council
www.mrc.ac.uk

Natural Environment Research Council
www.nerc.ac.uk

Science and Technology Facilities Council
www.stfc.ac.uk

Higher Education Funding Council for England
www.hefce.ac.uk

Innovate UK
www.gov.uk/government/organisations/innovate-uk

Departments, Companies, Research Organisations and Academies:

Academy of Medical Sciences
www.acmedsci.ac.uk

Association of Innovation, Research and Technology Organisations (AIRTO)
www.airto.co.uk

British Academy
www.britac.ac.uk

Catapult Programme
www.catapult.org.uk

Department for Business, Energy and Industrial Strategy
www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy

Department for Culture, Media & Sport
www.gov.uk/government/organisations/department-for-culture-media-sport

Department for Education
www.gov.uk/government/organisations/department-for-education

Francis Crick Institute
www.crick.ac.uk

Government Office for Science
www.gov.uk/government/organisations/government-office-for-science

Higher Education Division, Department for Education, Northern Ireland Government
www.economy-ni.gov.uk/articles/higher-education-division

Higher Education Funding Council for Wales
www.hefcw.ac.uk

Knowledge Transfer Network
www.ktn-uk.co.uk

Learned Society of Wales
www.learnedsociety.wales

Magic Lantern
www.magiclantern.co.uk

The Royal Society
www.royalsociety.org

Royal Academy of Engineering
www.raeng.org.uk

Royal Society of Edinburgh
www.rse.org.uk

Russell Group
www.russellgroup.ac.uk

Scottish Funding Council
www.sfc.ac.uk

University Alliance
www.unialliance.ac.uk

Wellcome Trust
www.wellcome.ac.uk

Universities:

For a full list of UK universities go to:
www.universitiesuk.ac.uk