HM Government

Industrial Strategy: government and industry in partnership

UK Government Information Economy Strategy

A Call for Views and Evidence

February 2013

HM Government

Contents

Overview of Industrial Strategy

The Government has set out a vision for the future of British industry and committed to a long term, strategic partnership with industry. The Information Economy is one of 11 sectors where partnerships are being developed, with the following aims:

- Be long-term in focus: developing a vision for the sector and what needs to happen from both Government and business to get there

- Be co-created with industry: committing both business and Government to specific actions to maintain and develop long-term capabilities

- Take a 'whole of Government' approach: looking across all of Government to identify barriers and levers which have the biggest impacts and align these to deliver growth

- Engage across the totality of the sector: working with industry and identifying actions which benefit businesses across the whole supply chain whether they are large, medium or small

The Information Economy Strategy is due to be published in May 2013. This call for evidence is one of several means of dialogue with industry suppliers and users as part of preparation for the strategy.

How to respond

We welcome your views and evidence, recognising that due to the varied nature of the sector, not all questions will be relevant to all respondents.

This call will continue to **15 March 2013**, but we would welcome earlier input.

Contributions can be submitted as follows:

using the online survey: https://www.surveymonkey.com/s/W6KC6VT

by email: infostrat@bis.gsi.gov.uk

or by post to:

> Information Economy Strategy Team
> BIS
> 1 Victoria Street
> London
> SW1H 0ET

If you would like further information on any aspects of this call for evidence, or the Information Economy Strategy more generally, please contact infostrat@bis.gsi.gov.uk

Information Economy

The term "information economy" is broadly defined and does not encompass a single sector. For the purposes of this strategy the working description of the information economy is being taken as:

"the part of the economy where digital technologies and information combine to drive productivity and create new growth opportunities across the whole economy"

The information economy sector is a significant enabler of other sectors. The use of digital technology and information is a key element of most parts of the economy which means the strategy has the potential to make a real difference not only in the UK's IT sector but across the whole economy.

The strategy will therefore look at how the UK can fully exploit growth opportunities for the wider economy through industry and Government working in strategic partnership. An early output of the strategy will be a clear picture of what the information economy in the UK looks like today, including analysis of the sector; a vision for where it is going and the impact it can have on other sectors; and an explanation of how we will get there. The strategy will be action-oriented, with specific pledges from Government and business.

The strategy sits in the context of increasing Government focus on the information economy, and the innovations and technologies which underpin it. The Autumn Statement 2012 announced an additional £600 million of funding for science, research and innovation, including some of the key technologies for the future information economy, such as Big Data and energy efficient computing. The e-infrastructure leadership council (ELC) was established by the Government in March 2012 as a national advisory body making recommendations to Government, co-chaired by industry and Ministers. The information economy strategy will build on this activity.

Areas of focus

This call for evidence and views covers five areas that have been identified as being likely to provide real growth opportunities in the sector and where Government and industry, working together, can stimulate growth. These are: **smart cities; cloud computing; internet of things; big data; and e-commerce**. The common theme which runs through all these is that there is a critical role for the software, IT services and telecommunications services sectors to play in bringing growth opportunities to fruition.

This is not an exhaustive list of the growth opportunities the strategy is expected to cover. Others will include cyber security and, as indicated above, the ability of the sector to increase productivity in other sectors.

Overall Questions

General for industry suppliers
1   Are the following five sectors the most important – smart cities; cloud computing; internet of things; big data; and e-commerce – and do they present the biggest opportunities for growth in the sector? Are there other growth opportunities in the information economy that Government and industry should consider?
2   What are the drivers of change that will create opportunities for the sector, in particular in relation to these five areas?
3   How should Government and the sector work together to build on the UK's strengths in the information economy, including in relation to the five areas?
4   For businesses seeking to exploit opportunities in the information economy, what are the main benefits and barriers of the UK business environment? How could benefits be built on and barriers addressed?
5   How can we ensure that the UK's research and innovation in the information economy field is translated into commercial success? For example new business start-ups, innovative products and services, R&D supporting growth of established businesses.

Uptake of ICT solutions by the business community
6   What are the key skills needed for the UK to build and maintain a strong information economy? Do we have sufficient people with these skills, now and in the pipeline? If not and there is a skills deficit, how can this be addressed, and what is the role for Government, industry and others?
7   In what innovative ways does your company use ICT and/or the internet to improve business performance? For example, using the internet to sell goods and services; improving business processes, customer service, efficiency or management; using cloud computing or data exploitation.
8   How does your company ensure it has the right technology and staff with the right IT skills?

Cloud computing

Cloud computing describes the provision of networked or shared computing resources, with users outsourcing some, or all, of their hardware and software provision as well as associated maintenance and support. Services are accessed by means of the internet or private network on a pay-per-use basis, which enables users to manage data and access software more efficiently and cheaply. As users only pay for capacity they need, there is no necessity for individual business users to maintain a fixed level of provision equal to their maximum requirement. Flexible pricing makes it easier to access increased capacity when it is required.

According to TechMarketView, cloud computing is a fast growing market with opportunities for UK cloud service providers. It is estimated the UK market reached £1.2bn in 2011 – 38% higher than 2010 – and is expected to reach £3.9bn in 2015. Global revenue on cloud services is predicted to reach $148bn in 2015.

Cloud services can also have a positive impact on the wider business community. As well as reducing fixed capital costs, it can transform business performance. For example, access to powerful analytical tools can help create more tailored services for customers.

Potential Opportunities:

- Develop the UK cloud provider sector to exploit growing domestic and overseas markets

- Raise awareness and increase uptake in the wider business community that allows them to develop new services/ products or develop new business models

- Further benefits from the development of new cloud computing software/ programmes/ platforms

Questions
9   If you are using cloud computing services, what are the key uses and benefits for your business and what issues or difficulties have arisen?
10   If you have not or have only partially adopted the use of cloud services, what are the key barriers to your company using cloud services?
11   How can Government and the sector work to strengthen further the UK's provision of cloud services?

Big Data

Big Data refers to analysing and exploiting increasingly large and complex data sets, characterised by the following metrics[1]:

- Volume – the size of the data sets, the number of bytes included, and the technologies and techniques which need to be developed to analyse such vast amounts of data

- Variety – the structure of the data, for example whether it has a full and regular structure, which makes for easy analysis, or whether the structure is incomplete or irregular, which makes analysis much harder

- Velocity – the frequency or speed by which the data is generated or delivered

Amongst other things, the strategy, will explore how Open Data can play a role in the Big Data sphere. Big Data is not the same as Open Data, although there are links between the two. Big Data refers to size and complexity of data sets, whereas Open Data relates to initiatives designed to increase access to data (usually public sector data) in the interests of transparency and of allowing data to be exploited for public and economic benefit.

The role of data in driving growth and development is recognised globally. The Government has already established the e-infrastructure leadership council, co-chaired by industry and Ministers, and has invested an additional £150 million in e-infrastructure in October 2011. Big Data was one of the Government's Eight Great Technologies with additional funding of £189 million announced in the Autumn Statement 2012.

Potential Opportunities:

- Benefits of applying Big Data analysis to sectors across the economy such as investment banking, insurance, manufacturing, transport and logistics and life sciences.

- Wider business community exploiting Big Data to generate productivity improvements and new or improved services

- UK's strong R&D capability – opportunities to create and exploit Big Data analytics

- New and better targeted services for citizens

Questions
12   What do businesses need to do to in order to exploit and expand the use of Big Data?
13   Where can Government add most value in promoting the success of Big Data analytics? For example, the role of Open Data and the need to balance security and privacy with increasing access to data.
14   What role can universities and higher education institutions play in Big Data – how can we ensure research is commercialised, and how can universities exploit the benefits of Big Data?
15   What skills are important for success in Big Data, and how government and business help ensure the UK education system delivers them?

E-Commerce – the UK Online Economy

The UK online economy is one of the most sophisticated and fastest growing in the world. While e-commerce is the biggest part, estimated to make up 55% of the total value, the internet value chain e.g. content rights and other online services, enabling technology and connectivity, makes a significant contribution (45%)[2]. A recent Boston Consulting Group (BCG) report values the UK online economy at £121bn [3] with AT Kearney [4] valuing it at £82bn. The BCG report estimates 10% growth per year to 2015.

However, many businesses still do not trade online and fewer still trade internationally. For small firms it is estimated that a10% productivity increase is achieved from internet usage, as SMEs with significant internet usage grow and export twice as fast as others[5].

Potential Opportunities:

- Encourage more SMEs to do business online to drive efficiency gains and support exports and growth

- Increase cross border e–commerce to allow UK customers and businesses to access growing international markets and a wider choice of products and services

- Facilitate the growth in mobile commerce

- Reduce administration costs for Government and businesses (especially SMEs) and provide easier access to services

- Leveraging the UK's trusted image to help drive exports

Questions
16   What can Government and industry do to help UK companies take advantage of the opportunity of the online economy?
17   What are the barriers to your company using the internet to buy and sell online both in the UK and with consumers outside the UK?
18   Where do you access advice on trading online?

Internet of Things (IoT)

The Internet of Things is a concept where the Internet connects objects or physical items ("things") in networks. The idea is that physical objects can become part of an information network, whereby they can interact with both humans and with each other (also known as Machine to Machine or M2M communication).

IoT is more than an extension of today's Internet – it will comprise a number of new independent systems that operate within their own infrastructures (albeit many relying on existing Internet infrastructures). The scope for M2M communication could cover as many as 50 billion[6] objects or machines, of which only 1% are estimated to be connected today.

Potential opportunities:

- Increased efficiency for business and Government – e.g. supply chain management
- Social and environmental benefits – e.g. reduced traffic congestion
- Easier compliance with new regulations and/or codes of practice – e.g. smart metering

Questions
19   What are the potential benefits for your business or sector, or for the economy more generally of Machine-to-Machine (M2M) communication, and why?
20   What is needed to ensure a true Internet of Things, rather than several "internets of silos"?
21   What are the key obstacles to the UK successfully developing and using the Internet of Things?

Smart Cities

The Smart Cities agenda aims to exploit technology to better integrate and manage services to the citizen and meet the challenges of traffic congestion, an ageing population, rising cost of health and social care and the need for secure, clean energy. These challenges require a fundamental change in the way local authorities and utility companies deliver their services. The concept and technologies, products and services are developing apace and offer opportunities for businesses in the UK.

Our aim is to build on UK expertise and make the UK a global hub of knowledge and good practice because of the significant market opportunities flowing from urbanisation of the developing world. The challenge for the Smart Cities strand of the information economy strategy is to:

- achieve greater coherence of policy amongst Government activities e.g. smart grids, telecare, and intelligent transport systems;

- strengthen local authority awareness of the opportunities afforded by more integrated delivery of services and improve its capability to deliver;

- identify opportunities for British businesses in an evolving value chain.

In January 2013, Glasgow was announced as the winner of £24 million of investment from the Technology Strategy Board to host the UK's "Future Cities Demonstrator". The city will demonstrate how providing new integrated services across health, transport, energy and public safety can improve the local economy and increase the quality of life of its citizens, and will allow UK businesses to test new solutions that can be exported across the globe.

The results of Glasgow's large-scale, city-wide demonstrator will be made available to interested businesses, cities and academics to provide valuable learning for innovative UK businesses to develop solutions for cities across the world.

Potential Opportunities:

- UK to become a global hub of expertise and good practice

- Raise the profile of UK capability and thought leadership and enable UK cities/firms to participate in global networks

- Develop the awareness, understanding and capability of UK cities to exploit UK expertise

- Helping cities to develop a programme of uptake/implementation through sharing experience of innovative public service delivery

Questions	
Questions	
22	Where in the UK do you think this concept has been well developed?
23	What do you think are the barriers to the widespread adoption of smart city concepts and what steps should Government take to address them?
24	What lessons can the UK draw from overseas experience and which examples in particular?

References

[1] Gartners - Pattern-Based Strategy: Getting Value from Big Data, 2011
http://www.gartner.com/newsroom/id/1731916

[2] AT Kearney 2012

[3] Boston Consulting Group G20 2012

[4] AT Kearney 2012

[5] Internet Matters - McKinsey May 2011

[6] Internet of Things (IoT) & Machine-To-Machine (M2M) Communication Market – Advanced
Technologies, Future Cities & Adoption Trends, Roadmaps & Worldwide Forecasts (2012 – 2017),
marketsandmarkets.com, 13th September 2012

UK Government Information Economy Strategy: a Call for Views and Evidence – response form

The Department may, in accordance with the Code of Practice on Access to Government Information, make available, on public request, individual responses.

The closing date for this call for evidence is **15 March 2013**

Please return completed forms to:

Information Economy Strategy Team
BIS
1 Victoria Street
London
SW1H 0ET

Telephone: **020 7215 2968**

Fax: **020 7215 5882**

Email: **infostrat@bis.gsi.gov.uk**

Overall Questions - General for industry suppliers

Question 1

Are the following five sectors the most important – smart cities; cloud computing; internet of things; big data; and e-commerce – and do they present the biggest opportunities for growth in the sector? Are there other growth opportunities in the information economy that Government and industry should consider?

Question 2

What are the drivers of change that will create opportunities for the sector, in particular in relation to these five areas?

Question 3

How should Government and the sector work together to build on the UK's strengths in the information economy, including in relation to the five areas?

Question 4

For businesses seeking to exploit opportunities in the information economy, what are the main benefits and barriers of the UK business environment? How could benefits be built on and barriers addressed?

Question 5

How can we ensure that the UK's research and innovation in the information economy field is translated into commercial success? For example new business start-ups, innovative products and services, R&D supporting growth of established businesses.

Overall Questions - Uptake of ICT solutions by the business community

Question 6

What are the key skills needed for the UK to build and maintain a strong information economy? Do we have sufficient people with these skills, now and in the pipeline? If not and there is a skills deficit, how can this be addressed, and what is the role for Government, industry and others?

Question 7

In what innovative ways does your company use ICT and/or the internet to improve business performance? For example, using the internet to sell goods and services; improving business processes, customer service, efficiency or management; using cloud computing or data exploitation.

Question 8

How does your company ensure it has the right technology and staff with the right IT skills?

Cloud computing

Question 9

If you are using cloud computing services, what are the key uses and benefits for your business and what issues or difficulties have arisen?

```

```

Question 10

If you have not or have only partially adopted the use of cloud services, what are the key barriers to your company using cloud services?

```

```

Question 11

How can Government and the sector work to strengthen further the UK's provision of cloud services?

```

```

Big Data

Question 12

What do businesses need to do to in order to exploit and expand the use of Big Data?

Question 13

Where can Government add most value in promoting the success of Big Data analytics? For example, the role of Open Data and the need to balance security and privacy with increasing access to data.

Question 14

What role can universities and higher education institutions play in Big Data – how can we ensure research is commercialised, and how can universities exploit the benefits of Big Data?

Question 15

What skills are important for success in Big Data, and how government and business help ensure the UK education system delivers them?

E-Commerce - the UK Online Economy

Question 16

What can Government and industry do to help UK companies take advantage of the opportunity of the online economy?

```
```

Question 17

What are the barriers to your company using the internet to buy and sell online both in the UK and with consumers outside the UK?

```
```

Question 18

Where do you access advice on trading online?

```
```

Internet of Things (IoT)

Question 19

What are the potential benefits for your business or sector, or for the economy more generally of M2M (machine to machine) communication, and why?

```



```

Question 20

What is needed to ensure a true Internet of Things, rather than several "internets of silos"?

```



```

Question 21

What are the key obstacles to the UK successfully developing and using the Internet of Things?

```



```

Smart Cities

Question 22

Where in the UK do you think this concept has been well developed?

Question 23

What do you think are the barriers to the widespread adoption of smart city concepts and what steps should Government take to address them?

Question 24

What lessons can the UK draw from overseas experience and which examples in particular?

General – About you and your organisation

Please provide information about yourself and your organisation (optional)		
Title:	Forename:	Surname:
Organisation:		
Address 1:		
Address 2:		
Address 3:		
Town / City:		
County:		Post code:
Tel. number:		
E-mail address:		

Which sector does your business/organisation operate in?

☐	Agriculture, Forestry and Fishing
☐	Mining and Quarrying
☐	Manufacturing
☐	Electricity, Gas, Steam and Air Conditioning Supply
☐	Water Supply; Sewerage, Waste Management and Remediation Activities
☐	Construction
☐	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
☐	Transportation and Storage
☐	Accommodation and Food Service Activities
☐	Information and Communication
☐	Financial and Insurance Activities
☐	Real Estate Activities
☐	Professional, Scientific and Technical Activities
☐	Administrative and Support Service Activities
☐	Public Administration and Defence; Compulsory Social Security
☐	Education
☐	Human Health and Social Work Activities
☐	Arts, Entertainment and Recreation
☐	Other Service Activities
☐	Activities of Households as Employers; Undifferentiated Goods-and Services-Producing Activities of Households for Own Use
☐	Activities of Extraterritorial Organisations and Bodies

☐	Other (please specify):

Are you responding as:
An individual ☐
or on behalf of an organisation ☐
If you are responding on behalf of an organisation did you consult others within your organisation?
☐ Yes ☐ No

From the list of options below which best describes you as a respondent?

☐	Business representative organisation/trade body
☐	Central government
☐	Charity or social enterprise
☐	Individual
☐	Large business (over 250 staff)
☐	Legal representative
☐	Local Government
☐	Medium business (50 to 250 staff)
☐	Micro business (up to 9 staff)
☐	Small business (10 to 49 staff)
☐	Trade union or staff association
☐	Other (please specify):

Thank you for your views on this call for evidence.

Thank you for taking the time to let us have your views. We do not intend to acknowledge receipt of individual responses unless you tick the box below.

Please acknowledge this reply ☐

At BIS we carry out our research on many different topics and consultations. As your views are valuable to us, would it be okay if we were to contact you again from time to time either for research or to send through consultation documents?

☐ Yes   ☐ No