

Industrial Strategy: government and industry in partnership

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

About BlackBerry

Research In Motion (RIM), a global leader in wireless innovation, revolutionized the mobile industry with the introduction of the BlackBerry solution in 1999. Since then, BlackBerry products and services have continued to change the way millions of people around the world stay connected.

Research In Motion now operates globally under the name BlackBerry. With the launch of BlackBerry® 10, we have re-designed, re-engineered and re-invented BlackBerry. The BlackBerry product line includes the BlackBerry® PlayBook™ tablet, BlackBerry® smartphones, software for businesses and accessories.

We provide answers below on those issues where BlackBerry is able to provide its expertise. We would be very happy to answer any questions on the points raised in this submission.

## 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?

The five sectors identified in this call for evidence succinctly capture some of the major opportunities arising from recent advances in ICT. As technology has become faster, more powerful, more mobile and more networked, we have seen new opportunities to help cities function more intelligently, for information to be stored and accessed remotely from the cloud, for devices to interact intelligently with each other, and for new products and services to be bought and sold online. Together, these five ‘sectors’ present a tantalising vision of the future and an opportunity for the UK to leverage its skills for growth in the information economy.

There is an important role for governments to identify such technologies and support their development because of the benefits that will follow for the economy, public service delivery and consumer enjoyment. Through regulation, procurement and the collection of public sector data, governments are also in a strong position to shape these new markets.

However, beyond identifying specific ‘vertical’ issues in the information economy (smarter cities, increased e-commerce, for example), public policy should also focus on the ‘horizontal’ underpinning factors that enable businesses to invest with confidence and deliver innovations to customers. An effective strategy for growth in the information economy therefore needs to address cross-cutting themes such as skills, R&D incentives, infrastructure, privacy, security and intellectual property rights, among others.

The critical enabler for the information economy is the communications infrastructure that connects people and devices – particularly the spectrum for wireless networks. We address the implications of the shift to mobile computing in more detail below.

By its nature, the information economy is also global. Policy must take account of this international dimension by aiming for a harmonized approach between national governments minimizing unnecessary regulatory burdens. This will create efficiencies in product innovation while enabling the UK to compete globally. BlackBerry welcomes the formation of a government-industry information economy council to inform policy and ensure a coordinated approach across Government. We would be pleased to provide a representative for such a body.

### Question 2

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

The next major shift in information and communications technology is now beginning as we move from widespread ‘desktop computing’ to true ‘mobile computing’.

Personal computers (PCs), once the computing mainstay for both enterprises and consumers, have begun to experience a gradual global decline. Meanwhile, the number of mobile phone subscriptions has increased to a total of more than 6 billion. Mobile broadband services display the sharpest growth rate among ICT services globally, with now almost twice as many mobile broadband users as fixed (wired) broadband users. And smartphones continue to grow as the mobile device of choice, with global smartphone shipments growing more than 45% in the last year alone and forecasted to overtake shipments of traditional feature phones entirely in 2013.

Mobile computing will be a driving force for increased productivity, renewed economic growth, highly-skilled jobs, cost savings and advances in healthcare, education, transport, energy efficiency, secure financial services, supply chain management, entertainment, and more. We are not far from a day when a mobile computing device serves as a user’s primary computing device.

The shift to mobile computing will be driven on the demand side by consumers favouring innovations that enable them to keep moving through their busy lives. On the supply side, it will be driven by device innovation and faster mobile networks. The new 4G LTE BlackBerry 10 devices, for example, are part of a new category of device that puts mobile computing at its heart. The real-time QNX microkernel in the BlackBerry 10 operating system supports mission-critical applications requiring high uptime and reliability, and is scalable from lightweight embedded systems to multi-core mobile computing devices like smartphones and tablets. Mobile operating systems like BlackBerry 10 will be the hallmarks of mobile computing in the future.

In this new age of mobile computing, mobility and wireless are integral elements of all computing devices and applications, embodying a new design principle of putting mobile first. While we commend Government on its digital by default approach, looking to the future, mobile computing should be fully reflected in a future government industrial strategy.

### 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?

The priority for an effective IE strategy must be to maximise the opportunities presented by the shift to mobile computing in the UK. For the industry this means working jointly to solve critical technology problems – for example, meeting the need for faster wireless networks and securing confidential information. For governments this means addressing key public policy issues raised by the shift to mobile computing in areas including spectrum, privacy and security, and intellectual property.

To achieve this, the UK Government should continue to work collaboratively with industry to ensure an internationally competitive environment in the UK. The Government should also avoid 'parochial' policies and recognise that the information economy is global in nature. BlackBerry has around 79 million customers in around 175 countries. We therefore look to a coordinated approach, particularly in respect of spectrum, standards, data protection and intellectual property rights.

We support the Government's call for an information economy council to coordinate government and industry activity.

#### 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?

The UK is an important market for BlackBerry. Our Headquarters for the EMEA region is located in Slough and the UK was among the handful of markets to host the launch of BlackBerry 10, our new operating system and platform.

We see much strength in the UK already and welcome the Government's continued support for the ICT sector – from the recent auction of 4G spectrum to the increasing awareness of the cyber-security challenge. To build on these strengths, the Government should continue to focus on enhancing the competitiveness of the UK environment and also recognise that policy interventions should take account of the global nature of the information economy. We encourage the UK Government to focus on the following three priorities to support innovation in mobile computing:

##### 1. Identifying new sources of spectrum and harmonising allocations.

Licensed spectrum is the lifeblood of the wireless networks through which mobile computing devices will be continuously connected. Policymakers should continue their efforts to identify new sources of spectrum for wireless broadband services through inventory analysis to identify where incumbent users could: reduce their current spectrum footprint through new efficient technologies; fulfil their wireless communications needs with the new networks built using their spectrum; and allow new users into their spectrum through some form of licensed shared access where clearing is not practical. Other creative ways of clearing spectrum, such as incentives for voluntary clearing, could also be considered.

Licensed exempt spectrum is already playing a vital role in promoting mobile computing both through a complementary arrangement with licensed networks and independently in local wireless networks used in homes, offices, communities and businesses. Licensed exempt spectrum will also need to be increased significantly in parallel with licensed spectrum. Both industry and government must continue to explore new ways to find this additional spectrum.

Maximizing the use of “white space” and other sharing could be a major source of new licensed exempt frequencies.

When making decisions on how to allocate spectrum, policymakers will also need to remain mindful of the very significant real world technical constraints on mobile computing devices using that spectrum. In the mobile computing era, devices will continue to get smaller, more powerful, and faster – mobilizing computing power and bringing it to the user. Mobile computing devices will require seamless connectivity to a multitude of networks and to the burgeoning Internet of Things. Policymakers will need to focus on harmonizing their spectrum allocations to the greatest extent possible – better enabling mobile computing devices to access the multitude of wireless networks seamlessly.

Without harmonisation, the multiplicity of disparate band allocations, band configurations, and wireless access technologies required to support mobile computing will become more and more challenging to accommodate. In turn, this will reduce support for network interoperability, create obstacles to more compact device designs, decrease device performance, increase device costs for consumers, and reduce the availability of innovative products on non-harmonized networks. Instead, harmonizing global spectrum allocations presents a much better path forward for the ubiquitous availability and seamless connectivity of the mobile computing era.

2. Bringing governments and industry together to address problems in the international legal system concerning the defence of patents.

The innovations that actually make mobile devices functional are the product of cooperation among thousands of small and large firms across the globe. This cooperation typically takes the form of cross-licensing agreements covering the patents needed to make commercially successful mobile products. Mobile computing will require continued collaboration and cross-licensing between these large and small innovators, as a wider array of products incorporate an ever greater number of inventions in the mobile computing space.

Unfortunately, this productive collaboration is being undermined by the emergence of patent assertion entities (PAEs) – also known as patent trolls. Patent trolls are companies that hold large portfolios of patents they have not developed themselves. They make no products, and exist only to litigate. They attack companies with impunity because they don’t themselves produce anything their targets can counter-attack. They impose higher costs on large and small companies operating throughout the wireless ecosystem. These costs reduce the ability of firms to compete effectively, deprive consumers of choices, slow innovation, and raise prices. They also harm workers, destroy jobs and restrict opportunities in this vibrant sector of the economy.

As part of their agenda to foster innovation in mobile computing, policymakers should look for solutions to the problem of patent trolls.

3. Finding the right balance between the desire for privacy and open access.

Policymakers should adopt privacy policies that are harmonized across sectors, technology-neutral, allow for the flow of information between countries, and are balanced. Regulators should work together to harmonize privacy regulations globally and decrease their complexity, reducing unnecessary compliance burdens. These principles should be adopted in domestic national laws and further protected in trade agreements – particularly important considering the significance of cloud computing to the global economy.

At the same time, policies should be narrowly tailored to protect against real abuses without creating unwarranted compliance burdens of questionable value in protecting privacy. For example, breach notifications should be made only when the breach is material and only when there is a real risk of significant harm to the individual. Policymakers should avoid unnecessary limitations regarding the use of customer information where consent has been clearly obtained. Policymakers should refrain from policies that unnecessarily limit or restrict cross-border data flows. Given that the bulk of cloud-connected services will invariably involve some cross-border exchanges of data, unnecessary restrictions on data flows have the effect of creating barriers to mobile computing services. And privacy laws should refrain from defining personal information in an overly broad manner and imposing obligations on all data, such as data that is anonymous in any practical sense.

Policymakers should take note of the significant security benefits that best in class mobile computing technologies can offer, and work to remove barriers preventing consumers and businesses from accessing those technologies.

## 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.

BlackBerry puts research and development at the heart of the company's culture. We have become a world leader in wireless innovation, investing \$1 billion annually in R&D in the EU and North America. BlackBerry's UK R&D centre is based in Birmingham and we value close collaboration with UK universities. In the UK we work with the Royal College of the Arts, Aston University and UCL in addition to partnering with 58 universities and colleges as part of the BlackBerry Academic Programme.

The success of the UK economy hinges on a steady supply of skilled workers. However, interest in STEM subjects is declining and measures need to be taken to reverse this trend. We welcome the Government's recognition of the importance of STEM to the economy.

However, at present, the landscape for bringing business-led workshops to schools is

patchy, with no centralised mechanism to ensure equality of access or quality. The funding of work placements should be kept under close watch to ensure that students and businesses are able to make the most of these opportunities to develop talent.

The Government's R&D investment can also support advances in future mobile technology. Government decisions on R&D should prioritise opportunities for industry and academia to collaborate on the commercialisation of mobile technology. The UK starts from a strong position with its world-class research base and could leverage this reputation to lead the development of the next generation of mobile computing.

## 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?

The UK already enjoys comparatively high rates of technology uptake. It should be a priority for Government to work closely with industry to provide training opportunities targeted at ICT skills and focus resources on areas of need, especially in growth sectors such as app development.

Alongside the vital role of the UK's schools, colleges and universities, industry should be encouraged to make its contribution to training opportunities for the information economy. In December 2012, BlackBerry announced a partnership with Skills Matter, Europe's largest provider of 'agile' training and events. Launching in 2013 with a BlackBerry 10 developer event, the partnership will involve the creation of an app test and porting centre for developers. We will be working with start-up firms to demonstrate the use of mobile in building and growing businesses and supporting a range of events aimed at illustrating to the developer community the power and potential of the BlackBerry 10 platform. The Government should continue to recognise and support such industry-led initiatives.

BlackBerry also operates year-long paid internships in the UK. Interns work in Research and Development and the Network Operations Centre and enjoy one of the UK's best-paid intern programmes (interns are paid £20,500 per year and offered benefits). The BlackBerry internship programme presents a unique opportunity for young people to gain first-hand experience of working in the information economy. The intern programme is not supported by the Government but we could take on additional numbers with public support. We would welcome discussions with the Government about the design of any such schemes.

#### 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.

No comment.

#### Question 8

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

No comment.

#### 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?

No comment.

#### 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?

No comment.

#### Question 11

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



In order for the movement to cloud computing to continue to be successful, we believe it is important to address the needs of end users and protect the rights of citizens, while at the same time allowing for the development of a strong cloud computing industry:

. An immediate requirement for driving cloud services is mobile broadband infrastructure. The BlackBerry infrastructure passes close to 20 petabytes of data traffic each month. As such, the wireless network capability and spectrum requirements must have a very high priority in any cloud computing plan.

. Governments have been slower than the market to catch up with the shift to cloud computing but we welcome the vision in the Government's ICT Strategy. The migration of government services online will have an important role in creating a market for these cloud services. The Government can stimulate demand by moving UK public services to mobile platforms.

## Big Data

### Question 12

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

No comment.

### 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.

Data is the raw material of the information economy. Data analytics in turn offers new opportunities to gain valuable insight into the needs and preferences of customers and citizens for their benefit. The UK Government plays an important role in the 'big data' market due to the large amount of valuable data it collects and holds. It can support the big data market in the UK by making such data publicly available so that developers can re-use it to create innovative apps. Government can also support the app market through its own online services. To shape a competitive market in the UK, government apps should be made available across multiple competing mobile platforms.

A key policy challenge is to balance the need to keep data private and secure while also leveraging the power of digital information. To find that balance, policymakers should adopt privacy policies that are harmonized across sectors, technology-neutral, allow for the flow of information between countries, and are balanced.

. Regulators should work together to harmonise privacy regulations globally and decrease their complexity, reducing unnecessary compliance burdens. These principles should be adopted in domestic law and further protected in trade agreements – particularly important considering the significance of cloud computing to the global economy.

. Policies should be narrowly tailored to protect against real abuses without creating unwarranted compliance burdens of questionable value in protecting privacy. For example, breach notifications should be made only when the breach is material and only when there is a real risk of significant harm to the individual. Policymakers should avoid unnecessary limitations regarding the use of customer information where consent has been clearly obtained.

. Policymakers should refrain from ‘parochial’ policies that unnecessarily limit or restrict cross-border data flows. Given that the bulk of cloud-connected services will invariably involve some cross-border exchanges of data, unnecessary restrictions on data flows have the effect of creating barriers to mobile computing services. And privacy laws should refrain from defining personal information in an overly broad manner and imposing obligations on all data, such as data that is anonymous in any practical sense.

#### 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?

No comment.

#### Question 15

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

No comment.

#### 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?

The shift to mobile computing is having a significant impact on how consumers and merchants do business.

Mobile Commerce (mCommerce) has many applications, including in-app payments, person to person money transfers, online banking via smartphones, mobile contactless payments, and mobile wallets. Some of these applications are already being used regularly by smartphone owners, while others are still in development or test phases. There is currently a lot of interest in the development of mobile contactless payments and mobile wallets. These applications are being made available with the development of near-field communication (NFC), such as in the new BlackBerry 10 smartphones.

Near field communication brings the physical world to your phone. An NFC equipped smartphone allows for the transfer of information through “tapping” or waving one’s phone near a terminal, enabling mobile payments. An NFC equipped smartphone can support credit card credentials and other financial information. Other applications include storing loyalty cards, coupons and various forms of identification cards on the smartphone. Combined with mobile payments, this becomes a mobile wallet.

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?

No comment.

Question 18

Where do you access advice on trading online?

No comment.

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?

The emerging 'Internet of Things' is a significant new development that can boost productivity, spark economic growth and enhance the quality of life for citizens. We are moving rapidly from near-ubiquitous use of mobile technology for personal communications to a new world of people-to-machine and machine-to-machine communications. This is a world of mobile-connected cars, trains and planes, of remote healthcare delivery, more efficient energy management and secure mobile finance. There are also follow-on benefits for the information economy arising from the collection and re-use of data from M2M communications that can help generate new products and services.

In 2009, BlackBerry acquired QNX, a world-leading developer for connected embedded systems, including for the UK military. This technology is just starting to emerge from the world of advanced military communications to more everyday consumer uses.

#### Question 20

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

For the 'Internet of Things' to function, mobile computing devices will require seamless connectivity to a multitude of networks. Policymakers will therefore need to focus on harmonizing their spectrum allocations to the greatest extent as this will enable mobile computing devices to access networks seamlessly. Without harmonisation, the multiplicity of band allocations, wireless technologies and radio frequency antennas required to support mobile computing will become more and more challenging to accommodate.

#### Question 21

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

No comment.

#### Smart Cities

#### Question 22

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

No comment.

### 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?

Realising the Smart Cities vision ultimately depends on mobile computing – that is, access to fast mobile networks and devices built with mobile in mind.

Mobile computing stands to revolutionize the way our cities and homes operate. For example, in policing, legacy public safety communications services have typically been characterized by voice-only services, often lacking interoperability with other communications systems. Mobile computing enables an entirely new approach to public safety communications, opening up new forms of data and access for public safety personnel and enhancing the richness of the link between public safety personnel and the public. In a mobile computing paradigm, the emergency services can access rich sets of information during operations in real-time, such as graphical information about hazardous conditions, detailed criminal databases and medical histories.

Citizens can in turn feed rich data back to public safety personnel, including handheld images and videos of developing public safety threats, or wireless data from medical sensors. Public safety agencies will be able to access and analyse new sets of Big Data generated in the mobile computing paradigm to identify and counteract threats to public safety better and earlier.

Mobile computing also opens up new avenues for home and office automation – creating a common platform for seamless integration and access to a variety of home automation systems. Mobile computing devices will control energy management and climate control systems, security and access control systems, lighting and window systems, audio-visual and entertainment systems, appliances, and more. Through its integration with these home automation systems, mobile computing will enable residents to better manage their homes' safety and climate footprint, anywhere and anytime. This integration with mobile computing will also enable regulators and utilities to better promote energy conservation – for example, by creating more transparency to consumers about their energy usage and automating smarter energy choices.

### Question 24

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

No comment.

General – About you and your organisation

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

X

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  Yes  No

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

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