





FOREWORD



This Government believes technology-based innovation will be one of the key drivers of the private sector led economic growth that Britain so urgently needs. The dynamics of the global economy have been changing for some time,

with technology and innovation at the heart of new global economic opportunities.

For well over a century, the shape of successful business remained largely the same. They invested heavily in capital and raw materials, grew slowly and then dominated markets for generations. In recent years, that model has been blown apart by high-growth, high-innovation firms.

It wasn't long ago that technology companies like Apple and Google didn't even exist. Now each one has a market value of over \$100 billion. This pace of growth is accelerating exponentially. Companies such as Facebook, Twitter and Skype are worth billions of dollars and reached a global scale more quickly and with less capital than any businesses before.

In the UK, we are proud of a number of world-class technology leaders. The hardware company ARM has been a great success story, with their technology powering 95% of the world's mobile handsets. Autonomy, a software firm which grew out of Cambridge's engineering labs developed from a two-person start-up to a \$7 billion business in just 13 years.

We recognise the need to develop an attractive environment for start-up technology firms which can match the best in the world, so that the next Google or Facebook will be based in the UK. That is why we need to build the right conditions now to get ahead of our competitors and to attract venture capital investment and entrepreneurial talent.

As with any sector of the economy, a competitive tax system, regulation that encourages innovation and enterprise, open and fair markets, and access to skilled people are vitally important for technology businesses. Since the Spending Review the Government has been setting out how we will develop this broader framework. We need to ensure that we have both the right environment for technology businesses today, and that we are capable of nurturing the technology businesses of tomorrow.



Support for science and research is a top priority, to build upon one of the UK's notable strengths. That's why we protected the science budget in cash terms in the Spending Review outcome. But we need to do more to deliver business opportunities from our research capabilities. Building on the success of our research base requires innovation support that is strategically targeted at bridging the gap between idea generation and commercial success in global markets. We are therefore investing more than £200 million over four years in a network of Technology and Innovation Centres to support the commercialisation of new technologies by businesses.

However, we recognise that we need to go much further – for example by opening up the ICT procurement system to SMEs, by looking to make the Intellectual Property framework more conducive to creativity and innovation, and making the UK the most attractive place in the world to start and invest in innovative technology companies.

In this blueprint, we begin a process to improve the UK's ability to turn big ideas into big successes. We highlight what we're doing to turn our world-class research into world-class products and businesses, and we mark the path forward with important milestones for the coming

months. We recognise that we have more to do to create a world leading framework for technology, but we are committed to achieving our goal.

David Cameron,
Prime Minister



INTRODUCTION

The aim of this document is to send a clear message to innovative technology companies of all sizes, both established and emerging, that we are committed to making the UK Government the most technology friendly in the world.

In the current macroeconomic climate and in the context of the Government's efforts to reduce the deficit, we need to drive the economic growth of the future. High-growth, high-tech and innovative businesses are key – they help drive productivity growth, create opportunities to export and help drive the creation of new skilled jobs.



The Government is acting to reduce and remove barriers and incentivise and encourage technology innovation across three areas:

- Getting the basics right and using all available policy levers to create the right **framework for enterprise and business investment;**
- Getting behind those industries where Britain already possesses and has the clear potential to maintain **competitive advantage;** and
- **Making it easier for new businesses and innovation to flourish** and helping to bridge the gap between innovation and commercial success.



All of these efforts will help a new innovative and high-growth economy emerge in the UK, one:

- with a **framework** within which high-tech and innovative businesses can drive toward their own success;
- that seeks out global opportunities and tells the world **Britain is open for innovative businesses**;
- that **helps high-tech and innovative businesses grow** with support from the market and, only where necessary, government; and
- where a **technology-friendly Government** has procurement processes open to SMEs and innovative technology businesses.

This document outlines a series of measures that we will take to get Britain on the right path to a high-tech future, including:

- introducing a new **Entrepreneur Visa** to make sure that if you have a great business idea, and you receive serious investment from a leading investor, you are welcome to set up your business in the UK;
- an **independent review of the intellectual property framework**, including considering whether there are benefits in a US style 'fair use' copyright provision; and
- launching a new **'peer to patent' system** which draws on the expertise of people across the globe to help maintain patent quality.



BUILDING A FRAMEWORK TO MAXIMISE THE UK'S INNOVATION POTENTIAL

We are creating the framework that incentivises and encourages innovation. Technology businesses, like all other businesses, require a stable and predictable policy framework within which to invest and grow.

The Government is working to ensure that this framework will be clear and consistent in encouraging high-tech, innovative businesses.

TAXATION

The Government aims to create the most **competitive corporate tax system** in the G20 and it took immediate action in its plans for reducing Corporation Tax. From 2011:

- the small profits rate will be reduced from 21% to 20%; and
- the main rate of corporation tax will reduce from 28% to 27%, followed by year on year reductions to 24% in 2015.

The Government has also asked the Office of Tax Simplification to undertake two reviews, on tax reliefs and Small Business Tax Simplification. This work will be an important step towards creating a tax regime which better supports investment, productivity and growth.

But there is more government can do to encourage innovative businesses. **As part of our approach to reform we will consult with business later this autumn on the taxation of intellectual property, the support that R&D Tax Credits provide for innovation, the potential for creating a Patent Box and the proposals of the Dyson Review.**

THE RESEARCH BASE

Government investment in science and research sustains a strong, productive research base which is responsive, flexible and dynamic, and which delivers economic benefits through higher levels of GDP, productivity and employment. This is why we are ensuring the UK remains a world leader in science and research by continuing support for the highest value scientific research, **maintaining the science budget in cash terms** of the Spending Review period with resource spending of £4.6 billion a year.



REGULATION

Regulation is one of a range of policy interventions that can be used to drive technological innovation. However, the time and money that businesses have to spend understanding and complying with regulation can hamper their ability to grow.

The Government is determined to find new and intelligent ways to encourage, support and enable people to develop innovative businesses or social enterprises. This will mean a radical new approach to policy making, with the **emphasis on regulation as a last, not a first resort.**

To achieve this we:

- have introduced a 'one-in-one-out' rule whereby no regulation is brought in without another regulation being cut by at least the same amount;
- are ending the culture of 'tick-box' regulation, and will instead target inspections on high-risk organisations through co-regulation and improving professional standards;

- will require 'sunset clauses' for regulations and regulators to ensure that the need for each is regularly reviewed;
- will give the public the opportunity to challenge the worst regulations; and
- are committed to bringing new discipline to the implementation of EU rules, so that British businesses are not disadvantaged relative to their European competitors and ensure gold-plating is stopped.

WORLD LEADING INTELLECTUAL PROPERTY FRAMEWORK

In a knowledge-intensive economy like ours the intellectual property framework – the rules and practices that let businesses own and protect their ideas – is crucial. We need to make sure that we can grow the dynamic businesses of tomorrow, not just support the big businesses of today. In particular, we need to **ensure that the UK intellectual property framework maximises support for technology innovation and creativity.**



We are launching an independent **review of the intellectual property framework**, including considering whether there are benefits in US-style 'fair use' copyright provisions in terms of encouraging and enabling more creative applications of intellectual property. This review will also set out recommendations to make it cheaper and easier for companies, particularly start-ups, to protect and enforce intellectual property. The review will report in April 2011.

In addition, the Government will launch a **pilot UK 'peer to patent' system that harnesses crowd-sourcing technologies** to help maintain patent quality. Under the 'peer to patent' system, versions of which are being trialled around the world, technology experts can comment on patent applications over the Internet, helping patent offices identify innovations which are genuinely inventive.



The Government has put the promotion of British commerce and international trade at the heart of our foreign and economic policy.

The Government's trade promotion and inward investment support activities, undertaken by UK Trade and Investment, are focused on targeting trade support on innovative and high growth companies to:

- maximise their export growth potential;
- optimise international returns to their investment in intellectual property; and
- use the UK's research, development and innovation base as a key attraction to potential and existing investors.

ENTREPRENEUR VISAS

The Government is committed to **making the UK the most attractive place for entrepreneurs to turn their aspirations into real innovations.** Over half of all Silicon Valley companies that started-up between 1995–2005 were founded by people born outside America. The same cannot be said of Britain. For even as net migration to this country reached the hundreds of thousands a year over the past decade, not enough was

done to attract the next generation of wealth creators and job makers.

The Tier 1 immigration route through which the best and the brightest are supposed to come to Britain has failed to a great extent. Home Office published research showed that a third of Tier 1 economic migrants are doing unskilled work. Whilst the government introduces a limit and reduces non-EU economic migration, the existing Tier 1 system will be reformed to make sure that it is genuinely a route only for the brightest and the best. When so many existing Tier 1 migrants are doing unskilled work, we know there is plenty of room to cut immigration while allowing more, not fewer; entrepreneurs into the country.

We will introduce a new Entrepreneur Visa to make sure that if you have a great business idea, and you receive serious investment from a leading investor; you are welcome to set up your business in our country. **With our new Entrepreneur Visa we want the whole world to know that Britain is the home of enterprise and the land of opportunity.**



SUPPORTING YOUR BUSINESS TO GROW

We will equip high-tech and innovative technology businesses with the tools they need to grow.

This means ensuring we have the right funding streams, activities and networks in place to help technology businesses establish themselves and grow in the UK and abroad.

One of the problems technology companies face is the plethora of government policies, initiatives and bodies to navigate for advice. The Government has, therefore, taken action to streamline this cluttered landscape and make it easier for companies to get the support they need.

This is why we are making **the Technology Strategy Board a key channel through which we will incentivise business-led technology innovation** in those sectors of the UK economy which present the greatest opportunity to boost UK growth (<http://www.innovateuk.org/>).

TECHNOLOGY AND INNOVATION CENTRES

Where there is the genuine potential for the UK to gain competitive advantage, we want to support business in exploiting scientific leads and gain competitive advantage in new industries. That is why we announced that over 4 years, we will provide **more than £200 million of funding to establish an elite network of Technology and Innovation Centres** through the Technology Strategy Board. The centres will enable industry to exploit new and emerging technologies, by providing a capability that bridges research and technology commercialisation, de-risking the process for business and accelerating the route to commercialisation. This will help make new technologies investment ready and able to attract venture capital or other forms of investment, shortening the time to market. Working with industry and government, the Technology Strategy Board will develop a strategy and implementation plan for the elite network of centres by April 2011.

Support for these centres, together with support for R&D, knowledge transfer; and demonstrators will enable the Technology Strategy Board to support and incentivise all stages of technology development.



To help businesses engage consumers in developing new services and applications, **the Technology Strategy Board has developed 'IC tomorrow'**. It offers businesses a free-to-use online testing ground where companies of all sizes can trial their new products. It provides registered public users with the opportunity to try out applications and services, giving potential consumers the opportunity to provide feedback and shape products before they go on sale. A wide range of content providers, such as Sony Music, Getty Images and Crytek, have already agreed to participate in IC tomorrow and will make some of their content available, allowing product and service developers to consider how they may build new services and find innovative new ways to use and commercialise the content (www.ictomorrow.co.uk).

FINANCE

Innovation rarely comes for free, and technology businesses in particular need to be able to access a range of finance suitable for their needs. The Prime Minister has emphasised the importance of high-growth companies, particularly in the technology sector. To support these companies **we will aim to create the most competitive environment in the developed world for venture capital and early-stage investment.**

If the UK is to remain competitive as a location for technology companies and entrepreneurs, we need to increase both the pool of venture capital and the size and scale of funds. At present the US invests 0.2% of GDP in venture capital, in comparison the UK invests 0.09% (Dow Jones VentureSource figures). The Rowlands' Review identified gaps in the provision of growth finance and equity funding for small businesses. Where there is a recognised market failure in the supply of finance, government has a role in targeting this finance gap.

To encourage a more enabling environment for Business Angel investing, the Government will review the impact of the regulatory framework on intermediaries within this market. The Government will also encourage its SME finance delivery body, Capital for Enterprise Limited, to work with Business Angel groups to set up a **Business Angel Co-Investment Fund** through a bid to the Regional Growth Fund. If successful, this will boost Angel investment in start-ups, particularly in areas that have depended heavily on the public sector for jobs.



To ensure a coherent, accessible programme of Government-backed equity finance products for SMEs, **Capital for Enterprise Ltd will also take on the management of all regional equity funds previously managed by Regional Development Agencies.** This will allow these regional products to be managed as a national programme. Over time, it will also allow for the effectiveness of these products to be reviewed and for streamlining to occur.

PUBLIC SECTOR PENSION FUNDS

Public sector pension funds can also play a role in filling this gap, as they do in the US, where large public sector pension funds such as the California Public Employees Retirement System (CalPERS) have been significant investors in VC funds in Silicon Valley and beyond. CalPERS has over US \$48 billion of exposure to alternative assets, around 14% of its portfolio.

There are 101 Local Authority Pension Funds (LAPFs) in the UK. It is estimated that the market value of these funds is over £130 billion, investing somewhere in the region of £3–3.5 billion pounds a year. In addition, the constitutional position of local authorities allows these funds to invest over longer timescales than many other funds. This reflects the permanence of local government

and local funding structures. Some LAPFs already invest in venture capital and start ups: the Greater Manchester Pension Fund invests about 4% of its main fund value in venture capital, whilst at the other end of the scale Brent, a much smaller fund, invests somewhere around 3% in small capital companies.

The time is now right for those responsible for preparing future LAPF investment strategies in the local authority pension scheme to look carefully at the opportunities in this important area of our economy and to see whether they could do more to increase the provision of finance to start-ups and small businesses, whilst maintaining a diversified approach to investment, which acts in the best interest of pension holders and taxpayers.

The primary responsibilities of LAPFs will remain to deliver the returns needed to pay people the pensions they have worked hard to earn and to protect local taxpayers and employers from high pension costs. Decisions whether or not to invest in any particular product, or sector will remain entirely a matter for individual pension funds. However, **there is an opportunity to consider doing more to match the investment strategies of Local Authority Pension Funds with the needs of UK start-ups,** and we encourage local authorities to consider this.



INVESTING IN INNOVATIVE COMPANIES

The **UK Innovation Investment Fund (UKIIF)** was established to drive economic growth and create jobs by indirectly investing in technology-based businesses with high-growth potential. UK Government is investing £150 million which leveraged £175 million of private investment, leading to a combined total of £325 million to invest at first closing. The UKIIF comprises two funds of funds: Hermes GPE's Environmental Innovation Fund (£125 million) focused on increasing the efficient use of resources and the development of clean technologies; and the European Investment Fund's UK Future Technologies Fund (£200 million) investing in a number of specialist technology funds such as life sciences, digital technology and advanced manufacturing (<http://www.capitalforenterprise.gov.uk/ukiif>).

Enterprise Capital Funds (ECFs) are commercially focused funds specifically designed to support businesses affected by the equity gap, which may not otherwise be able to access finance. Early-stage high-risk businesses – especially innovative technology businesses in all parts of the country – can receive up to £2 million to help them to grow and prosper. **Government has committed**

to continue with the ECF programme, committing £200 million over the next four years, and will contract with fund managers to deliver further early stage equity support to growing businesses.

FAST BROADBAND

A study by Boston Consulting Group 'The Connected Kingdom' finds that 7.2% of UK consumption is bought over the Internet, one of the highest proportions in the world. It also includes evidence on how internet use boosts innovation and productivity. However, the study finds significant regional differences and suggests the UK's infrastructure lags behind other nations. The Government has set the target of having **the best, superfast broadband network in Europe by 2015 and has committed more than £400 million** to supporting investment in the nation's broadband infrastructure. Together with the right regulatory framework, this can support private sector investment programmes and help deliver a huge step forward in our fixed and wireless networks. We will be coming forward with more details on our plans in December.

The Government recognises the benefits of early support for collaborative innovation to create the right infrastructure. The Government investment of £40 million



into the Hylas satellite de-risked a novel broadband satellite payload to the point that a UK SME, Avanti Communications, could raise the £150 million necessary to launch and operate the satellite. This will form a competitive infrastructure to deliver internet broadband to remote 'hot spot' homes and businesses in the UK from April 2011 onwards. It will also **help build a new UK capability that can compete in an emerging global market for satellite broadband** expected to be worth around £30 billion per annum by 2030.

SKILLS

The changing shape of the economy means that future growth will increasingly depend on the technology sector and the skills needed for these businesses to innovate. We are working with employers and across government to create the digital skills pool needed by business and innovators for technology exploitation and generation.

In the recent Spending Review, Government announced additional funding for adult Apprenticeships. By 2014/15, we will have in place sufficient **funding for 75,000 more adult Apprenticeships**. In 2008/9, over 8,500 people started an IT Apprenticeship but with this additional funding, **more technology-based**

employers than ever will be able to offer Apprenticeships to new or existing staff.

The Government is also encouraging businesses to work with universities in devising courses suited to today's business needs.



OPENING UP GOVERNMENT TO INNOVATION

In addition to its role in developing an appropriate framework for innovative businesses and providing targeted support for technology businesses, the Government will make the best use of technology and innovation to support the growth of UK businesses and to improve its own performance.

All of government should see innovation as fundamental to achieving its goals. This will help to deliver public services more efficiently and deliver outcomes beneficial for society and UK businesses. Working with a range of businesses and other experts, between now and Spring 2011, we will set our broader vision for innovation in a cross-Government strategy.

OPEN DATA

For too long, the Government has failed to release data that could be used by innovative technology companies. This could not only help to transform public services, but also provide substantial opportunities for new businesses. According to Dr Rufus Pollock of Cambridge University, releasing this government data could generate at least £6 billion of new economic activity.

The Government has, therefore, set out a **radical agenda for data transparency that will help catalyse the growth of innovative technology companies**. We will tackle the information barriers that prevent many small companies from bidding for contracts by publishing online all government tender documents, as well as contracts worth over £25,000 in full.

PUBLIC PROCUREMENT

The Government spends over £200 billion a year on goods and services, including almost £17 billion a year on ICT alone. This represents a huge opportunity for SMEs and producers of innovative technologies. However, too many of these businesses have been locked out due to poor information, bureaucratic barriers, and a false assumption that big is always better and cheaper:

The Government is committed to promoting small business procurement and has already introduced the aspiration that 25% of government contracts will be awarded to SMEs.

In order to meet this aspiration we will:

- Require departments to publish not only their new contracts but information for each contract as to whether it is awarded to an SME;



- Agree action with each department to contribute to the aspiration of 25% of contracts going to SMEs;
- Introduce a simplified and standardised Pre-Qualification Questionnaire that can be used across central government Departments – and encourage take-up across the public sector, including to local authorities and the NHS;
- Investigate the use of more open frameworks or dynamic purchasing systems that do not lock suppliers out of contracts for up to 4 years; and
- Reaffirm the commitment that 80% of prime contractors are paid with 5 working days and that prime contractors pass 30 day payment terms down the supply chain.

USING PUBLIC PROCUREMENT TO DRIVE INNOVATION

The **public sector in the UK is an important customer for many technology based sectors**, including healthcare and the life sciences, digital technologies and low carbon. It is also a major customer in sectors such as construction, waste and agri-food, where there is considerable scope for new technologies to drive economic growth and resource efficiency.

When government engages with business in pre-commercial stages of product development it will not only generate more effective solutions to its own issues, but also support economic growth through working with business to develop globally competitive products and services.

The **Small Business Research Initiative (SBRI) provides R&D procurement contracts to businesses to develop new and innovative products and services**, which provide innovative solutions for addressing challenges faced by the public sector with the potential for cost savings.

Going forward, through the Technology Strategy Board we plan to encourage greater adoption of SBRI across the public sector. We are also at the forefront of work to develop a European SBRI programme that could create further opportunities for innovative UK companies in European markets.



CONCLUSION

This Technology Blueprint is a commitment, and represents the beginning rather than the end. It sets out our ambition to make the UK the most attractive place in the world to start and invest in innovative technology companies. In framing this as our goal, we intend that it should act as a guide for policy and for other government activities, to ensure that these support the creation and development of technology businesses in the UK.

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