techUK informal inputs to UK Digital Strategy call for ideas

January 2016

Three weeks ago, Digital Economy Minister Ed Vaizey MP called for ideas from the public and industry on the UK’s Digital Strategy. This response provides an update on the strategy and recommendations set out in Securing our Digital Future: the techUK Manifesto for Growth and Jobs 2015-2020 and reflects the key ideas, issues and concerns that techUK members are currently actively engaged upon. Further details can be found in the many links included to documents and information on the techUK website. techUK looks forward to working with DCMS and all departments of government on the ongoing development of its new Digital Strategy.

1. In the run up to the 2015 General Election techUK published a manifesto Securing our Digital Future: the techUK Manifesto for Growth and Jobs 2015-2020. The first recommendation in that document was that the 2015 government should ‘develop a single strategy to provide strong leadership for digital across the public and private sector’ (p18). techUK therefore strongly welcomes this cross government Digital Strategy initiative led by the Department of Culture Media and Sport (DCMS).

1.1. The four point approach outlined by Digital Economy minister Ed Vaizey MP on 29 December 2015 covered i) to achieve the most productive digital economy; ii) the most digitally enabled government; iii) the most digitally supported society and iv) ‘getting the foundations right’. techUK supports this approach which closely mirrors the recommendations set out by techUK in Securing our Digital Future.

2. Context

2.1. In a highly uncertain world one of the few things that we can safely predict is that the next five years will see further acceleration in digital innovation, adoption and disruption. To remain globally competitive the UK needs to be at the forefront of that innovation both in the development and application of digital tech. The Chancellor recently warned of the ‘cocktail of risks’ that we face in a turbulent period ahead in the global economy, and global financial markets. These concerns have been reflected in recent weeks, where the resilience of the global markets has been tested. Through what could be challenging times ahead the government must not lose sight of the prize of being a world leading digital economy.
2.2. The next phase of the digital revolution will see innovations and technologies becoming mainstream that will be seen as challenging and disruptive in terms of their political, societal, economic or ethical implications. In a world of automation, artificial intelligence (AI), virtual reality (VR), predictive analytics, smart connected homes and cities, drones, autonomous vehicles and the Internet of Things (IoT) it is all too easy to cast the future in dystopia terms and talk only about what should not happen rather than what should. Policy makers must not shy away from this debate, but tackle it head on, demonstrating that we are not impotent in the face of technological innovation and that we have to power to shape and deliver a digital economy that works for everyone. The Open Letter on the Digital Economy from leading academics including MIT’s Erik Brynjolfsson and Andy McAfee is instructive on this point and should be reflected in the UK Digital Strategy.

2.3. To achieve the buy-in it requires to be effective across central and local government the Digital Strategy should be clearly linked to the key social and economic outcomes that must be achieved over the next five years. In Securing our Digital Future techUK defined these as: fixing the UK’s public finances; accelerating productivity growth; creating new high value jobs; and, including and empowering all. Digital technology has a central role to play in all four of these objectives, and techUK was pleased to see elements of these objectives recognised in Fixing the foundations: creating a more prosperous nation, launched by the Chancellor and Business Secretary in July 2015.

3. Strategy and Leadership

3.1. techUK strongly supports the decision to develop this strategy. To be effective the strategy will require Cabinet level leadership and cross-departmental engagement via the Ministerial Digital Taskforce. All government departments should have a Ministerial post that clearly has digital within its portfolio responsible for driving consistent and coordinated application of the key strands of the strategy across government.

3.2. Place the results of the Digital Strategy at the heart of policy-making and decisions on public expenditure. The Treasury’s Green Book and Impact Assessment templates should be updated to add a digital component to all economic impact assessments. Officials should be equipped with a toolkit of questions to assess whether the impact of new policy proposals right across Government will improve the UK’s standing in digital economy, the digital inclusion of the population, build the nation’s datasets, and be a step in the right direction for the digital transformation of government and public services.

3.3. Engage widely and repeatedly - there is no monopoly on wisdom. Government must remain open and engaged with all stakeholders to continually inform the ongoing development and implementation of the digital strategy. Informal mechanisms, such as regular stakeholder forums should be used to support this engagement and enable an open ongoing debate should be strengthened.
3.4. **Government should continue to champion the UK’s reputation for tech and support the whole industry ecosystem across the UK.** One of the great successes of the coalition government was the role it played in promoting the UK as a global hub of tech excellence around the world. The government should continue to champion the UK’s growing reputation as a leading innovator in tech; understand the very different needs of companies depending on their size, market and location; and support the full ecosystem of companies small and large - new and established, domestic and international - across the whole of the UK.

3.5. **Gain a better understand of how the digital economy is reshaping UK economic life.** The pace and growth of the UK tech industry, and its impact on the wider digital economy, has presented new challenges in how new forms of economic value are defined and measured. Many, including Sir Charlie Bean himself, have argued that the scale and pace of the internet revolution have rendered much of the approach to official statistics out of date. Last year’s intermid report of The Bean Review provided some welcome proposals on next steps for solving these challenges, and we encourage the Government to listen seriously to the implications of the final review to ensure that the UK has robust and up-to-date data on this vital part of the UK economy in order to inform better decision-making.

4. **Ensure a long-term stable funding base for science and innovation**

4.1. techUK welcomes the protection of the science budget in real terms between now and 2020 announced in the 2015 Autumn Statement. The UK performs strongly on fundamental science and this position must be maintained, as a global excellence in science is the cornerstone of a successful strategy for digital leadership. There is a need for further clarity on the overall funding for higher education and whether the commitment to high cost subject funding includes additional funding to reflect a high-cost subject supplement or for those students wishing to study a second degree in STEM.

4.2. As well as investing in core science the UK needs to continue to enhance support for innovation that is accessible to SMEs. techUK supports the Small Business Research Initiative (SBRI) and how it can link business with Government departments in seeking new ways to address particular challenges. Assuming competitive take-up and robust assessment, this figure should be staggered to reach £400m per annum by 2020, with a strong focus on working with growth companies. Additionally, the government should supercharge the R&D tax credit to encourage industry-led research and development. The Smart Grant programme (£55m per year) has been effective in addressing the funding gap experienced by many small innovative businesses. It provides £25,000 to £250,000 to pre-start-ups, micro, small and medium-size businesses to prove feasibility, find a potential market or develop a prototype. Any changes to Smart Grants need to be developed carefully with the needs of small innovative businesses in mind. Strengthening of the innovation base must be a key objective for the UK.
4.3. The UK must send a signal internationally to bring the best academic talent in science and technology here to the UK. The Government should look again at reinstating a replacement for the post-study work visa as a route to ensure the UK is still seen favourably as a place to study, and ensuring that talent coming out of UK universities does not then flow out of the UK. The UK should be seeking to encourage the best and the brightest who have studied in the UK to apply their skills and talents in UK based companies. However, techUK does welcome the Government’s decision to protect funding for high-cost (including STEM) subjects in real terms and extend loans to students doing a second degree in these disciplines.

5. Address immediate skills shortages, build a skills pipeline for the future, reap the benefits of gender balanced and diverse workforce

5.1. The Government needs a comprehensive approach to address the digital skills challenge in the UK, one of the most urgent policy challenges facing UK tech companies of all sizes. techUK set out eleven key recommendations on how to do this in its 2015 white paper on digital skills: techUK identifies best practice of teaching digital skills, addresses key challenges and proposes immediate next steps for Government, businesses and organisations.

5.2. techUK has welcomed the DCMS-commissioned report on digital skills published on 15 January 2016 which reflects many of the issues raised by techUK in its White Paper and provides a good basis for an ongoing Digital Skills agenda.

5.3. The implementation of the Apprenticeship Levy represents a number of challenges and opportunities for tech companies, particularly as the scope of the levy is set to affect a wider range of tech companies than had previously been anticipated. techUK seeks to be a constructive partner to the Government to ensure that the Apprenticeship approach meets the needs of tech companies that will contribute so much to the levy. techUK also encourages the Government to look at how newly created apprenticeships across different sectors can better build in digital skills into standards so that our young people are better equipped for the jobs of the future.

5.4. The Computing Curriculum is essential in helping the UK build its talent pipeline domestically. The Government must ensure that the previously announced £3.5m funding for CPD training and delivery of the new Computing Curriculum is maintained, if not increased, to ensure that our teachers have the skills and confidence they need to teach the curriculum and inspire a generation.

5.5. As the UK builds its talent pipeline domestically, a ‘smart migration’ approach must be developed by Government to ensure the evolving needs of a growing tech sector are met in the short and long-term. We encourage the Government to reject increases to salary thresholds, and be vigilant to the cumulative burden on tech business posed by changes to the Tier 2 visa (including the new skills levy).

5.6. techUK advocates driving change in the way young people and girls in particular perceive the tech industry. Government should continue with initiatives such as the
Your Life campaign and continue its support for the pan-European ‘Inspiring Fifty’ that identifies, encourages, develops and celebrates women in leadership positions within the technology industry.

5.7. The Back to Work programme has been developed by techUK & everywoman to help get women ready to return to the technology industry. These type of programmes should be encouraged and promoted by Government to ensure women develop the skills and confidence to re-enter the workplace after a period of leave.

5.8. techUK challenges industry and highlights the tech sector’s role in doing more to raise the number of women within the industry by sharing best practice. By exploring solutions to flexible working hours and unconscious bias within the tech sector, Government can get on the right path of ensuring equal representation.

5.9. techUK seeks to inform top-down policy on challenging number of women on boards and providing conditions to make a gender balanced workforce possible. We look forward to working with Government on the outcomes of the gender pay gap inquiry.

6. Ensure ubiquitous world class communications infrastructure for today and tomorrow

6.1. The fundamental importance of affordable and accessible world class communications infrastructure for the digital economy cannot be understated. Key to achieving that is a competitive market. Given the recent market consolidation and the fact that the UK is now getting close 95% superfast broadband coverage, now is the right time for Ofcom to be undertaking a strategic review in which all options are on the table. The outcome of this review will be critical in ensuring that the UK continues to benefit from world class communications infrastructure.

6.2. Superfast Broadband – Completing the deployment of superfast broadband. techUK members believe that the priority in the short term is to complete the roll-out of superfast to the final 5% of UK homes taking on board the lessons from the previous phases of the procurement programme. The nature of the challenge in the ‘final 5%’ means that a variety of technologies need to be utilised – in particular wireless and satellite networks will address scenarios directly or as a fully integrated part of a hybrid network.

6.3. Ultralast Broadband and beyond - In the debate about the future of broadband the UK must be ambitious and forward looking. There are now practical examples of how ultralast and gigabit services can be deployed on an affordable basis in various locations without significant public funds over the next few years. The policy and regulatory focus should be on market led deployment. In the debate about future broadband services it is important not to lose sight of key issues such as pace and scale of deployment, affordability and take-up - all measures on which the UK leads Europe, although more can be done to encourage SMEs to make better use of superfast broadband.
6.4. **Mobile** - Despite getting off to a slow start the UK has seen one of the fastest deployments of 4G services anywhere in the world and now has good 4G coverage in urban areas and rapidly improving coverage in lower density areas. The government has good coverage targets in place and should be seeking to remove barriers wherever possible to rapid scale deployment as mobile operators are finding it increasingly difficult to find suitable sites to deploy infrastructure. The UK is rightly investing in becoming a hub for innovation in 5G technology through the 5G innovation centre in Surrey and across other UK universities and must pave the way to ensure suitable spectrum can be put in place for 5G when appropriate.

7. **Push the boundaries on innovation in the development and use of Internet of Things**

7.1. The Government has played an active and welcome role in raising and recognizing the profile of IoT and smarter infrastructure in the UK through the Blackett Review, IoTUK, the £10m awarded to Manchester’s CityVerve Project and the recent IoT Research Hub. It is essential that the momentum generated by these actions is maintained – particularly on the benefits that smart cities can deliver in both economic and environmental terms.

7.2. Bodies such as IoTUK bring together separate Government departments. However, given the variety of different policy areas that smarter infrastructure touch it is essential that there Government is joined-up in how it approaches the development and deployment IoT. We believe that there is value in expanding the remit of the Government’s Digital Infrastructure and Inclusion Implementation Taskforce to specifically include IoT and smarter infrastructure. This should be mirrored by the Infrastructure Commission adopting smarter infrastructure as a default starting point.

7.3. The Government also has an important role in ensuring that UK industry is well represented at the EU and wider international level. Although much of this revolves around ensuring that the regulatory and policy approach allow for the innovative deployment of smart infrastructure it also has an important role to play in helping UK companies access Horizon 2020 support and funding, including that set aside for IoT Large Scale Pilots.

7.4. **City Deals** - In addition to strong central Government leadership and support, strong city leadership plays an important role in bringing together a long-term strategy and vision for their transition to a Smart City. Too often digital evangelists within the city councils do not have ability to drive change and enable to progress of the Smart agenda across the city as a whole. Whilst Government’s ability to enforce this at local government level may be limited there are times – such as during the negotiation of City Deals – where this could be mandated. This would have multiple benefits. By building digital leadership into the foundations of local authority projects it would ensure that the potential of smart cities is not lost. This would relate not just to the roll-out of smart infrastructure, including the use of existing council assets, but just as importantly the use of data gathered by that local authority – or as is often the case in cities, multiple local authorities.
7.5. New York, and the Mayor’s Office of Data Analytics (MODA) provides an excellent example of what can be achieved with a centralised and empowered data analytics team in driving forward a data-driven smart city model. Drawing together the data in a usable form from separate boroughs helped to ensure that it was on a sufficient scale both for the public sector to utilise and to appeal to the private sector. This would undoubtedly help contribute to Government policy in others areas such as digitising local government services. It would also lead to more intelligent customers for industry to engage with and ensure that services and technologies are tailored to local needs. Indeed as the recent Policy Exchange report stated, what is required is ‘smart devolution’ which can “…enable the Government’s aspiration for regional economic growth and local public sector reform to be realised.”

7.6. **Flexible regulation** - There are many different forms of smart cities – driven of course by the needs of the cities themselves. These range from data-driven cities to smart infrastructure in cities such as Songdo where smart technologies are built into the infrastructure from the very beginning and varieties that blend between the two. What is essential in all smart cities though is that underpinning these approaches are the digital networks that either gather information, regulate transport networks or send autonomous vehicles to a certain area. Clearly many of these digital networks such as mobile networks already exist and are and will be leveraged in smart cities. However, many more IoT enabled devices will need to be deployed alongside denser telecoms networks requiring more access to rooftops and land – whatever form 5G eventually takes it is likely that small cells will be required to play a crucial role. Central and local government will therefore need to ensure that the incentives are in place for the private sector to invest in these network upgrades and deployments.

7.7. **Trust and Inclusion** - Digital inclusion is a vital challenge for the UK as a whole. Industry can, does and will need to ensure that it assists in efforts to ensure that the UK population is digitally literate. There have been concerns that the increased integration of digital technologies in everyday life may widen the digital divide. This does not have to be the case. Indeed, smarter infrastructure and the IoT can assist by digitising and automating services so that resources can be targeted to those people who need the most help in getting people online. Chicago’s Smart Communities, which forms part of its Smart City programme, is a good example of this. Central and local government will need to continue to play a role both in setting the overarching strategy and in delivering digital literacy programmes. Ensuring that users trust the services that smarter infrastructure will enable is critical. Industry should be the primary lead in many of these areas and steps are already being taken by the IoT Council within techUK on principles for trust in an IoT world. There are areas however, where Government will need to play a more active role at least as partner to industry and sectoral regulators. This is likely to be case in devising consumer protection frameworks for new smart appliances – and assessing the impact of demand side response on vulnerable consumers – both actions that need to be taken in order to deploy smart grids.
8. **Make UK the best place to start and scale-up a high growth tech business**

8.1. Digital tools have made it easier to set-up and run a business than ever before and we have seen a record number of new start-ups launched over recent years. The UK needs to pursue an approach that enables start-ups to become scale-ups, adopting a philosophy that they can be ‘global from the get-go’.

8.2. Scale-Up businesses represent engines of economic growth, productivity and jobs. As the Scale-Up Institute has highlighted, high growth businesses created the equivalent of 4,500 new jobs every week, 3 times as many new jobs as the FTSE 100. All business support initiatives across central and local government should have a ‘scale-up’ lens, working with organisations such as the Scale-Up Institute to test that the latest research on what scale-ups need is applied in practice.

8.3. As [The Scale-Up Report by Sherry Coutu CBE](#) highlighted, government-controlled data sets should be made available so that local public and private sector organisations can identify, target and evaluate their support to scale-up companies, and evaluate their impact on growth. There is a real opportunity to equip Growth Hubs, Local Enterprise Partnerships, universities and private sector players to enhance the targeting of support to scaling businesses through the ability to leverage data sources and open data/API practices.

9. **Support the development of tech clusters across the UK**

9.1. The UK has a number of well-established strengths in London and the South East of England, and in recent years we have seen the emergence of new clusters, often rooted in long-standing local strengths, more widely across the UK, including in Bristol, Cardiff, the North East, Sheffield, Leeds, Manchester and more. Through the Tech City UK initiative, the Government has played a positive role in showcasing a number of regional strengths on the national stage, where tech companies on the ground are realising the benefits of emerging clusters day in day out. Whilst it would be erroneous to overstate the role of government in creating and supporting tech clusters, there is much that Government can do to support and promote their growth.

9.2. The [Tech Nation 2.0 report](#), by Nesta and Tech City UK, will be a welcome contribution to the debate on emerging regional strengths, where championing tech success in hand underpinned by new data can demonstrate to policy-makers the vibrancy of tech not just across the country but in new parts of the economy.

9.3. The Northern Powerhouse has been a big feature of the Government’s current economic approach, and techUK looks to any approach which builds in the benefits of cutting-edge technologies to its approach on key areas including transport, science and innovation (building on initiatives such as the Sir Henry Royce Institute for Advanced Materials Research and Innovation), and the role of data in devolution.
9.4. A recent report commissioned by eBay suggested that the North of England has a higher concentration of online retail businesses than the rest of the UK, and we encourage the Government to look at how regions such as Northern Ireland, Scotland and Wales can make similar gains.

10. Promote the development of a European Digital Single Market that supports innovation

10.1. **Principles to guide the development of a Digital Single Market** - Completing the Digital Single Market will open up new markets and opportunities for the UK tech sector and enable smaller UK tech businesses to scale and grow. The European Commission has unveiled a significant number of proposals designed to make this happen - not all of these proposals are seen as positive by the tech sector and there is a need for concerted and consistent engagement to ensure that the EU’s DSM initiative drives towards the UK’s objectives to make Europe more competitive. As part of techUK’s work on the Digital Single Market strategy, techUK and its German and French counterparts Bitkom and Syntec Numerique jointly published [*Eight principles to guide the Digital Single Market*](#).

10.2. **Platforms, data and cloud** - the European Commission is right to look into potential concerns related to the fundamental drivers of the digital economy, including platforms, data and cloud infrastructure. *(Responding to the consultation)* techUK has argued that in order to address potential problems, it is important to clarify the specific concerns and identify any potential evidence of harm. Whilst potential concerns should be investigated and addressed by the appropriate policy and regulatory mechanisms, this should not detract from the ambition to create a Digital Single Market in Europe. A key focus of the European Commission in the Digital Single Market should be on enabling platforms to emerge and thrive in the UK and in Europe.

10.3. **Standards** - The European Commission is looking at what more could be done to facilitate standards in emerging digital technologies. *(techUK has outlined three principles to underpin the European Commission approach)* highlighting the need for: realistic and demand-based targets, industry leadership, and a global outlook.

10.4. **Geo-blocking and e-commerce** - E-commerce is a huge opportunity in Europe, making it easier for businesses to scale and trade across borders, creating cost benefits and increased choice for consumers, and driving competition and a huge consumer surplus estimated to exceed €100bn worldwide. The UK is a leading example of thriving e-commerce in Europe with 13.5% of retail in the UK happening online compared to 7.2% in Europe and 11.5% in the US. *(techUK has commented here on the European Commission proposals)*. There are different reasons why products and services may currently not be accessible to consumers in parts of Europe, or why consumers in some parts of Europe may be charged more for the same product or service than in other parts. It is important for the European Commission to clearly delineate between legitimate reasons for differentiating product offers and product prices across Europe, and ‘unjustified geo-blocking’. *(techUK has outlined techUK the clear distinctions between ‘unjustified geo-blocking’)*
and legitimate reasons for tailoring to specific markets within the EU. techUK has made the case for the European Commission to help harmonise legislation among EU member states and unlock e-commerce across Europe, in order to create an environment where more products are available to more consumers in Europe.

10.5. The Government should work with European Commission officials to ensure the forthcoming Digitalisation 4.0 Strategy announced by Oettinger gets behind the interests of UK strengths in the digital economy.

11. Double tech exports by 2020

11.1. The UK technology industry was reported, in 2012, to deliver exports of at least £31bn. Whilst this figure demonstrates a healthy export market, the opportunity to grow further is still great. **techUK supports the government’s objective of the technology sector doubling its export value to £62bn.** This target requires a clear strategy to put in place by government along with the milestones required to deliver within the target timeframe. techUK has also recommended that government appoint a digital trade czar based in the Foreign and Commonwealth Office. Some of the challenges of meeting this export target can be supported through the following actions:

- Target support on smaller and mid sized businesses with scale-up potential that can be enhanced through growth outside of the UK landscape
- Focus on some of the technology growth sectors where UK businesses have leadership capability. Internet of Things, Healthtech, Cyber Security and Financial Services, EdTech are just some examples.
- Generic promotion of the UK tech industry to global markets to support opportunities for greater engagement, inward investment and the building of networks.
- Allowing businesses the opportunity to recruit overseas talent more easily. Workers with overseas experience help to expand sales into foreign markets
- Focus, growth and financial support for attendance of international trade missions ensuring strong representation of SMEs and, in particular, scale up businesses on these missions.
- Review of UK export regulations and the administrative burdens to ensure that we follow ‘best practice’ and efficiencies in relation to regulatory peers in other countries.
- Better coordination between UK Government Departments, ensuring that joint resource is deployed more effectively and that overseas missions and events are fully supported by all departments, not just UKTI.

11.2. The recent announcement from UKTI of a cross-Government approach to boost UK exports also represents an opportunity to introduce a single digital platform where help for exporters can be found. According to research by YouGov and Citrix, 42% of UK SMEs currently trade internationally, and of those that sell overseas, 45% do so through their own website, whilst 14% use online marketplaces. There is clearly an
opportunity to help more SMEs across the economy be equipped with greater digital capability in order to grow their businesses through exports.

12. Harness digital tech to modernise transport infrastructure

12.1. For regular users of London’s transport network the benefits of open data are obvious. TFL has led the way in making data sets open and available to third party application developers who have provided consumers with a legion of tools that make it easier and more efficient to use London’s transport network. There is still huge potential to leverage open data both across London’s transport network but there is equally an opportunity to replicate the innovations that have taken place in London across the whole of the UK’s transport infrastructure - using transport data to drive the efficiency and interoperability of the UK’s entire transport network. This should also be a central issue for the National Infrastructure Commission.

13. Promote modernisation of our financial institutions

13.1. The global financial services (FS) sector is going through its own technology revolution and UK tech and FS firms (both incumbents and new entrants) are at the forefront of this innovation. As a result we are seeing a more diverse and competitive FS sector that should also be more resilient as the risks associated with institutions being too big to fail are competed away. The UK government has played a strong role in supporting new entrants into the market however it also needs to address some of the technology challenges in more established institutions. The UK will also need to play a leading role in the implementation of new EU data protection rules to ensure that they do not hamper responsible innovation in financial services (see 21.1).

13.2. Financial Inclusion - tech is enabling new and established financial services institutions to create innovative new products that better serve the needs of unserved or underserved communities. In order to encourage and support such innovation, the recommendations of the Financial Inclusion Commission should be taken onboard by government and clear ownership should be established for financial inclusion/ education within government (preferably the Treasury).

13.3. Financial Infrastructure - the technology legacy for large financial institutions remains a problem, as continues to be demonstrated by high profile service outages. However, new technologies are providing new affordable solutions to these legacy issues. techUK has set out a clear roadmap for how these challenges can be overcome to ensure a more robust financial services sector in the UK. Government and UK regulators can play a stronger role in driving technology renewal in established FS institutions.

13.4. Open standard APIs in retail banking - the draft framework for open standard APIs in banking is now with HMT for review - government must maintain the timeline for implementation in HMT’s original proposals in order to keep the UK at the forefront
of innovation in retail banking which will deliver benefits to consumers in terms of innovation, competition, choice and cost.

13.5. **FinTech** - UK is leading the way in the FinTech revolution which has been hugely aided by positive government support. The UK is developing an innovation enabling regulatory framework that is world leading. techUK is supporting the development of a regulatory sand box that can help to ensure that regulation and consumer protection can keep pace with the development of new innovative services such as Robo Advice.

13.6. **RegTech** - Blockchain/ distributed ledger technology could provide a much more efficient and effective way to meet with the heavy burden of financial compliance regulation. It could also give regulators and government more transparency over the state of financial markets providing actionable information that can support more stable markets.

14. Bring greater scale and pace to the digital transformation of government

14.1. The Government has made very significant progress in its approach to digital government and public services transformation over the last five years and is widely regarded a world leading in many areas. The next phase needs to focus on delivering wholesale end-to-end transformation led by the centre in the form of the Government Digital Service and the Crown Commercial Service. To achieve this, the techUK would like to see further progress in four areas: strategy, skills, processes and engagement.

14.2. **Government should set out how it plans to deliver on its Digital Government ambition** The Spending Review confirms the Government’s commitment digital transformation. The focus now needs to be on delivering next phase of full scale transformation. The Government should articulate its overarching strategy for delivering the ‘Smarter State’ and the role of the tech industry to help deliver its vision. The key to this will be setting out how Government will develop the concept of Government as a Platform (GaaP). The successful delivery of GaaP requires all of the stakeholders, GDS, the departments, existing suppliers, new entrants and start-ups to work together towards the GaaP common goal.

14.3. **Developing the skills and capability to become a ‘smarter buyer’**. techUK’s survey of nearly a thousand civil servants found that 68% of civil servants saw the acquisition of more digital skills as the greatest opportunity for creating more value from tech. Equally, techUK SME members identified a lack of skills as a key barrier to entering the market with 96% of respondents stating they that civil servants did not have the right skills to understand the needs of SMEs. Our findings were echoed by the National Audit Office recent report on the skills gap in the public sector market.

14.4. The Government should develop and set out a clear plan for how it will acquire the right culture, skills and capability to become a more demanding buyer, this should include greater clarity on what the right balance should be between
insourcing and outsourcing skills to help inform the market. In the journey, Government will need to work close with the supplier base as in transitions and works towards a better skilled workforce.

14.5. Making procurement simpler, easier and more accessible. techUK recent report ‘Procuring for Innovation and Growth: making the case for British based SMEs’ which took the views of 171 SMEs experience of the public sector showed that poor procurement practices continue to act as a barrier for new entrants to the market. Our report identified the following top three barriers for SMEs (the same barriers would apply to large companies) accessing the public sector market:

- 64% highlighted onerous procurement process;
- 59% highlighted risk averse culture in civil service;
- 33% highlighted onerous terms and conditions in public sector contracts.

14.6. We believe Government should act on now and implement the recommendations set out in our report to make procurement simple, easy and accessible so that it is open to the whole supply chain, including non-traditional suppliers. The prize is a more diverse and vibrant supply base which delivers and supports the innovation public users need.

14.7. Harnessing the full breadth of the tech sector through better engagement. techUK’s survey of nearly a thousand civil servants showed that better engagement between government and industry was identified as the most important factor by civil servants for helping the public sector generate more value from industry. In response to this, techUK has developed a Three Point Plan which sets out a straightforward framework for engagement between Government and industry. We recommend that central Government departments take up this plan. The benefits are clear – allowing Government to harness industry expertise and knowledge to become a more demanding customer as well as help commissioners and policy makers experiment and innovate more successfully with technology.

15. Leverage open data and big data analytics across government based on a consistent and transparent ethical approach to data sharing

15.1. The UK is government is already world leading in its use of open data and big data analytics however there remain huge opportunities to use data more effectively across government to improve the efficiency and effectiveness of services.

15.2. There remain a number of technical, legal, operational, resource and perception challenges to ensuring the benefits of open data and big data analytics are maximised. techUK set out its views on the Big Data opportunity to the House of Commons Science and Technology Committee in October 2015 and made a number of recommendations, including:

- Undertake a Big Data Capability Audit. This audit should address understanding of Big Data, identify best practice examples of Big Data exploitation across all sectors and create a long term vision for the use of
Big Data in the UK. The audit should identify key challenges to be addressed, consider what is needed to increase public sector organisations’ awareness and understanding of the potential value of Big Data and encourage the adoption of Big Data technologies as and where appropriate. The audit should follow a similar structure and focus of the recent reviews conducted by Sir Mark Walport, Government Chief Scientific Advisor, Office of Government Science into the Internet of Things and the future of UK FinTech.

- A specialist ‘Advanced Data Analytics unit’ should be set up to “leverage data analytics across government”. This unit would include a mandate to increase understanding of the opportunities of Big Data technologies within Government, experiment with emerging Big Data technologies, and make advanced data analytics capabilities widely accessible across Government.
- Consideration should be given to how Government and industry can work together to rebalance the public debate and highlight the positive role of Big Data.
- Additional resources should be allocated to the Information Commissioner’s Office (ICO) to support public awareness raising activities in light of the increased volume and role of data across all aspects of our lives.
- DCMS and the ICO should work closely with all stakeholders (consumer bodies and businesses) to prepare for the implementation of the EU general Data Protection Regulation.

15.3 Eddie Copeland’s recent blog [10 recommendations for the Digital Strategy](#) contains some further valuable ideas in this area of how government can make better use of data.

16 Create a single criminal justice and emergency services technology strategy

16.1 There are huge opportunities for digital innovation to drive efficiencies and service improvements across the whole of the UK’s justice system that will benefit all parties involved in the system, including the general public. In its report on ‘Breaking down barriers’ techUK set out the potential for common data standards to transform criminal justice’. The report calls for urgent action and makes the following key recommendations:

16.1.1 Government should develop an ICT strategy for the Criminal Justice System that sets out what it needs to achieve through the use of technology and identifies the data and assets it will need to realise these goals. This strategy should be predicated on the use of common standards across the system.

16.1.2 The Home Office needs to urgently clarify which body has the remit to develop and set strategy and common standards across the police and criminal justice system. The chosen body should work closely with industry, the police and policy makers to develop an ICT strategy and common standards.
16.1.3 The Home Office needs to take action, as it has done previously, to mandate the use of common standards across the police service. Work to define common standards should start with defining an already recognised core set of object types based on the People Object Location Event (POLE) model, which is already in widespread use by forces and suppliers.

17 **Address the perceived and real barriers to digital innovation in health and social care.** There are few areas where there is greater potential for innovation to deliver better outcomes and huge efficiencies than health and social care. However, the barriers to innovation remain stubbornly high. Many citizens, for example, remain to be convinced why sharing data, might improve the quality and effectiveness of the care they receive. However the potential benefits to citizens, the NHS and the UK’s future public finances are so great that no stone can be left unturned in the drive for innovation in health and social care.

17.1 **Citizen engagement** - A top priority must be to ensure citizens understand and are able to experience the benefits of innovation in digitised health and social care so that they support the need for ongoing innovation. Martha Lane Fox recently set out a powerful set of recommendations to make this happen, which techUK strongly supports alongside the adoption of the National Information Board’s wider recommendations to achieve personalised health and social care.

17.2 **Information sharing** - Successful integration between health and social care depends upon safe and effective information sharing which enables the exchange of data between care settings and citizen consent for appropriate secondary uses, such as planning and research. This not only improves direct patient care, but helps providers identify and manage services and predict future demand effectively. However, we are not yet reaping the rewards of this technology. techUK published a paper in January 2016 on “Achieving a safe and effective information sharing in health and social care” which sets out five guiding principles for solving the challenge of improving data sharing across the sector while protecting confidentiality and adhering to data protection regulation.

17.3 **Make decision-makers more informed and effective customers** with a holistic view of the market. techUK has worked with HSCIC on the Local Service Provider Contract Exits to give healthcare providers a fuller view of the supplier market. Initiatives such as this should be built upon to strengthen the skill set and expertise of healthcare professionals making commercial and procurement decisions and help them engage with the full and diverse supplier ecosystem and the latest innovations.

17.4 **Interoperability standards** are essential to make integrated care happen at scale. Interoperability is key to delivering an ecosystem whereby applications, data and processes allow the right information to be available to the right user at the right time. techUK’s vision for interoperability supports the move by NHS England toward encouraging supplier systems to be more open to enable effective information sharing. There is growing industry and healthcare provider support for techUK’s interoperability.
Charter. The charter has been endorsed by NHS England and techUK is now working to share case studies of the benefits of interoperability best practice.

18 Maintain and build the UK’s sovereign defence capability

18.1 The Strategic Defence and Security Review (SDSR) - techUK welcomes the fact that SDSR has recognised the need to integrate the whole of the UK’s defence and security policy to defend key critical infrastructures from financial services to energy security and smart cities. It sets out a positive strategy that will depend upon good industry engagement for its success, going beyond the traditional defence supply base to harness the latest innovations from companies large and small. The UK should learn from the experience of other countries that have focused industrial R&D activities to support their overall national defence strategy.

18.2 By setting out its Innovation Challenges the MOD has provided an effective mechanism for UK industry, especially SMEs, to demonstrate how they can contribute to the modernisation of the UK’s defence capabilities.

19 Work with business to make the UK a world-leading trusted domain for data

19.1 Implementing General Data Protection Regulation (GDPR) The new EU Data Protection Regulation, which will enter into force in early 2018, will impact all businesses that handle personal data. The new Regulation will bring new costs, risks and uncertainties which businesses will have to adapt to. It should be noted that many companies will need to be compliant with the new rules regardless of the outcome of the EU Referendum. There is still considerable uncertainty about the detailed implications of several key aspects of the new Regulation and the Information Commissioner’s Office has a vital role to play in leading the way in the interpretation of the Regulation and helping to inform, and agree early EU wide guidance for businesses to enable them to adapt within the timescales. The ICO and DCMS should engage with all stakeholders, including business and consumer organisations on a regular basis through the establishment of a data protection stakeholder forum to ensure that the UK plays a leading role in the implementation of this legislation which will impact almost all UK businesses.

19.2 International data transfers - and Safe Harbour 2. The digital economy is global and it is essential that there is a robust legal framework to enable the lawful transfer of data between international jurisdictions. The 2015 Schrems Ruling by the CJEU had the effect not only of striking down safe harbour but also called into question the reliability of other key legal other mechanisms that enable lawful international data transfers. Failure to resolve this issue will have profound implications for businesses that operate across global jurisdictions and need to transfer data to support routine business processes and SMEs that use e-commerce platforms. The UK must continue to engage at the highest level with both the EU and US to ensure a robust and sustainable legal framework for international transfers. Europe cannot afford a fragmentation of the regulatory framework that underpins such a vital enabler of the economy. International data flows underpin 50% of global trade in services.
19.3  **Blockchain (distributed ledger)** There is huge commercial interest in the role that blockchain or distributed ledger technology could play in increasing trust and confidence in online transactions, reducing fraud and cyber crime and providing robust interoperable, verify once, multiple-use online identity solutions. UK companies are already at the forefront of developing new applications based on distributed ledger technology. Sir Mark Walport’s recent report sets out very clearly the many potential applications that it could have for government and public services which need to manage data securely enabling them to move away from large centrally managed data repositories.

20  **Enhance cyber security and the prevention of cybercrime**

20.1  techUK has been pleased to see the increased focus by Government on developing the UK’s sovereign capabilities in cyber security. This focus was reflected in the Chancellor’s November speech at GCHQ, which committed the Government to investing £1.9bn over the next five years in cyber security, and in the Government’s Strategic Defence and Security Review (SDSR) that, amongst other things, committed the Government to creating a new National Cyber Centre bringing together the UK’s leading cyber experts.

20.2  techUK has been strongly advocating for Government to step up its commitments in regards to cyber security, in particular through increasing funding both for cyber defences and for developing the UK’s growing cyber security sector. The UK has a thriving network of cyber SMEs in the UK. techUK is calling for the Government’s next National Cyber Security Programme (NCSP) to:

20.2.1  **Eliminate obstacles to growth** for cyber security companies, in particular through removing bureaucracy in the procurement process for cyber security companies selling to Government. Government can also use its procurement power to support cyber SMEs through validating their products and services and use the global brand of Government agencies such as GCHQ to promote the UK cyber industry.

20.2.2  **Recognise the importance of cyber start-ups** and the development of a cyber-security ecosystem to accelerate their growth. Through the further creation of cyber innovation hubs to support cyber start-ups, and initiatives to support the commercialisation of ideas that come out of universities and colleges, the Government can help established a world leading commercial cyber ecosystem in the UK underpinned by start-ups and SMEs.

20.2.3  **Increase funding for law enforcement** to tackle volume cyber-crime. As highlighted in techUK’s report ‘Partners Against Crime’, a greater allocation of funding from the NCSP for law enforcement is needed to tackle volume cybercrime. This should be redirected to areas where industry and the police can work closer together to tackle the threat.
20.2.4 Develop a consistent cyber strategy across Whitehall in order to ensure that the Government approach to cyber is not fragmented and split up between multiple government delivery partners.

20.2.5 Design further initiatives to address the skills gap in the cyber sector, such as the recently announced Institute for Coding and the increased funding for cyber apprenticeships. The cyber skills agenda should not, however, be limited to developing cyber specific skills but should also entail business skills for cyber entrepreneurs and start-ups.

21 Investigatory Powers Bill

21.1 New legislation is required to be in place by the end of 2016 governing the Investigatory Powers in the UK. This legislation will have direct and potentially far reaching consequences for a wide range of technology companies in the UK. techUK has provided detailed submissions to the joint Scrutiny Committee on the Investigatory Powers Bill highlighting a number of serious concerns that need to be addressed to ensure that the final Investigatory Powers Bill is fit for purpose and worthy of emulation around the world.

21.2 Of particular importance to techUK members are questions on the usefulness and cost of generating new data, such as internet connection records; the unworkable nature of the extra-territorial provisions afforded in the draft Bill; the threat to the security of the internet through proposals in the draft Bill on equipment interference and in particularly bulk equipment interference; the need for proposals on bulk collection to be properly understood due to its high levels of intrusiveness; the importance of proper judicial oversight and authorisation for investigatory powers.

21.3 techUK believes that DCMS and BIS should carefully evaluate the business and commercial implications of the draft bill for UK technology companies seeking to export their products and services around the world when determining whether the proposals are necessary and proportionate.

22 Work with parents and educators to empower children to stay safer online

22.1 The online world offers a fantastic opportunity for children and young people to learn, create and communicate, however the online environment has some risks and challenges. UK industry has a track record of working with government, law enforcement and educators to respond to these risks - from enhancing the confidence and resilience of parents and children, to the most challenging issues regarding illegal child abuse images online.

22.2 However, industry and Government must be continually vigilant to new challenges for keeping children safer online posed by the development and adoption of new technologies. We encourage the Government to give greater resource to the UKCCIS secretariat in helping plan and mediate latest policy challenges, and encourage policy-
moters to view UKCCIS as a mechanism for genuine dialogue and exploration of new policy-propositions are made in partnership with third sector and industry organisations.

22.3 The Government should ensure that forthcoming proposals on age verification of adult content work closely with the industry in drawing up technically feasible and outcomes-oriented legislation.

23 Deliver on digital for everyone by funding a digital inclusion strategy

23.1 By 2020 everyone will need basic digital skills to participate in normal daily life as a digital citizen, whether it is to communicate, find information or purchase goods and services. Yet according to current predictions 10% of UK adults will still not have those basic skills in 2020. The promise of digital Government won’t be achieved unless the most excluded in society, who are often the most complex and demanding customers of Government services, are able to access digital services. The economic benefits of a properly realised digital inclusion strategy, building upon the work of organisations such as Go ON UK and others, will far exceed any associated costs.

23.2 In a rapidly digitising world this problem can no longer be considered peripheral, or wished away by underfunded strategies. Government will be the biggest beneficiary of an effective digital inclusion strategy, as it will enable it to fully digitalise the delivery of public services. The Government should therefore implement a comprehensive and properly funded digital inclusion strategy and provide ‘assisted digital’ support to those in society who will not be able to access digital public services without support. The Government should also provide incentives for local authorities to fully engage with this aim, particularly in an era of new devolved powers.

24. EU membership

techUK members have a clear preference for the UK to remain in a reformed European Union and support the government’s drive to make the EU more competitive. techUK members await the outcome of the UK government’s renegotiation with the European Union with interest.

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**Appendix – techUK manifesto infographic**

The implementation of an effective digital strategy will **SECURE OUR DIGITAL FUTURE** and establish the UK as a world leading digital economy.

<table>
<thead>
<tr>
<th>Strategy &amp; leadership</th>
<th>Excellence in development &amp; use of tech</th>
<th>Public sector transformation</th>
<th>Safe &amp; inclusive digital world</th>
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<tbody>
<tr>
<td>Continued commitment to the highest level of leadership across government and industry.</td>
<td>Greater investment in the UK’s capacity for innovation; invest in key growth markets and deepen the exploitation of tech across the private sector.</td>
<td>Greater scale and pace to the process of public sector transformation.</td>
<td>Need to ensure everyone is included and that the online world is safe and secure for all.</td>
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</tbody>
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- Cabinet-level leadership
- The appointment of dedicated Digital Ministers in every department
- Build on the Information Economy Council as the channel for industry commitment
- Champion the UK’s reputation as an innovator in tech
- Appoint FCO Digital Trade Czar
- A Chief Privacy Officer.

- Greater investment in science and innovation
- More investment in skills and talent
- Increased investment in infrastructure
- Pioneer the Internet of Things
- Ensure the UK is the best place to start-up and scale up
- Support growth of tech clusters
- Lead in building European Digital Single Market
- Strengthen exports support
- Modernise energy
- Modernise financial services.

- Bring greater scale and pace to the digitalisation of public services
- Build on successful work of Cabinet Office and GDS
- Leverage data analytics
- Single Criminal Justice and Emergency Services technology strategy
- Address barriers to digital innovation in health and social care
- Up-skill Local Government
- Maintain CAISR as a sovereign defence capability.

- Double the participation of SMEs in the online economy
- Embed the principle of ‘digital-trust-by-default’
- Protect free speech
- Strengthen democratic oversight of data retention and surveillance
- Enhance cyber security and the prevention of cyber crime
- Empower children to act safely online
- Fully fund a comprehensive Digital Inclusion Strategy.