

Joining up the dots: Delivering a holistic and effective industrial strategy for everyone

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About the Policy Institute at King's

The Policy Institute at King's College London addresses complex policy challenges with rigorous research, academic expertise, and analysis focused on improving outcomes. Our vision is to enable the translation of research into policy and practice by facilitating engagement between academic, business and policy communities around current and future issues in the UK and globally.

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Executive summary

The UK is entering a period of transformational change. In the years to come, the UK will have to develop new relationships, negotiate new deals, and modify or create new policies. Against this backdrop, the new industrial strategy aims to:

... help to deliver a stronger economy and a fairer society – where wealth and opportunity are spread across every community in our United Kingdom, not just the most prosperous places in London and the South East. It will help our young people to develop the skills they need to do the high-paid, high-skilled jobs of the future. And it will back Britain for the long-term: creating the conditions where successful businesses can emerge and grow, and backing them to invest in the long-term future of Britain.¹

Recognising the importance of the industrial strategy for communities, businesses and the country as a whole, the Policy Institute at King's College London worked with parliamentarians, policymakers, officials, and figures from industry and academia to review the coherence of the Green Paper that sets out the government's proposals for an industrial strategy, and to provide feedback on what should feature in the White Paper to follow. We brought these stakeholders together in an innovative and interactive 'policy lab' to encourage rapid, creative thinking and to develop ideas that are novel but also grounded in the wider available data and evidence. From this, as well as from our own thinking and research, we provide in this paper five key recommendations for making the industrial strategy effective in achieving its goals.

1. Follow seven principles

Based on evidence from other countries, we identify seven principles for successful industrial strategies:

1. Create an 'enabling environment' that supports, encourages, motivates and engages.
2. Leave companies to develop and lead in making the most of the opportunities the enabling environment presents.
3. Build flexibility at local levels to choose and adapt within a national framework.
4. Be open and a 'good partner' to other countries, by abiding to commitments made.
5. Have a willingness to spend to protect capacity or make the most of existing investments. The evidence suggests that it is unwise to allow the free market to determine everything in terms of 'what can be made [or done] in the UK'. There are some competencies and capacities that should be sustained for strategic or national security reasons.
6. Sustain the strategy for the long term. The strategy can only succeed if it establishes trust with all stakeholders, creating a widely accepted commitment which can resist frequent politically driven changes of direction.
7. Be clear about the timeframes involved and the roles each party will play in the design and delivery of the strategy.

¹ Foreword to Industrial Strategy Green Paper.

2. Have a single clear purpose

The industrial strategy needs to clarify whether it is seeking to spark a radical revolution of the UK's economic and industrial landscape, with knock-on effects on communities, opportunities and education; or, whether it is more incrementalist, seeking to make minor changes and more gradual, continuous improvement. While these purposes are related, they are also very different – and how they would be brought about is very different. In our view, it is hard to do both – hence some of the underlying tensions and ambiguities in the Green Paper. Only once the overall purpose is clear will it be possible to properly assess if the set of proposed actions are likely to be successful.

3. Use ten levers that are available to government

We identify a number of factors that primarily drive productivity and place-based growth, and suggest how these might link together. Enabling horizontal policies should be geared to sectoral and local needs and ambitions should foster ownership of the industrial strategy. The way local enterprise partnership (LEP) plans evolve is already an example of this. While the bottom-up approach within a national framework is inevitably 'messy and risky' (with challenges in getting representation from innovators and start-ups, and a natural conservatism from incumbents), it does increase the chances that the resulting actions will have broader buy-in from local communities and more longevity. In reality, though, this should also be augmented by reviewing the way local government is funded to create more local capacity and accountability in delivering prosperity. Improvements in the wider education system may be closely tied to economic growth, but there is still a need for related improvements at primary, secondary, further education (FE) and higher education (HE) levels. Inward migration is likely to remain important for the mid- and low-level jobs that keep our modern economy working. Manufacturing can be a bigger part of the economy but should not be over-relied on for job creation. Place-based growth inevitably requires the strengthening and empowering of local government.

4. Consider five key stakeholders

The interests of five key stakeholders must be represented in the industrial strategy. Businesses primarily want the strategy in order to help mitigate the risks of leaving the EU and ensure the UK continues to offer a business-friendly and agile place in which to invest; similarly, they want the government to minimise uncertainty by being clear on what it wants to achieve and updating business on progress made. Local government would applaud the recognition of place as a dedicated dimension of the Green Paper and, while acknowledging the necessity of a national-level strategy, would emphasise that a more granular focus is needed on how this will be designed and delivered locally (through the application and adaptation of horizontal actions in particular). Other governments' main concern is over the potential emergence of a 'UK-first' protectionist regime that stifles market access either directly through tariffs or indirectly through regulation and changes to procurement. Pre-18 schools would welcome the ambition to widen participation in learning and greater acknowledgement of the key role that schools play in supporting skills, growth and the economy. Under-served communities need support in regenerating areas on local people's terms, particularly when it comes to infrastructure.

5. Construct an overarching narrative

There is a need for smarter branding and marketing of both the UK as a country and the industrial strategy. The industrial strategy can only succeed if the UK maintains its brand as an open, fair and positive partner that is a great place to do business. Any erosion of this, based either on reality or perception, will limit the ability of the economy to reach its full potential. It is also unlikely that the industrial strategy 'brand' will work to engage the wide range of stakeholders it needs to if it is to be a transforming strategy to re-invent the way the UK economy works. The scope of ambition is much wider than this term can communicate effectively and an alternative should be sought.

Policy lab: an interactive approach to intractable problems

Leaving the EU is a big change for everyone in the UK – for individuals, communities and businesses. The next few years will see the country carve out a new position in the world, renegotiating trading relationships with its closest neighbours and other major partners in the global economy. This, along with potential changes to policies which may affect the movement of people, the shape of the UK's commercial landscape, and the funding of science and research, has inevitably created a sense of uncertainty about the future and what it holds.

Against this backdrop, the UK government's Industrial Strategy Green Paper, published in January 2017, sets out a range of policies and actions to drive economic growth across the whole of the UK, raise levels of productivity and close the gap between the places with the greatest and least prosperity.² To some extent, the industrial strategy has a dual purpose: it is first about driving the economy forward, raising productivity and rebalancing the economy; but it is equally clear that, at least in the eyes of the government, the industrial strategy is also about future-proofing the UK economy against potential upheaval caused by Brexit.³ For some, this is a logical move; but for others, it makes for an incoherent, disjointed strategy that lacks clear objectives and, as such, is likely to have little impact on productivity, skills and rebalancing the economy.

In order to explore this contentious question further, the Policy Institute at King's College London hosted a 'policy lab' to review the coherence of the Green Paper and to provide feedback on what should feature in the White Paper to follow. Our policy lab format is an interactive and innovative one-day intensive workshop which encourages rapid, creative thinking to develop ideas that are novel but also grounded in the wider available data and evidence. Our labs allow us to convene a diverse group

of individuals with different backgrounds and experiences, who can bring distinct and valuable perspectives on a topic. In this case, the group was made up of parliamentarians, policymakers from the UK and other countries, those working in or supporting large and smaller businesses, leaders in health and science, and academics specialising in education, manufacturing and the future of work.

In advance of the lab, we provided a briefing pack which set out the challenges that the UK faces; evidence from approaches that other countries take to industrial strategy; and two frameworks, one based around systems thinking, and the other around scenario planning, to structure and inform the discussions on the day. The workshop itself started with participants reviewing the evidence base and sharing their views on where things are now. There then followed an assessment of the different factors that affect the achievement of higher productivity and the spreading of prosperity across the country, along with an assessment of the extent to which the proposed 'ingredients', ie the actions, in the Green Paper would deliver these goals. The robustness of the strategy was then tested against different potential 'futures', before participants suggested what different stakeholders would want from the strategy.

This submission to the Green Paper consultation process reflects not only the research team's own thinking and research in this area, but also the findings and outcomes of the policy lab.

2 HM Government, Building our Industrial Strategy. January 2017. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/586626/building-our-industrial-strategy-green-paper.pdf

3 'Theresa May give details of action plan for British industry', BBC. 23 January 2017. <http://www.bbc.co.uk/news/business-38713327>

Seven principles for a successful industrial strategy

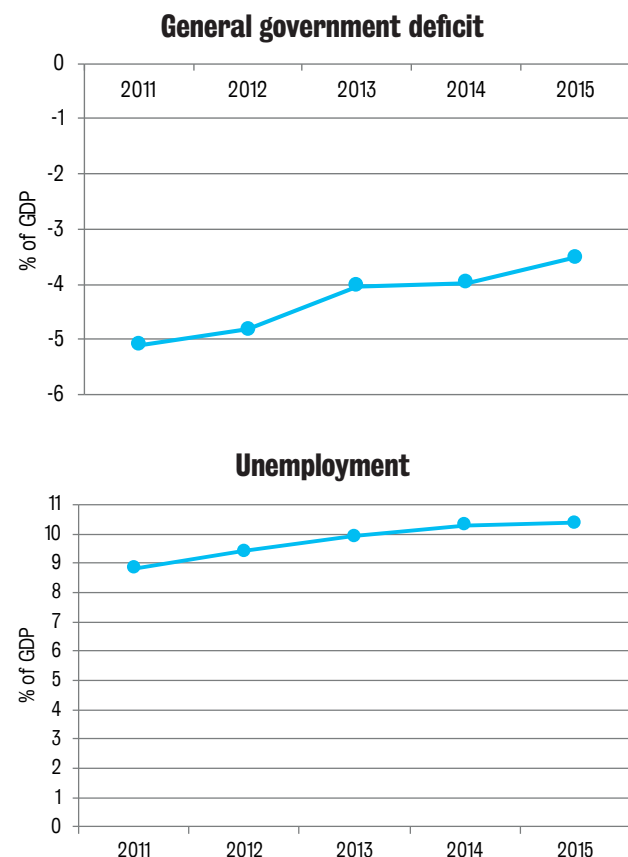
Industrial strategies, when done properly, can be effective mechanisms for achieving a whole host of positive outcomes – from producing additional economic growth and creating jobs, to retaining or regenerating areas that have been affected by the decline of particular forms of industry. However, government intervention is not without risks: there are examples of industrial policies, both in the UK and elsewhere, which have not been so successful, or worse, have actually been harmful to economies and people’s wellbeing. The frequently quoted Labour industrial policy of the 1960s and 1970s, for instance, while raising productivity in the short term, eventually proved unsustainable in the long term due to a negative balance of payments and weakened sterling.⁴

Lessons can be learned by exploring a range of approaches to industrial strategy developed by other countries, and by evaluating them to distil a number of principles for success from which the UK’s latest iteration of industrial strategy would benefit. The table below provides an overview of some of the policies currently in place in five comparator countries, and assesses their different approaches across a range of dimensions that industrial strategies might typically touch upon. While this is a deliberately high-level summary, it shows there is no single model for an industrial strategy – there are key differences between the countries in the balance between horizontal, vertical and place-focused policies.

Some of these industrial strategies have had mixed results. In France, the large role the state plays as the provider, regulator and planner of the economy has led to structural macroeconomic challenges. 21.1 per cent of the active population is employed by the public sector.⁵ While key sectors, such as nuclear and infrastructure have benefitted from long-term state planning, heavy

private-sector taxes levied to help support the health and welfare systems have created a disincentive for firms to create jobs, a situation that is closely associated with the country’s lack of innovation through start-ups.⁶

Figures 1 and 2: France’s economy 2011-2015



Source: OECD⁷

4 Pemberton, H. 'UK industrial strategy, redux: Reinvention or return to the 1970s?', Institute for Public Policy Research. 23 January 2017. <http://www.ippr.org/juncture/uk-industrial-strategy-redux-reinvention-or-return-to-the-1970s>

5 Eurostat, 'Public employment – France'. http://ec.europa.eu/eurostat/statistics-explained/index.php/Public_employment_-_France

6 'The French model: Vive la difference!', *The Economist*. 7 May 2009. <http://www.economist.com/node/13610197>; European Commission, DG for Economic and Financial Affairs, 'Macroeconomic imbalances: Country report – France 2015'. Occasional Papers 217. June 2015. http://ec.europa.eu/economy_finance/publications/occasional_paper/2015/pdf/ocp217_en.pdf

7 European Commission, 2015. It is worth noting that in Figure 2 stagnating growth since 2011 has led to rising unemployment. Young people and the low-skilled are the hardest hit, while the low employment rate of older workers remains a structural problem.

Figure 3: Comparing approaches to industrial strategy

	Germany	Japan	South Korea	France	United States
Cluster and regional policies	Ministry of Education and Research funding 3 competition rounds (2015–2017) with up to €4 million per cluster. This is a follow-up from the Leading-Edge Cluster Competition.	Currently in third term of Ministry for Economy, Trade and Industry's Industrial Cluster Autonomous Growth Period.	Building an innovation system by establishing networks among regional actors through the Industrial Complex Cluster Programme 2005–2016; the Regional Economic Area policy; and Pan Regional Cluster Program (2010).	Competitive Cluster Policy was introduced in 2004 to accelerate innovation levels and support primarily industrial activities to boost France's competitiveness.	X
Sectoral approach	Heavy focus on green innovation. The Framework Programme for Sustainable Development was launched in 2010, and focuses on climate, energy, and sustainable resource management.	'New Robot Strategy' and Japan's 'Revitalisation Strategy' focus on Robotics and Artificial Intelligence.	Building on highly successful business conglomerates.	Particular focus on strategic industries such as infrastructure, nuclear and energy.	Focus on strategic industries with state intervention for important industries.
Entrepreneurship	Despite central role of SMEs in economy, limited access to finance for start-ups and SMEs, creating an obstacle for innovation. Interventions to remedy this include the Central Innovation Programme for SMEs, and generating access to venture capital by tax relief for holding companies.	Challenge from inflexible labour market, and established companies benefit more from government support. However, access to capital has improved under Abe.	Under Geun-hye's 'creative economy' a number of initiatives were launched to promote investment in emerging start-ups, such as tax incentives and financial insurance for new businesses.	Public Investment Programme has funded the creation of a National Fund for Research Promotion (2010).	Used to be the beacon of entrepreneurship, but dynamism is slowing down and the number of new firms has been declining.
Knowledge flows and commercialisation	Through the Leading Edge Clusters collaboration is improved, thereby enhancing knowledge flows.	Increasing focus on knowledge transfers between academia and industry.	Variety of schemes aimed at improving commercialisation and knowledge transfer from public sector research, eg the Brain Korea Programme.	Industrial Chairs Programme to support collaborative research on strategic issues for French industry.	America Invests Act 2011: major policy reform to improve IPR protection and licensing.
Skills development	'Dual training scheme', cooperation between SMEs and public vocational schools, regulated by law. Result is low youth unemployment and high skills.	Focus on transferrable skills development and vocational skills. 1–2-year training programmes for graduates. National Science and Technology Basic Plan (2011-2015).	Has adopted government-led skills development system to ensure industry can draw on a skilled workforce and to protect vulnerable groups. Incentive for SME training, providing a flexible labour market and lifelong learning.	Little results despite heavy investment of resources into skills development. Number of apprenticeships for HE growing, but persistent high levels of young people without any qualifications.	Flexible approach through Workforce Development Scheme undermined by low spending for education and training system.

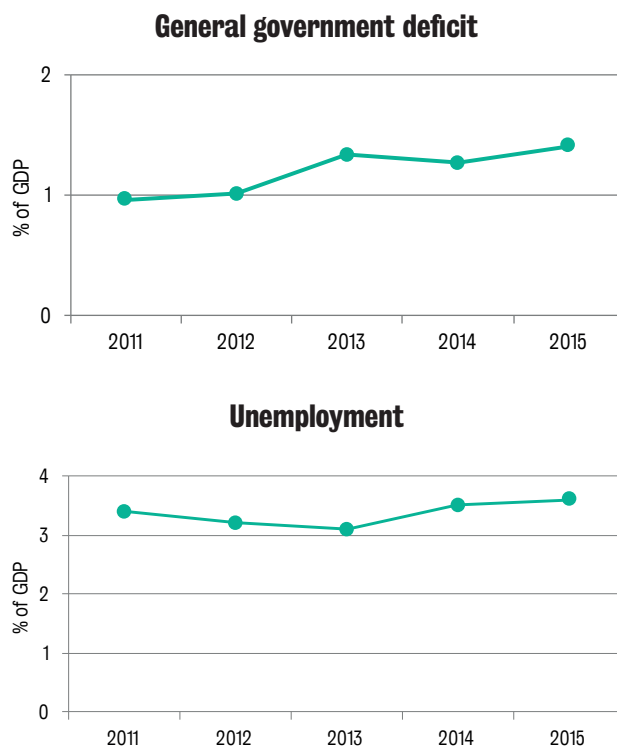
References for this table can be found on the inside-back cover of this report

Japan's economy grew significantly from the 1950s through to the 1980s, with a largely manufacturing-driven industrial strategy geared to catch up with major Western economies. However, growth has stalled since the mid-1990s, and successive governments – including the current administration, with its policies of monetary stimulus, fiscal flexibility and structural reform – have failed to find a mix of policy measures to revive the economy and maintain consistent levels of growth.⁸

By contrast, public policy in South Korea has benefitted from powerful conglomerates and strong social cohesion.⁹ Adopting a protectionist approach to economic growth, the country took on large foreign loans and allocated them to strategic industries.¹⁰ In parallel, it launched its national R&D programme as early as 1982, which through tax incentives to promote industrial R&D, resulted in a vast increase in R&D spending from the 1980s to the 2000s, with the private sector increasing its share to over 80 per cent.¹¹ This history of R&D programmes has helped to successfully drive overall growth, as well as greater prosperity through productivity gains.



Figures 4 and 5: South Korea's economy 2011-2015



Source: OECD

The US delivers world-leading productivity, and manages to do so while operating under WTO trading rules and generally maintaining a lower emphasis on country-wide industrial policies. Yet it retains a vertical approach, especially in relation to federal grant allocations for defence and aerospace, agriculture and energy, and investment in education and training.¹² In effect, the US government uses procurement, export support and multi- and bilateral trade agreements to gain advantages for specific domestic industries.¹³

In Germany, the close relation between the state and business – especially the ‘Mittelstand’, the country's large proportion of SMEs – has generated high levels of trust, which helped the country navigate the 2008–2009 recession more successfully than some of its counterparts.¹⁴

8 McBride, J. and Xu, Beina, ‘Abenomics and the Japanese economy’, Council on Foreign Relations. 10 February 2017. <http://www.cfr.org/japan/abenomics-japanese-economy/p30383>; International Monetary Fund, ‘Japan’, IMF Country Report No. 16/267. August 2016. <https://www.imf.org/external/pubs/ft/scr/2016/cr16267.pdf>

9 ‘South Korea's economy: What do you do when you reach the top?’, *The Economist*. 12 November 2011. <http://www.economist.com/node/21538104>

10 Chulchung, S. ‘Lessons to be learned by South Korea's stellar rise’, *Europe's World*. 23 February 2015. <http://europesworld.org/2015/02/23/lessons-learned-south-koreas-stellar-rise/#WKC3YRKLRE4>

11 Chulchung, 2015.

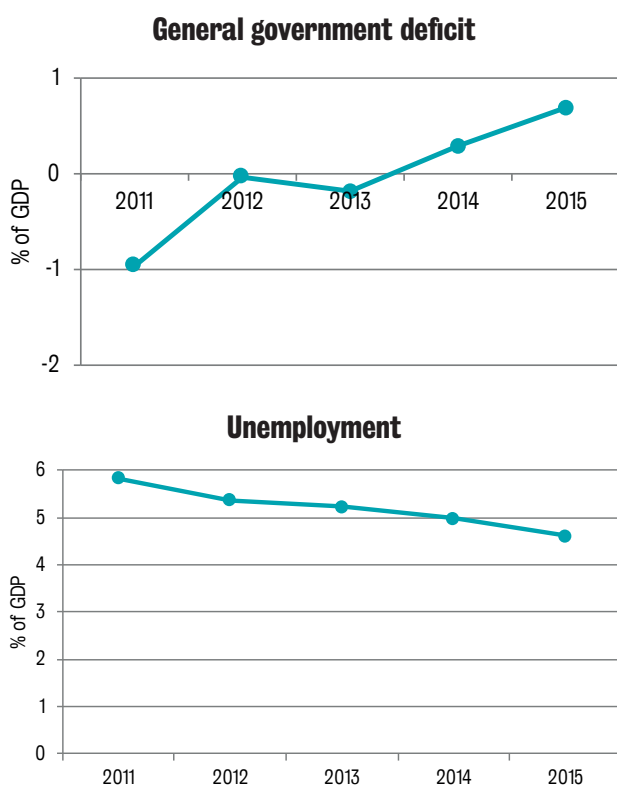
12 Stensrud, C. ‘Industrial policy in the United States’, Civitas. October 2016. <http://www.civitas.org.uk/content/files/IndustrialpolicyintheUnitedStates.pdf>; Pestowitz, C. ‘America's industrial policy’, *Foreign Affairs*. 6 March 2012. <https://foreignpolicy.com/2012/03/06/americas-industrial-policy/>; US Government, Department of Commerce, ‘US export fact sheet’, International Trade Administration. 5 April 2016. <http://trade.gov/press/press-releases/2016/export-factsheet-040516.pdf>

13 Stensrud, 2016.

14 ‘The economy: Dissecting the miracle’, *The Economist*. 15 June 2013. <http://www.economist.com/news/special-report/21579145-ingredients-german-economic-success-are-more-complex-they-seem-dissecting>

This was especially true in terms of maintaining productive capacity and employment in some important sectors, which were then well-placed to 'rebound' once confidence and demand in their respective markets returned.¹⁵ Furthermore, by focusing specifically on encouraging new industries with a niche focus, such as components for solar panels, and recognising the importance of marquee brands, Germany has been able to develop successfully as an export economy.¹⁶

Figures 6 and 7: Germany's economy 2011-2015



Source: OECD

In reviewing the evidence collected by the BEIS Select Committee,¹⁷ as well as from the five country 'case studies', it is possible to identify seven common principles that appear to be associated with more successful approaches to industrial policy.

1. **Create an 'enabling environment' that supports, encourages, motivates and engages.** This is mostly about the horizontal policies that government is best-placed to lead on but also includes the rhetoric that 'sells' the strategy to the country and continues to support and sustain it over time. In creating such an environment, the idea is to 'pick races, not pick winners' and to avoid getting 'stuck in the weeds' by deliberating on particular products, or even sectors. Instead, the principle is to look to build broad capabilities and support risk-taking in disruptive or socially important areas that underpin leaps in growth and productivity or help spread prosperity.
2. **Leave companies to develop and lead in** making the most of the opportunities that the enabling environment presents, especially in terms of deciding which markets to operate in and which products and services to invest in.
3. **Build flexibility at local levels to choose and adapt within a national framework.** LEPs are one way to enable local institutions and businesses to create 'bottom-up' views on what is needed to achieve growth and prosperity locally. These views can be used to adapt national support (eg for training and career development) into local plans to meet sectoral skills needs. It also allows the 'drip feeding of ready-to-go projects' that have a local focus but are funded or supported by national resources. The way NHS organisations have the scope to adapt national budgets for local goals is an example of this.
4. **Be open and a 'good partner' to other countries,** by abiding to commitments made. Norway was cited as an excellent example of this, making the most of its membership of the EEA by contributing money to the

¹⁵ Elliott, L. 'The UK could learn a lot from Germany's long-term industrial strategy', *The Guardian*. 30 March 2016. <https://www.theguardian.com/global/2016/mar/30/the-uk-could-learn-a-lot-from-germanys-long-term-industrial-strategy>

¹⁶ Rattner, S. 'The secrets of Germany's success', *Foreign Affairs*. July/August 2011. www.foreignaffairs.com/articles/germany/2011-06-16/secrets-germanys-success

¹⁷ Business, Energy and Industrial Strategy Committee, 'Industrial Strategy: First review', House of Commons. Second report of session 2016-17, HC 616. 3 March 2017. <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmbeis/616/616.pdf>

research programme and being proactive and constructive in its dealings with EU partners.

5. **Have a willingness to spend to protect capacity or make the most of existing investments.** The evidence suggests that it is unwise to allow the free market to determine everything in terms of ‘what can be made [or done] in the UK’. There are some competencies and capacities that should be sustained for strategic or national security reasons. Examples here include how Germany has spent public money to maintain capabilities in what it considers to be strategically important industries like steel. In the UK, it can be argued that capacity has been lost in areas like the nuclear sector, which, if it had been more sustained, could have been applied afresh to valuable national projects and international market opportunities. Market forces have also led to the UK losing skills in fields such as composite materials. Making the most of investments that are already planned may also need additional spending, with one suggestion being the need to create enough engineers and track layers to deliver the HS2 railway.
6. **Sustain the strategy for the long term.** The strategy can only succeed if it establishes trust with all stakeholders so that there is a widely accepted commitment which can resist frequent politically driven changes of direction. In that sense, the strategy needs future-proofing to look beyond short-term challenges. This requires ownership by sectors, by places and by the public at large. Achieving this can be hard, since it will be very difficult to deliver lots of change in the short term. It inevitably takes time for the ‘black box’ of policy interventions (especially horizontal actions in basic education and R&D) to work. So to build trust in the strategy, some short-term ‘deliverables’ will be needed to demonstrate its effectiveness, with the efforts around apprenticeships, retraining and community-level regeneration the ones that are likely to be the most widely visible.
7. **Be clear about the timeframes involved and the roles each party will play in the design and delivery of the strategy.** 80 per cent of the strategy should be looking to the long term, tackling the structural and other blockages in the way the economy works and committing to investment in skills and infrastructure that will take a number of years, perhaps decades, to fully pay back. The other 20 per cent should provide a framework for responding to short-term challenges (general downturns, shifts in the prospects for particular industries, opportunities from new trade deals, etc). This balance enables the strategy to navigate the ups and downs of economic cycles and unexpected events, using a staggered approach to prepare for each stage of implementation, as the strategy moves towards achieving its longer-term goals. It is also sensible to establish clear roles for different parties (eg industry, government, HE sector) based on which has the most commitment and/or influence over each stage. So, government might be best to drive the agenda in the short term (up to five years), industry may take the lead over the five- to 10-year time period, and government may pick up responsibility for the longer term (10–30 years).

While the Green Paper identifies some of these principles, either explicitly or implicitly, there is certainly room for development with regard to other principles. It is clear that the strategy is aimed at helping long-term planning, yet, in our view, the actions fail to ensure there will be sufficient resilience to successfully navigate future political turmoil or other unexpected events. And although the Green Paper also does an excellent job at identifying the value of local government and LEPs, the government as a whole must recognise that for these local authorities to maximise their new potential impact, they need to be given more decision-making powers as well.

One clear purpose: evolution or revolution?

The UK faces ‘a moment of grand change’ – a significant departure from the immediate past which leaves the UK having to move faster to deal with the repercussions of the EU referendum vote. The events of the last year suggest that there are major issues to tackle: there are real problems with the spread and balance of wealth across the country, and a sense of social inequality (or social injustice). There are challenges over the untapped potential of technology and other research, which is not always effectively commercialised or where large-scale public procurement is not leveraged, and there is a ‘long tail’ of the population unable to engage fully, or as productively as possible, with the world of work. And, at a more local level, there are pressures on the unity of UK communities, with a sense of division and fraying of the social fabric.

The Green Paper, then, has both a considerable remit and considerable expectations. It sets out a range of proposed measures for the industrial strategy, all set against the overall goal ‘to improve living standards and economic growth by increasing productivity and driving growth across the whole country’. The introduction to the strategy emphasises that it will address those fields where the UK is already a global leader, increase growth in areas outside of London and spread wealth across the UK, tackle skills shortages and improve productivity. In order to achieve these ambitions, the Green Paper identifies 10 pillars under which over 100 different policy ‘actions’ are listed, some of which are already underway and some of which are new. The table over page captures all these pillars and actions, grouping them by colour into those that are broadly horizontal, vertical and place-based in nature.

Much of the Green Paper is to be applauded. The high-level messages in the strategy are appropriate and the pillars are the right areas on which to focus. In looking beyond traditional industrial manufacturing sectors, the breadth of the strategy is suitable for a time of grand change, particularly as it recognises that much of the UK’s

economic activity is to be found in the service and public sectors. The emphasis on rebalancing the economy and prosperity across all areas of the country is also legitimate. The extra money to be invested in science, education and innovation received the most favourable support. This was seen as a very positive step not only in mitigating any potentially problematic developments around current science funding through the EU, but also giving scope to use R&D to drive innovation and the development of new products and services through an enhanced ability to commercialise the results of research. While there is much to be applauded in the Green Paper, it also lacks clarity in its purpose, which will make it hard to assess how coherent and effective its component parts will be. While it is appropriate that a green paper contains lots of ideas, some of which are more developed than others, it will be hard to evaluate how the actions across all the 10 pillars link together and, consequently, how successful they are likely to be as a whole. Moreover, many of the actions are ambiguous about how they will work in practice, or are set out as very broad aspirations. This, then, results in nervousness about the ability to turn them into reality and the quality of implementation and delivery.



Figure 8: The actions in the Green Paper

Investing in science, research and innovation	Developing skills	Upgrading infrastructure	Supporting businesses to start and grow
<p>1. Additional £4.7 billion total on R&D spending to 2020-21, reaching an extra £2 billion per year by 2020-21</p> <p>2. Review of the tax environment for R&D</p> <p>3. High-level forum on EU Exit, Universities, Research and Innovation to advise on how best to build on the excellence of UK research and innovation</p> <p>4. £100 million until 2020-21 to incentivise universities to collaborate on technology transfer and partnering with business</p> <p>5. Research on approaches to commercialisation in different institutions, including how they approach licensing intellectual property and taking equity in spin-outs</p> <p>6. A challenge prize programme to harness the potential of the UK's home-grown inventors and stimulate user-led innovation (piloted through the NESTA Challenge Prize Centre)</p> <p>7. Review of incentives created by the Intellectual Property system to stimulate collaborative innovation and licensing opportunities</p> <p>8. UK Measurement Strategy to capitalise on world-leading measurement science and technology</p>	<p>14. Continued schools reforms, consulting on plans for a new National Funding Formula for schools</p> <p>15. More higher-quality apprenticeships and introduction of the Apprenticeship Levy</p> <p>16. Skills Plan based on the Sainsbury Review to simplify vocational qualifications into a smaller number of high quality new routes and attract more industry specialists to raise the quality of higher skills training</p> <p>17. Review how to support FE colleges to be centres of excellence in teaching maths and English</p> <p>18. Clear information for technical education learners to include a way of searching and applying for courses similar to the UCAS process</p> <p>19. Encourage the uptake of STEM subjects to help meet unmet demand</p> <p>20. Comprehensive careers strategy to make it easier to apply for technical education and find information to access training throughout working lives</p> <p>21. Explore new approaches to encouraging lifelong learning, including making the costs less daunting, improving outreach where industries are changing and providing better information</p>	<p>27. 60% rise in central government economic infrastructure investment to reach £22 billion by 2020/21</p> <p>28. Better institutional framework with longer-term budgets and the creation of the National Infrastructure Commission</p> <p>29. Infrastructure and Projects Authority to support the more effective delivery of government infrastructure priorities</p> <p>30. Infrastructure and Projects Authority to lead review how government, working with industry can improve the quality, cost and performance of our infrastructure.</p> <p>31. Chief Secretary to the Treasury to chair a new Infrastructure Delivery Ministerial Group which will oversee the delivery of the government's infrastructure commitments</p> <p>32. £40 billion UK Guarantees Scheme to help projects raise finance from the capital markets through Treasury-backed guarantees for infrastructure bonds and loans</p> <p>33. Using private finance to deliver public assets through the Private Finance 2 model</p> <p>34. Mayoral Combined Authorities will be able to borrow for investment (government also consulting on a new lower borrowing rate for local government infrastructure projects)</p> <p>35. Regional strategic transport bodies such as Transport for the North and Midlands Connect will help to ensure that transport projects are more closely linked with community economic priorities</p> <p>36. Support for roll-out of smart ticketing across multiple transport types and development funding for major upgrades to regional connectivity, including Northern Powerhouse Rail and the Midlands Rail Hub</p> <p>37. £2.5 billion to improve flood defence and resilience</p>	<p>45. Patient Capital review to assess how to help growing innovative firms obtain the long-term patient finance they need to scale up</p> <p>46. £400 million in the British Business Bank to catalyse later-stage venture capital investments by the private sector</p> <p>47. £13 million of funding for the Productivity Council to provide leadership and advice across the business community</p> <p>48. Corporate Governance Green Paper to strengthen links between executive pay and long-term company performance</p> <p>49. Minister for Small Business to take on the role of Scale-Up Champion, overseeing a task force to support high-growth scale-up businesses across the UK and to build peer-to-peer business networks to improve productivity, working with Local Enterprise Partnerships, Growth Hubs, the ScaleUp Institute and other partners</p> <p>50. Explore how data such as that held by Companies House and HMRC can be used to identify and target support to scale-up businesses</p> <p>51. Build on the work of the British Business Bank and with the Business Growth Fund to raise awareness of equity funding, diversify funding streams and increase the supply of finance for growing businesses</p> <p>52. Support for the development of B2B ratings and feedback platforms to make it easier for SMEs to determine the quality of business advice and support services provided to them by other firms</p> <p>53. A review into entrepreneurship by the Chief Entrepreneurial Adviser to assess the support currently available and learn from international best practice</p>
<p>9. Case for a new research institution to act as a focal point for work on battery technology, energy storage and grid technology</p> <p>10. Industrial Strategy Challenge Fund (eg robotics, clean energy and biotechnology) via UKRI</p> <p>11. £100 million until 2020-21 to extend and enhance the Biomedical Catalyst</p>	<p>22. Develop joined-up authoritative view of sector-specific skills gaps</p>	<p>38. £450 million to trial the deployment of digital signalling and plans for digital train control technologies as part of accelerating the digital modernisation of railways</p> <p>39. Support for connected and autonomous vehicles by establishing a new testing ecosystem, using both controlled and real-world environments</p> <p>40. £1.9 billion National Cyber Security Strategy to make the UK the safest place to do business online</p>	
<p>12. Science and Innovation Audits in eight new locations across the UK to help develop the evidence base of their research strengths and innovation capability</p> <p>13. Place Intellectual Property Office representatives in key UK cities starting with pilots in the Northern Powerhouse and Midlands Engine</p>	<p>23. Consider how to enable the specialist maths school model pioneered by Exeter and King's College London to spread across the country</p> <p>24. Measures to improve take-up of mathematics and close large regional imbalances based on Professor Sir Adrian Smith's independent review of post-16 mathematics</p> <p>25. £170m of capital funding to the creation of prestigious new Institutes of Technology to deliver higher technical education in STEM subjects and meet the skills needs of employers in local areas.</p> <p>26. Actions to address differences in skill levels between different areas to help drive economic growth and opportunity throughout the country</p>	<p>41. Using infrastructure to take account of the balance of spending per head between different regions, prioritising the highest value-for-money projects to address productivity weaknesses across the country, and unlock the benefits of agglomeration economies</p> <p>42. Support for key road investments (M60 North West Quadrant, A66, A303, Oxford to Cambridge, Lower Thames Crossing)</p> <p>43. Mayoral devolution deals with cities and regions across England handing over control of a consolidated transport budget and 30-year investment funds</p> <p>44. £1.1 billion of funding for local roads and transport</p>	<p>54. Work with British Business Bank and ScaleUp Institute to understand and address the relative weakness of venture capital funding and entrepreneurship networks outside the South East and the supply and demand-side causes of lower rates of equity deals</p>

Horizontal actions

Vertical actions

Place actions

Improving procurement	Encouraging trade and investment	Delivering affordable energy and clean growth	Cultivating world-leading sectors
<p>55. Committed to target to ensure a third of total government procurement spend is with small businesses by 2020 (directly and indirectly through supply chains)</p> <p>56. Review led by David Connell to improve the Small Business Research Initiative (SBRI) by harnessing innovative ideas and solutions from SMEs to address public policy challenges</p> <p>57. Roll out the 'balanced scorecard' approach recently developed by the Cabinet Office across all major central government construction, infrastructure and capital investment procurement projects over £10 million</p> <p>58. Trial different aspects of designing and gathering supplier feedback in public sector procurement</p>	<p>61. Double the capacity UK Export Finance is able to provide and increase fourfold the number of foreign currencies that it supports</p> <p>62. Make it easier to access government support through a new digital platform to help exporters and investors: great.gov.uk</p> <p>63. Department for International Trade discussing market access issues with third countries</p> <p>64. Establish a series of working groups with key trade partners and hold discussions to build future trading relationships (eg with Canada, China, India, Mexico, Singapore and South Korea)</p> <p>65. Convene consortia of companies to create a more active 'Team UK' approach to winning overseas contracts</p> <p>66. Department for International Trade to review lessons from inward investment promotion agencies across the globe to create a more strategic approach to inward investment</p> <p>67. Work with behavioural insights experts and use HMRC data to improve our targeting of potential exporters</p> <p>68. Explore how to maximise the opportunities that a UK presence at existing international trade fairs offers for businesses</p>	<p>71. Limit policy costs on energy bills (so far by up to 80% for the most energy-intensive industries)</p> <p>72. Double support for energy innovation</p> <p>73. All energy suppliers to offer interactive smart meters to every household and small business site by the end of 2020</p> <p>74. A long-term roadmap to minimise business energy costs</p> <p>75. Review of the opportunities to reduce the cost of achieving decarbonisation goals in the power and industrial sectors and to ensure markets and networks operate as efficiently as possible in a low carbon system</p> <p>76. Emissions Reduction Plan to provide long-term certainty for investors</p>	
<p>59. £800m Defence Innovation Fund and procurement reforms including a Defence and Security Accelerator to enable SMEs and non-traditional suppliers to bid for defence and security contracts more easily</p> <p>60. Act on the Accelerated Access Review to increase the uptake of innovative new treatments in the NHS</p>	<p>69. Explore where there are sectors which could benefit from support to create trade fairs, in particular in emerging sectors such as the innovative technology industries</p>	<p>77. Review the opportunities for growth from the energy sector and the opportunities for the UK</p> <p>78. An additional funding of £270 million to help accelerate the transition to ultra-low-emission vehicles on top of the £600 million already committed</p>	<p>79. Expand the Challenger Business Programme to remove barriers that stop innovative businesses from thriving in the UK</p> <p>80. Develop sector deals (early work on life sciences, ultra-low-emission vehicles, industrial digitalisation, nuclear industry, the creative industries, and other sectors invited to organise behind strong leadership to address shared challenges and opportunities)</p>
	<p>70. Join up trade and investment promotion with local areas, with area-specific trade missions working with local areas to highlight opportunities</p>		

Driving growth across the whole country	Creating the right institutions to bring together sectors and places
81. Tourism Action Plan sets out actions to drive growth in inbound tourist spend across the whole of the UK	
82. Additional £1.8 billion from the Local Growth Fund for a new set of Growth Deals between government and Local Enterprise Partnerships	90. Local Enterprise Partnerships established in all parts of England
83. Midlands Engine strategy to be launched	91. Mayoral Combined Authorities established as part of Devolution Deals
84. New funding to allow better coordination of local economic plans with infrastructure investment	92. Full devolution of business rate revenues to local authorities in England
85. Government to take account of the varying infrastructure needs and opportunities in different regions	93. Maximise the benefits that 'anchor companies' bring to an area by developing new policies to support the growth of UK supply chains
86. Major infrastructure improvements which will help to drive growth across the country, including supporting the development of proposals for the Midlands Rail Hub and Northern Powerhouse Rail.	94. Department for International Trade to review its role in inward investment and how it sets its priority investments, including reference to the impact on local areas with productivity gaps
87. Work with local areas to test approaches to closing the skills gap (from early years education and the retention and attraction of graduates, to measures to drive the take up of apprenticeships)	95. Cabinet Office review of the location of government agencies and arms-length bodies, with potential relocation where they could help reinforce a local cluster and support private sector growth or where cultural institutions/assets could be better used to support local areas
88. Use some of the new R&D funding to create competitive new funding streams to back clusters of innovative businesses that support and develop world-class research and innovation strengths in local economies, and provide commercialisation funding to allow universities to work more with local businesses	96. Review how to leverage government and research council laboratories to drive local growth, including their role in supporting wider innovation districts and whether surplus government land or buildings could be used to support innovative businesses around them
89. Work with local areas to identify and help develop industrial and economic clusters of businesses, and local specialisms, ensuring the right institutions are in place with the powers to help support local areas of economic strength	97. Support to develop networks of universities where they want to come together to improve commercialisation (eg groups like the N8, SETSquared and Midlands Innovation), including the possibility of joint investment funds
	98. Work with local government to review how to bring more business expertise into local governance, and improve links between councils and the private sector (eg by creating a modern Alderman-type role within local government)
	99. Explore further devolution deals for our largest cities
	100. Local Government Association to work with new Mayoral Combined Authorities to build up administrative capacity, for example in transport planning and economic development
	101. Local Enterprise Partnerships to review their role in delivering local growth and examine how to spread best practice and strengthen, including extending the support available from the What Works centre for Local Economic Growth

But the most problematic aspect of the strategy is that it lacks clarity on whether it is a strategy of more gradual, continual improvement, or one of transformational change. Our observation is that both incrementalist approaches – for example, around supporting businesses to start and grow – and much more radical ideas, including those empowering local areas to tackle place-related inequalities, can be found in the strategy. This is a worrying tension around the purpose and ambition of the strategy, which it is critical to resolve. Without doing so, we will be left asking what the purpose of an industrial strategy for the UK should be at this point in time, given the particular set of circumstances the country faces.

We asked each of the policy lab participants to come up with three goals that they would like to see the strategy deliver. The first thing to note is that some of the goals are at different 'levels', some more strategic or multi-faceted than others. So 'improve productivity and growth' would reasonably be expected to rely on (or include) a goal around 'improve skills'. Linked to this, in terms of the 'logic model' that might underpin a theory of change, some of the goals are more about inputs (eg skills), while others are about processes (encourage innovation), outputs (more manufacturing) and the ultimate impacts that all living in the country might experience (more even spread of wealth, better social cohesion). We return to both of these points later in commenting on the need for a clearer setting out of how change will be brought about through the strategy. More strikingly, reducing inequality, spreading wealth and building social cohesion was mentioned in some way by almost all of the policy lab participants. This is notable in that these types of goals are not often seen as the purpose of an industrial strategy.

With this in mind, it is possible to see the broad set of pillars in the Green Paper and its 100-plus actions as being a mix of measures designed to meet quite different purposes in different ways. Put another way: **Is the purpose of the industrial strategy to mitigate the worst risks of leaving the EU by using largely incremental 'continuous improvement' approaches to change? Or is it to reinvent the UK through more transformational changes, in order to tackle the social injustices that led to the decision to leave in the first place?**

While these purposes are related, they are also very different – and how they would be brought about is very different. In our view, it is hard to do both – hence some of underlying tensions and ambiguities in the Green Paper. Only once the overall purpose is clear will it be possible to properly assess if the set of proposed actions are likely to be successful.

There was no doubt that the UK would be capable of taking on the more ambitious purpose, having successfully navigated sizeable reinventions at various points in its history. There was also a desire that, in tackling some of the big challenges and problems related to social cohesion and inequalities (including some of the societal ‘missions’ described in the Business, Energy and Industrial Strategy (BEIS) Committee report), the UK would be able to take advantage of opportunities to progress beyond other countries in areas that will be central to economies of the future – so a strategy not just to build on what we have, or to catch up, but also to ‘leapfrog’ others, as one participant put it.

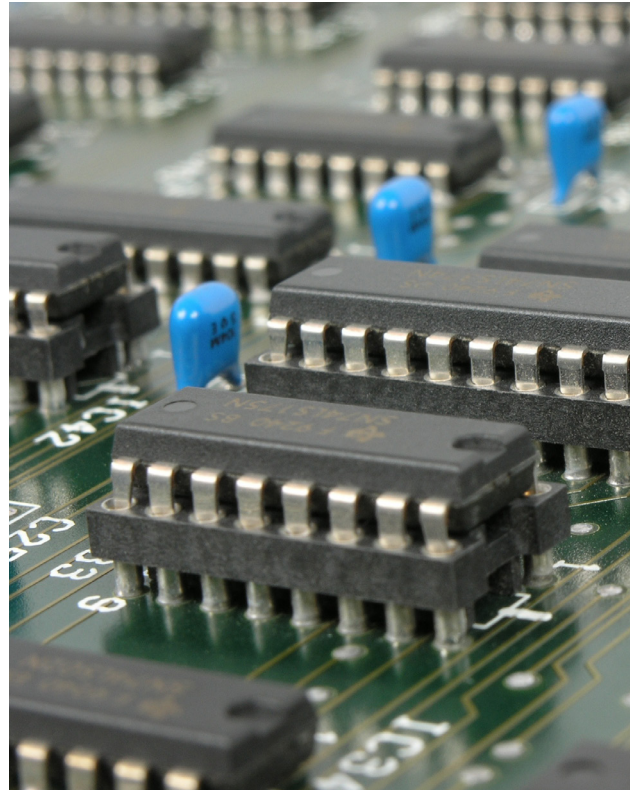
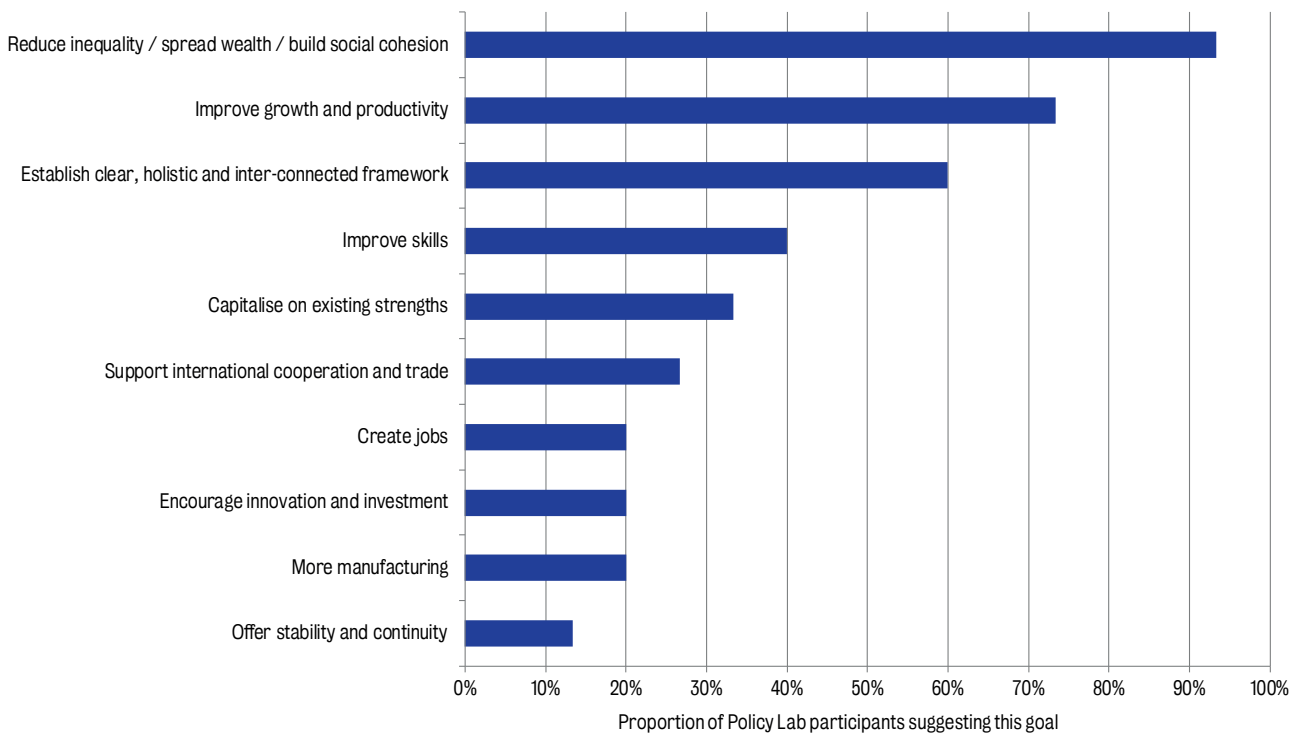


Figure 9: Suggested goals for the UK industrial strategy



Ten levers available to government: a theory of change

We noted above that it is hard to judge if the more than 100 actions in the Green Paper taken together will work. Not only is this because of the need to be clear in the overall purpose, it is also because to do so needs some form of theory of change to understand how the proposed actions will bring about the desired outcomes. Specifically, it is important to have some sort of ‘systems view’ of how the different parts of an economy work together and how changes to one part will affect another.

In examining all the literature referenced in the industrial strategy and the evidence submitted to the BEIS Committee review of the Green Paper, there appears to be very little explicit ‘systems thinking’ that has been done to understand the wide range of factors that are thought to drive productivity and place-based growth. Rather, interventions tend to be considered in silos with linear ‘cause-and-effect’ models (for example, how do tax credits affect investment in research and development, or are sector support initiatives better led at national or local levels?). We have produced a high-level systems map (over page) to try and identify the main factors driving productivity and place-based growth and how these might link together. This is not a definitive picture but a ‘first-cut’ prompt to think about how the system works and where policy interventions might best be applied. The factors in it include:

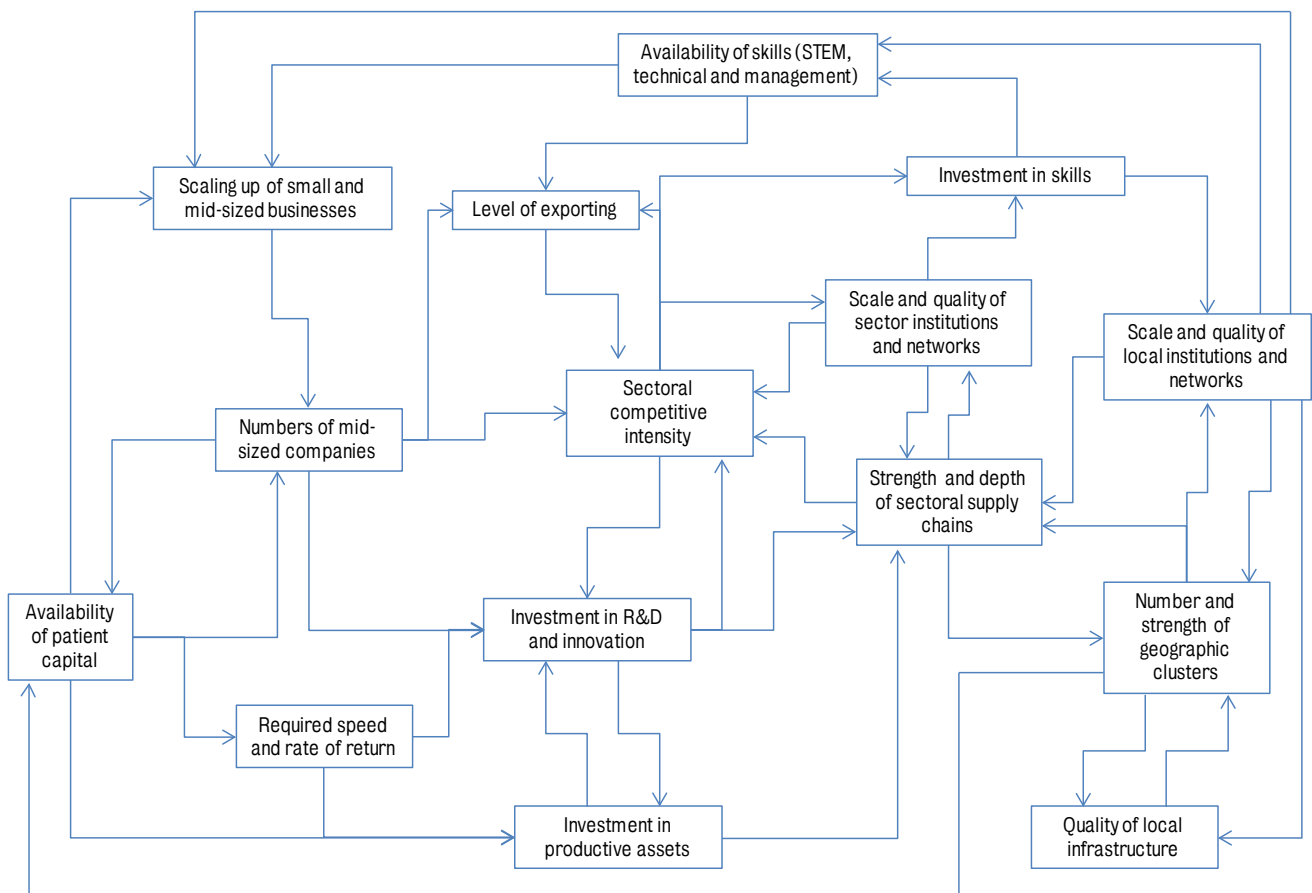
- The level of sectoral competitive intensity, which, as it increases, drives investments in skills, R&D and innovation. Sectoral competition is exemplified, for example, by one or two big ‘leaders’, large numbers of mid-sized ‘followers’, high levels of exporting, strong supply chains and, in some cases, one or more geographic clusters.
- The availability of ‘patient’ capital in the form of weighted average costs of capital and payback timeframes which encourage rather than discourage marginal investments in R&D and innovation.

- The rate at which businesses form and scale up.
- Effective local and sectoral leadership, institutions and networks.

This map was used to explore the connections between the above factors and others, and the feedback loops (positive and negative). The map suggests that the scope of the system to be considered varies depending on the goals you are trying to achieve. So if the purpose of the industrial strategy is to achieve a more radical reinvention of the UK economy so that it works for everyone, then the interactions with the wider education, local government, science and immigration systems need to be thought through and made very explicit. Even if the main purpose of the strategy were to raise productivity and spread growth more evenly to all places, it would still be important to ensure decision-making takes place at the right level. Some decisions need to be made at a national level, but others need to be made locally – for example, engaging businesses in planning the local skills pipeline.



Figure 10: The drivers of productivity and place-based growth: a system map of the main factors



The systems map suggests a number of ‘levers’ are available to government in the production of an industrial strategy. In part, these levers depend on the objectives of the industrial strategy and whether this is seeking a radical change to the shape of the UK’s economy and industry, or a more incrementalist approach.

1. **Improvements in the wider education system may be closely tied to economic growth, but will require related improvements at primary, secondary, further education (FE) and higher education (HE) levels.** A change in how sections of the population view opportunities for employment and training is also likely to be required. This includes perceptions that ‘working in industry is not attractive’ and that investment of time and money in learning new skills does not pay off. The education system could be redesigned to tackle the long tail of low basic skills and a ‘failure’ mentality, drawing on new ways of learning enabled by technology and efforts to

transform the cultural ‘narrative’ that limits educational participation and hinders lifelong learning. A sector-led discourse on the core skills needed for different types of roles could help link the skills pipeline to productivity improvement. Attitudes to careers in manufacturing or business can be targeted through strengthening design and technology and teaching entrepreneurship within STEM subjects. More could be sought from HE institutions to drive higher-level skills and the commercialisation of research, and the FE sector, probably the one most in need of revamping, is best-positioned to deliver the types of basic and technical skills training and retraining most urgently required at the current time.

2. **Inward migration is likely to remain important for the mid- and low-level jobs that keep our modern economy working.** Organisations will probably continue to be able to secure workers from overseas with high-level

skills – it is the jobs requiring mid-level and lower-level skills where a shortage of labour may first be felt. Using a quota rather than a points system would help mitigate this risk.

3. **There are opportunities to assist in stimulating markets that will generate demand for new products or services.** This could be done through demand-side regulation ('where would the UK renewables industry get to if every household was both required and supported into the long term to move to sustainable energy sources?') or through 'reshoring' public procurement spend to focus on developing specific UK supply-side capabilities.
4. **Manufacturing can be a bigger part of the economy but should not be over-relied on for job creation.** Increasingly high-value activity within manufacturing is something the UK should be actively pursuing. It brings in investment from outside the UK and has spin-off benefits that help underpin well-functioning communities. So the ambition should be to try and increase manufacturing's contribution to GDP, with support to encourage investment 'in plants and people'.
5. **There should almost certainly be a stronger focus on both supply chains and the number and strength of geographic clusters** as a way to drive sectoral competitiveness. However, the evidence base around both these areas is still patchy, so more work is needed to understand exactly how the government can provide an effective environment to make these work.
6. **Greater availability of long-term patient capital would do much to improve the level and spread of prosperity.** There is a need for further research into how to generate this.
7. **Trade is an essential driver of competitive intensity and supports improvements in innovation and skills.** As well as access to overseas markets, this needs stable foreign exchange, ideally with competitive exchange rates.
8. **Regulation can be a force for good in driving up productivity.** It can be used to encourage skills and investment in a market, and to steer



players away from a 'race to the bottom'. Regulation can be clear on the 'right ideas' that businesses should adhere to, and encourage the buyers of goods and services to pay appropriate prices that underpin high-quality standards, fair pay and sustainable practices.

9. **Place-based growth inevitably requires the strengthening and empowering of local government.** This involves long-term stability in structures and resources to enable them to develop and implement strategies in conjunction with other local partners such as LEPs and FE/HE institutions. The mayoral devolution settlements in England are one approach to this but cannot be the only model – other approaches will be needed for different parts of England alongside the arrangements agreed with the devolved nations.
10. **The effort to connect places should lead to collaboration and connectedness, not duplication or displacement.** With every RDA picking nanotechnology to invest in, and every region currently setting up MedTech initiatives, resources are inevitably duplicated or displaced across a small set of potential opportunities, each with a relatively low chance of success. Rather than everywhere trying to emulate what has turned out to be successful in places like London, Cambridge and Oxford, incentives should be provided for these highly productive areas to link with others.

Five key stakeholders: A stakeholder-relevant industrial strategy

We asked participants in our policy lab who the key stakeholders in an industrial strategy would be, and how they would want the industrial strategy to represent them. While obviously not representing the myriad concerns and priorities of these groups, the exercise emphasised the importance of situating the strategy among key stakeholders, as well as the interplay and interdependence between their interests.

Businesses

Many businesses would primarily want the strategy to help mitigate the risks of leaving the EU. In particular, multinationals will be looking to maintain access to EU markets, their skills base, and supply chains, and to preserve, as far as possible, existing market regulations and technical frameworks. Conversely, international and UK-owned businesses would fear any significant mismatch in regulatory environments and any reduction in access to capital. They would welcome the opportunity to improve their operating environment in the UK, in terms of skills and infrastructure, while hoping there could be benefits from the country's ability to support global trade, offer more flexibility in state aid and build the

availability of patient capital. Above all, the private sector would hope that the UK continues to be a business-friendly and agile place in which to invest, and that the government minimises uncertainty by being clear on what it wants to achieve and updates business on progress made.

Local government

Local government would applaud the recognition of place as a dedicated dimension of the Green Paper and, while acknowledging the necessity of a national-level strategy, would emphasise that a more granular focus is needed on how this will be designed and delivered locally (through the application and adaptation of horizontal actions in particular). There would be a strong desire to find measures that support local decision-making, recognising that devolution has its advantages but is patchy and cannot be the only model.

Inevitably, a significant contribution at a local level will lead to requests for more resources, if this is not just to be diverted from other, existing priorities. More fundamentally, if a radical strategy seeks to reinvent the way the UK economy works, this would invite a discussion of the way local government and local infrastructure is funded. The strategy would also be welcomed as a way to share more learning between areas (for example, extending the What Works Centre approach), as there is a continued lack of evidence about how to generate local growth. Finally, as the group of employers with the largest number of low-skilled and low-wage workers, local authorities themselves would need support in raising the skills base and productivity of their own organisations.





Other governments

The main concern of other governments would be the emergence of a 'UK-first' protectionist regime that stifles market access either directly through tariffs or indirectly through regulation and changes to procurement. They would not want a scenario played out where the UK has to be seen to 'lose' in its departure from the EU and then feels the need for retaliation, ultimately leading to large UK industries being driven from overseas markets. They might also be concerned about the use of exchange rates as a competitive threat.

Other governments will be happy if the UK remains 'open' to anyone, not just in terms of the letter of the law but also in terms of maintaining a spirit and language of openness. But even if this is maintained, non-EU countries seeking trade opportunities may worry about where they are in the queue for a deal. So the things they would most like to see in the industrial strategy are an affirmation of the UK's brand as a fair, honest partner; a willingness to 'upskill' the workforce; investment in R&D that could have spillover effects beyond the UK; and the encouragement of trade.

Pre-18 schools

Pre-18 schools would welcome the ambition to widen participation in learning and the greater acknowledgement of the key role that schools play in supporting skills, growth and the economy. They would then point to the additional burden that schools would bear in helping to meet the skills challenges that the industrial strategy is set to take on. This would come with a request for greater support to find and equip teachers to cater for any shift in emphasis towards technology-based skills and STEM subjects – at the moment there is potentially a big mismatch between the strategy's objectives and the availability of suitably skilled teachers. Increasing female engagement in STEM is another thing that schools would expect help with. Any attempt at redesigning the curriculum to increase the focus on design and technology subjects might be resisted unless there is a belief that this is a long-term strategy that will not be subject to future political volatility. The emphasis on league tables might be questioned, with suggestions to change how the contribution of schools to the wider economy is measured.

Public – disenfranchised/under-served communities

Disenfranchised and under-served communities would welcome the focus on supporting and regenerating areas most in need, but would hope this is done on the local community's terms (as is the case in places like Germany). Undermining such a possibility might be questions about whose interests drive the strategy, alongside a challenge that any form of wealth 'redistribution' is neither cheap nor tends to pay off in the short term, and therefore may not receive sufficient political backing.

Infrastructure is very important to these communities, so investment here would be welcomed. However, it would be important for the strategy to appreciate mobility differentials – ie those who can move and those who cannot – and how this affects their access to higher-level training and high-value employment. Gender and class inequalities also have to be seen to be tackled if this is to be viewed as truly a strategy for all. In this respect, education and skills really are central to changing lives (especially since too many people in these communities grow up feeling they are failures at learning).

One unified narrative to ‘sell’ the industrial strategy

The UK is an attractive country to invest in. It has a very strong ‘brand’ among inward investors; is a stable liberal democracy, has a strong, independent judiciary; respects intellectual property; and has a balanced approach to regulation. These are real strengths which should not be underestimated. And, moreover, they have been developed by previous and successful industrial strategies in the UK. It is important that these strengths are defended strongly as essential contributors to the success of any industrial strategy in the future.

If the government chooses to make the industrial strategy a vehicle for a radical reinvention of the way the UK economy works, then such an attempt at ambitious transformation will require it to tackle big issues that are not usually part of the equation in more narrowly focused industrial strategies. But even if the government chooses a more incremental ‘continuous improvement’ strategy, then in order to be successful, imagination and persistence will be needed to persuade everyone in the country that this strategy is for them. Clearly, for a more incremental strategy that

has the mitigation of risks from leaving the EU as a key part of its purpose, there is less need to sell that story to a wide audience. Many of the actions can be planned and delivered by a relatively small groups of actors – those from across government, as well as business leaders and the like. For a strategy that aims to reinvent the way the UK economy works, the script needs to be much more creative and effective in grabbing the attention of the public and making them want to be part of that story.

Those taking part in the policy lab were keen that the industrial strategy should engage everyone in the country in a more ambitious purpose. At best, each person would feel part of a collective effort to improve the prospects of all. However, many thought that the current document doesn’t speak to those whom it aims to help enjoy more opportunity and better prosperity: ‘Many people won’t recognise their lives in this sort of thing – it is for others, for those in positions of power’. Beyond this, it would be useful to have a vision of what ‘modern capitalism’ entails and how this affects the achievement of



change within the system. This would help the public see the purpose of the strategy as creating value not just for business owners, but also for workers, customers and other stakeholders, as well as helping to minimise negative externalities. Working some of these factors into the systems analysis may lead to identifying ways for areas to engage local populations more actively in a drive to raise prosperity.

Moreover, the risks of any change are greatest for those who are most disadvantaged. This is both in how those risks are felt and perceived in advance and also in the reality of how hard any failure in the strategy will fall on them relative to others who enjoy greater economic security. There may also be a challenge in selling the strategy to different age groups. For example, some felt that we are at a 'generational pivot' in terms of what younger generations are looking for from both work and society – something that cannot help but have an impact on the success of any industrial strategy that targets changes to the type of work people do, the ways they develop their skills, and how they feel rewarded from work in the context of what matters most to them.

The concept of a 'productive contribution for all' should be widened for the realities of the modern world we live in. Trends in technology alongside demographic and social changes mean we may face the possibility in the not-too-distant future of a world of higher productivity, robust growth and lower levels of employment. The industrial strategy should support research into the increasingly complex relationships between productivity, automation, changes in people's life roles and employment rates. What people, young and old, see as a productive and socially valuable contribution is an evolving concept, and existing economics measures do not capture this. More thought is needed about how to create and reward these diverse roles, and a sole focus on return-on-investment may be inappropriate in an environment where maintaining social cohesion is increasingly important.

Any chance of success will mean not backing away from strong levers of change. Recognising this, a wide-ranging discussion at the Policy Lab suggested that it is hard to sell a big change to the whole country without a sense of crisis. Overcoming resistance to change usually requires some sort of burning platform that everyone acknowledges and feels personally. Does such a burning platform exist to launch the industrial

strategy from? One suggestion was to try and create a sense of national threat: 'We need to get on a war footing' so that there is a common sense of purpose and a collective mobilisation of effort. An alternative, if related, framing might be around what needs to happen to secure the 'peace dividend' as the country moves through this time of profound change and heightened division. Either way, a clear narrative that works to involve and engage the public will be essential for a successful industrial strategy.

Sources for Figure 3

Brandt, N. 'Vocational training and adult learning for better skills in France', OECD Economics Department Working Papers, No. 1260. OECD. 2015.

Eunsun Cho, 'What "entrepreneurship" means to South Koreans', *The Diplomat*. 29 January 2016.

Gardner Claggett, M. 'Workforce development in the United States: An overview', National Center on Education and the Economy, 2006.

Government of France, Directorate General for Competitiveness, Industry and Services, 'Competitiveness clusters in France'. 2009.

Government of Japan, Ministry for Economy, Trade and Industry, 'New robot strategy: Japan's robot strategy – vision, strategy, action plan'. 10 February 2015.

Government of Japan, Kantei, 'Japan Revitalization Strategy'. 24 June 2014.

Hathaway, I. and Litan, R. E., 'Declining business dynamism in the United States: A look at states and metros', Brookings Institution. 5 May 2014.

'How to rev up Japanese startups', *The Economist*. 5 November 2016.

Ra, Y. and Shim, K. W., 'The Korean case study: past experience and new trends in training policies', SP Discussion Paper No. 0931. World Bank. December 2009.

OECD, 'Employment and skills strategies in the United States, OECD Reviews on local job creation. 2014.

OECD, 'Employment: Labour market and skills policies for strong, inclusive growth, United States Policy Brief. April 2015.

Research in Germany, 'The leading cluster edge competition', Federal Ministry of Education and Research. 2016.

'STI Country Profiles – United States', OECD.

'STI Country Profiles – France', OECD.

'STI Country Profiles – Germany', OECD.

'STI Country Profiles – Japan', OECD.

'STI Country Profiles – South Korea', OECD.

The Japan Institute for Labour Policy and Training, 'Labor situation in Japan and its analysis: General overview 2013/2014'. 2014.

Yoshida, K. 'Transferable skills in Japan: Recent cases of policies and practices', TVET@Asia. Issues 3. 2014.

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