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A manifesto for innovation and growth

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Headlines paper

A manifesto for innovation and growth

If the UK is to secure a lasting recovery then we have no option but to drive growth through innovation. The past 30 years have seen a fundamental shift in how our economy creates value and we are now reliant on innovation for growth. But in the run up to the credit crisis a number of structural issues built up in our economy. These are now holding us back.

Healthy businesses cannot access finance for growth. Firms with potential to drive forwards innovation are held back by weak leadership. Missing infrastructures make certain activities impossible. Weak national and local institutions make change difficult, and many organisations are struggling to exploit the opportunities presented by important, open, ways of driving innovation. These are not marginal issues which dampen growth or slow progress. They are fundamental blocks which prevent investment in the right areas and the development of the organisations with the greatest potential.

Targeted public spending is needed to overcome these structural problems in our economy and to ensure we can exploit the huge economic opportunities presented by new general purpose technologies:

- A targeted investment in capital projects and the underpinning infrastructures of innovation – in science, research and its technical application, in our digital infrastructure and to build local institutions capable of meeting business needs;

- Further efforts to address dysfunctional capital markets in order to increase both the demand for and supply of funds to innovative companies; and

- Funding a new form of industrial strategy. Developing the government's emerging approach to support innovation in areas of UK strength and to support the private sector in making new markets to exploit disruptive technologies.

The focus of the spending review must be on boosting the UK's innovation capacity. To date the Government have made a number of significant investments in innovation such as a £200m programme of Catapult Centres. But major spending decisions, such as spending billions on cutting corporation tax, reflect an out-of-date view of what drives growth.

This position is no longer tenable. The primary challenge today is the economy. Five years on from the start of the credit crisis we are still facing a contained depression. Economic growth has now been flat for three years, output is still well below 2008 levels, and even the more optimistic economic forecasts point to a weak and uncertain recovery over the next three years. Improving the functioning of the UK's innovation ecosystem has to be at the heart of both the current government and the next government's growth agenda.

The UK's growth and innovation problem

The UK has an incredible set of assets which should underpin our ability to innovate. Academic rankings consistently cite UK universities as second only to those of the USA. We have incredible businesses which lead the world in areas as diverse as pharmaceuticals, finance and the creative industries. We have a world class business services infrastructure and the UK ranks as one of the easiest places in the world to do business.

Despite these assets, the UK economy is relatively weak in the fastest growing consumer markets. We run a trade deficit in many of these key markets – such as clothing and consumer electronics. Put simply, we do not seem to be very good at making the things that people increasingly want. It seems that large parts of our economy fail to support innovation. We do not appear to be able to connect together these strengths to develop new products and services which are truly valued.

It is possible to trace examples where we are missing out on potential new markets, despite initial UK advantages. For example in the disruptive technology graphene we now appear to be running to catch up with competitor nations, despite being the country which first developed this new wonder material.

Most damning of all, the evidence is that UK businesses are choosing not to invest in UK innovation. The run up to the recession was a time when corporate cash was increasing rapidly, but investment in innovation and intangible assets levelled off as a share of private sector gross value added. Now there are suggestions that the UK market is seen as a 'cash-cow' by global corporations, rather than a location for investment.

This apparent contradiction – incredible innovation assets, but poor outputs – is the result of a weak innovation system and structural failures within our economy:

- Our financial system supports property investment and failing firms, but lets down our innovators;
- Poor management skills are holding back innovative firms;
- The institutional support for innovation has become fragmented;
- In many places, local structures have become too chaotic to deliver what businesses need; and
- There are gaps in our capacity to exploit the opportunities presented by open ways of innovating.

The performance of our economy in the boom years was flattered by an asset bubble, cheap consumer credit and high public spending all fuelled by a trade deficit and a benign global economic environment. This is no longer the case and the credit crisis and ensuing recession has stripped our economy bare, and lasting growth is unlikely to return unless we can tackle these structural issues.

The challenge is that as a knowledge economy the UK has fundamentally changed to become reliant on innovation. This set of structural issues is holding back our ability to innovate and with it putting at risk our position as an affluent and prosperous knowledge economy. Rather than relying on mass production, physical assets, competition on cost or low wage labour, we create value from knowledge and expertise. How we work, the industries our economy leads in, what we export and how our businesses invest for the future have all changed. It is the growth of this knowledge intensive activity which has driven recovery from the past two recessions and has the potential to do so again now.

But the shift has also changed what drives economic advantage in our economy. Any advantage that a firm holds from a particular product or service line is increasingly temporary, as others can copy and imitate. But the power of a knowledge economy comes from its ability, and the ability of our companies, to constantly renew and to continually invest to create new economic advantages.

The issue is that just at a time when the rest of the world is investing in their innovation assets we seem to be struggling. The global economy is being transformed by the rise of a new set of truly disruptive technologies – big data, the internet of things, nano-technologies, and additive manufacturing to name a few. Our future prosperity will depend on our ability to innovate to exploit the opportunities these create.

Traditional economic approaches will not unlock innovation

Throughout the recession, economic policy making has been dominated by a debate of when and how quickly to cut the deficit. Very little attention has been paid to the changes which could potentially transform our economy and deliver growth.

Tried and tested approaches to economic policy making will not work in the current environment. Our economy is facing structural issues as well as a shortage of demand. This means that any Keynesian stimulus package would be unlikely to have a lasting impact on growth since the five structural issues identified above are also limiting factors for our economy. The monetarist solution of cheap cash and low interest rates has been tried and found wanting. Despite being at a historic low, interest rates are failing to drive growth since our financial system fails to channel these funds through to support innovation. Too many companies with the capacity to invest see a shortage of investment opportunities, yet those who need to borrow to innovate are poorly served by our system.

Rather than these traditional approaches we need to consider our economy as a complex system, prone to failure. Missing and misdirected investment, weak infrastructures, poor quality institutions, missing skills and poor linkages can all disrupt how our economy brings together the components needed for successful innovation. Strong leadership as well as collective action is needed across the public and private sector to turn this around. Central to this will be the state embracing its role as an enterprising enabler of change.

Investing in the infrastructures which underpin innovation

Given the structural issues in our economy, we need public investment to re-build the architectures which link our economy and underpin innovation:

- **Protection for science, research and technology spending.** The 2010 Spending Review rightly recognised the importance of public spending on research in driving growth and it is important that this area continues to be protected. But a focus on research is too narrow – investment in facilities and support for the commercialisation of new technologies is needed if we are to make the most of our strengths here, and best leverage public spending;

- **Building a digital infrastructure fit for an innovation economy.** Digital networks have impacted on all parts of our economy and this effect is only set to increase, placing new and currently unknown pressures on our infrastructure. Recent progress means that we have broad coverage of internet access, but we are behind on the next generation of high speed connections. This is an issue since these will unlock many new innovation opportunities. We need a sustained programme of public investment in this infrastructure as well as an enhanced digital inclusion agenda;

- **A regulatory regime capable of unlocking the opportunities of Big Data.** The ability to process vast quantities of information and to turn it into useful knowledge is an increasingly important driver of value and innovation across our economy. Personal data is rightly afforded strong legal protection. This is essential for building trust around data use, but these regulations also significantly limit the value that UK companies can extract from data, because they make it difficult to combine multiple sources. Public investment could help build new platforms which support the merging and analysis of combined datasets without putting personal privacy at risk;

- **A system of governance able to deliver what local areas need.** The commitment to strengthen Local Enterprise Partnerships (LEPs) is welcome. But, effort here will be wasted if it is not matched by a co-ordinated agenda to improve the environment within which LEPs operate. Local policy structures could be simplified and rationalised around LEPs, while central support for LEPs will also have to increase if they are to effectively support innovation in all areas of the UK;

- **Change is needed to ensure our financial system better channels funding to the organisations in our economy with the greatest potential.** Ultimately the performance of our financial system will depend on private sector development of new business models to value and invest in innovation. It is essential that we grasp the opportunity presented by the new Business Bank and the currently nationalised banks to support this change. The Business Bank must exploit its low cost of capital to develop and test new instruments to promote lending to innovative SMEs.

A modern approach to industrial policy

In recent years, UK industrial policy has enjoyed somewhat of a renaissance. It has returned to prominence with a new focus, shifting from largely unsuccessful attempts to alter the fortunes of declining industries and using incentives to move jobs around the country. The focus instead is on areas of economic strength, removing barriers to growth, building consensus for action and linking different public and private initiatives.

This change is important. But, industrial policy must also develop to focus on economic renewal and innovation in these areas. To support this, our research has identified seven ways in which innovation ecosystems tend to fail. We would expect any well functioning innovation ecosystem to perform strongly against all of these criteria, so any weak points should be priority areas for action:

1. Is the industry investing in innovation?
2. Does the industry have the infrastructure it needs to develop?
3. Is the industry well linked? (both internally and externally)
4. Does the industry have a strong mix of intermediary institutions?
5. Does the state operate as an enterprising enabler in this industry?
6. Does the industry have the capabilities to sustain its own development?
7. Are there system risks facing the industry, or are external factors creating new opportunities?

The provision in the 2013 Budget of a £1.8bn fund to support this industrial policy agenda was an important step forwards. However, spread over its ten year horizon and across at least eight industries, this policy will not be enough to deliver meaningful change across our economy. In addition to support for delivery, we will need to invest in a strong team of policy makers able to work across government and the private sector to build the capacity for this type of activity and to target investments.

But we must not limit ourselves to a focus on existing strengths at the cost of support for new areas of opportunity. Many of the markets with the potential to pull the UK out of recession do not yet exist. It is the emergence of these new markets which drives the key economic dividend from innovation.

Incremental improvements in products and services can be handled within existing markets. The market for a new, faster, or more energy efficient, car is very similar to that for existing cars. But radical innovations often do not fit existing frameworks. Totally new goods and services, new types of business models and new industrial processes create a demand for new types of economic relationships, underpinned by new markets.

In practice, markets are highly complex entities and their development can be prone to failure. They do not always form instantly, even when there is a potential supply and demand for a product. This is especially the case when products are either new, untested or complicated. Many markets form slowly over time, shaping both the way consumers engage with a particular product and how it is supplied. Most markets are highly complex social and economic entities, dependent on many individuals, organisations and platforms.

While market formation is a primarily private sector activity, the operation and choices of the public sector can transform how markets develop. An enterprising state which can strategically manage this area could help to unlock new opportunities for innovation across our economy. From analysis of existing markets and of five developing markets (tele-health, 3D printing, self-driving cars, peer to peer finance and low carbon energy), we have developed seven principles of market making:

- **Invest in business foresight, not only technology foresight.** Government should not solely focus on future technologies, but also seek to understand the needs and challenges faced by businesses. Focusing on new markets means looking at the business applications of future technologies and ideas, particularly those that meet current or potential economic need;

- **Support markets rather than trying to create them from scratch.** Government should not try to second-guess the private sector. Instead it should focus on supporting entrepreneurs who are experimenting with new technologies and business models, but are facing constraints and challenges around legislation, legal rights, or other policy issues;

- **Look to support changes in consumer behaviour.** The receptiveness of consumers to new ways of accessing services can be critical in the formation of new markets. The public sector can play a major role in ensuring the domestic market is receptive to new products and services;

- **Look beyond funding.** While the targeted use of funding is an important element of the market making agenda, many of the most important tools available to the state are broadly cost-free. The state as a legislator, regulator, a convener and an enforcement agent can be tuned to support the formation of new markets;

- **Work across the whole of government.** This is not an agenda that can be confined to one department. Unlocking the opportunities associated with 3D printing, for example, will depend on action across multiple departments and agencies;

- Leadership matters. Where the public sector has the confidence to invest in and support a new market it should embrace the opportunity. Many investments are likely to fail, either because they choose the wrong areas to focus, or because of implementation failures. However, fear of failure or criticism that investments may be in the wrong area must not result in muddled or confused policy making.

Delivering public support for innovation in an age of austerity

The UK economy has a growth and innovation problem. If we are to recover from recession then the focus of this Spending Review must be on unlocking innovation. This will mean targeted spending to remove structural problems in our economy to ensure we can exploit the opportunities presented by new general purpose technologies. If we are to secure a lasting recovery, then it is essential that all parties place this innovation-led vision at the centre of their thinking about how to support our economy at the next election.

A change in emphasis will be required across the public sector. Economic policy must become consistently built around how to support innovation. This must include:

- Encouraging all public organisations to set out a clear view of how they support innovation in our economy **– an innovation audit of the public sector**;
- **A new approach to policy appraisal** which assesses the impacts of policies on our innovation ecosystem;
- Developing the **Regional Growth Fund to have a specific innovation remit**; and
- Consistent increases in the use of **tools to support innovative procurement** such as SBRI.

However, tackling the deep-rooted structural issues in our economy will also require a major programme of investment. It is essential that the 2013 Spending Review starts this process with a £2bn programme of investment in innovation:

- Science and research spending is a key public input into our innovation ecosystem. But the approach taken in the 2010 Spending Review to protect the science budget in cash terms masked cuts in capital funding, and created a false distinction between these activities and spending on technology or other investments that help us to exploit our science and research base. Instead we need a commitment to **keep public spending on science, engineering and technology constant in real terms,** implying a cost of £180m for 2015/16;
- In addition, the government should set aside a further £300m **to create the next set of world class university research facilities**. This programme should build on the current attempts to promote collaborative facilities partnerships between the public and private sectors of the UK Research Partnership Investment Fund;
- A sum of £100m could **double the current deployment of the next generation of domestic broadband connections**. If this was managed in a way to also support uptake and usage, this could help to ensure that we start to catch up to our competitors on this important agenda;

- Finally, investment is needed to ensure that public policy can deliver a sophisticated approach to industrial policy, and can ensure our firms are able to exploit the opportunities and develop markets around new disruptive technologies. This activity will require support from across government, and additional resources in three areas:

    - BIS – in order to ensure that the department can effectively focus on, and has the resources to lead this agenda, it must be protected from cuts in real terms. This would require **an additional allocation for BIS of £180m**[1].

    - Regional Growth Fund – has developed as one of only a small number of large scale mechanisms through which central government can deliver effectively targeted investments. **A new £1bn round of investments with a specific innovation focus is needed**.

    - TSB – as the only organisation with the capacity to operate as a delivery body for this innovation agenda, the TSB is the natural home for this agenda. However, **this developed role will require a major increase in activity and we propose an increase in budget of 50 per cent, or £220m.**

It is essential that the 2013 Spending Review prioritises growth. This will depend on finding the £2bn to support this investment programme. To fund this, the government much choose between a modest delay in austerity measures, the role back of expensive and ineffective economic policies and the broadening of the remit of the review.

The success of the government's fiscal consolidation will depend on economic growth. Our analysis suggests that if this investment helped to drive an increase in economic output of only 0.1 per cent it would have paid for itself through increased tax revenues within three years. In practice the success or failure of the governments' economic policy will be measured in much greater swings in GDP. There is a case for delaying austerity measures to tackle these issues which are holding back growth.

To date, the coalition government have a mixed record on support for innovation. They have demonstrated an ability to support innovation and to tackle these issues in our economy though the Catapult Centre programme, funding for new models of capital partnerships between universities and business, the planned Business Bank and consistent increases in funding for the Technology Strategy Board as an innovation delivery agency. The attempt in the 2011 Research and Innovation Strategy for Growth to present many of these activities as part of a coherent ecosystems approach is also an important step.

However, the big spending decisions and major investments have too often lost sight of this

[1] This figure excludes the £5.5bn spend of BIS on Science, Engineering and Technology, already counted above.

subtle appreciation of what could unlock growth and innovation in our economy. Cuts in corporation tax, the re-introduction of enterprise zones, increasing capital allowances, the freezing of fuel duty, and small cuts in national insurance contributions are all very expensive policies which reflect an out of date understanding of our economy and are inherently wasteful.

A common feature of all of these policies is that they seek to tweak the costs of doing business in the UK. But, marginal changes in price will have little impact on innovation performance, or the attractiveness of UK companies as global partners for innovation. Innovation is about creating new and different products, services, processes, business models and areas of expertise. These are by definition unique, and therefore not price sensitive.

Alternatively, if the government are unwilling to unravel these policies or further delay austerity measures then the only option is to broaden the terms of the Spending Review. The sharpness of spending cuts across many areas of government makes it more difficult to free up public resources to invest. The government have committed to a specific cut in current and capital budgets for 2015/16, and the protection of spending on the NHS, schools and international assistance. Under this framework the £2bn investment programme will imply a further 1.1 per cent cut across other un-protected areas. The current reluctance to consider cuts in portions of these budgets increases the scale of the challenge.

Redirecting resources towards the priorities set out in this Submission has to be part of a bigger discussion on tax and spending which is beyond the scope of this report. However, the recent IFS Green Budget points out that significant sums could be raised by taking a more consistent approach to welfare benefits and by increased taxation of the well-off. For example, extending means-testing to some pensioner benefits such as the winter fuel allowance and TV licences could raise between £1.5 billion and £2 billion in 2015-2016, while increasing council tax bands for the more expensive housing could generate another £2 billion.

Half a decade on from the onset of the credit crisis, the UK economy is still failing to consistently deliver growth. An innovation led recovery is the only plausible route to sustained prosperity. Public policy must now remorselessly focus on removing the structural issues in our economy which are holding us back, and on unlocking the opportunities presented by new disruptive technologies.

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