

# i2010 Working Group

## Delivering i2010

### Ensuring the Right Conditions for an Innovative, Inclusive & Competitive UK Knowledge Economy

9th May 2007



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# i2010

## The Information Age Partnership

The Information Age Partnership was established by the DTI in 1998, to be an action oriented forum for Government Ministers and senior figures in the UK's IT, Electronics, Communications and Content (ITEC) sectors and is regarded as the key forum across Whitehall for dialogue with the IT, Electronics and Communications sectors. As such it makes contributions to Government initiatives and policy priorities combining long-term thinking with a focus on short-term deliverables.

## i2010 Working Group

Chaired by Microsoft with the DTI and several key industry representatives, the i2010 workstream has been established to meet the challenges of the EU's strategy for Information and Communication Technologies (ICT) for the period from 2006 to 2010.

# Foreword



“ICT plays a vital role in ensuring UK competitiveness in the global environment. Maintaining a thriving ICT sector and using ICT to achieve productivity improvements in other sectors is crucial to our future prosperity.

That is why I welcome this piece of work. In this report the Information Age Partnership i2010 has examined the recommendations of the European Commission’s work and what they mean for the UK, and goes on to make a number of recommendations to Government, academic institutions and the ICT industry itself.

I hope it will stimulate an informed and vigorous dialogue and that it will help all partners take the appropriate action to ensure that the UK can succeed as a highly skilled knowledge based economy in a competitive and rapidly transforming global market.

The report is the result of hard work by many individuals and a strong partnership between ICT business leaders, industry experts, academics and Government. It is this sort of partnership which will help us to put in place appropriate policies and practices to support our economic success in the future.”

*Rt. Hon Margaret Hodge* MBE MP  
*Minister of State for Industry and the Regions*

# Executive Summary

As global competition grows, so the pressure on developing the UK's knowledge-based economy increases. Knowledge-intensive industries make a higher than average contribution to national competitiveness and growth and it is therefore critical for the UK to develop, attract and retain companies in these sectors. This involves the management of many complex and often intangible factors. The tax regime and incentives for R&D are important, as is the regulatory environment and access to capital. And a skilled workforce is absolutely critical.

The IAP i2010 working group was set up by the Information Age Partnership and charged with the task of analysing aspects of the European Commission's i2010 strategy and, in particular, advising on what needs to be done to deliver the vision of an open, competitive and inclusive digital economy within the UK. The working group chose to look at the deeper issues behind the UK's objective to create jobs and wealth and to remain competitive, particularly in terms of the ICT sector's contribution to the knowledge-based economy.

This work has taken on new urgency with the news that for the first time the UK has lost its place in the elite top five nations for innovation, as measured by the World Intellectual Property Institute (WIPO.) Patents are only one of the many forms of essential intellectual property rights protection widely used by innovative businesses, including notably trade secrets. However, it is of great concern that for the first time in nearly thirty years the UK has failed to come in the top five countries for patents filed under the Patent Co-operation Treaty. In February 2007 Britain fell into sixth place behind the US, Japan, Germany, South Korea and France. This situation will be further underlined during 2007 as China is also set to overtake the UK.

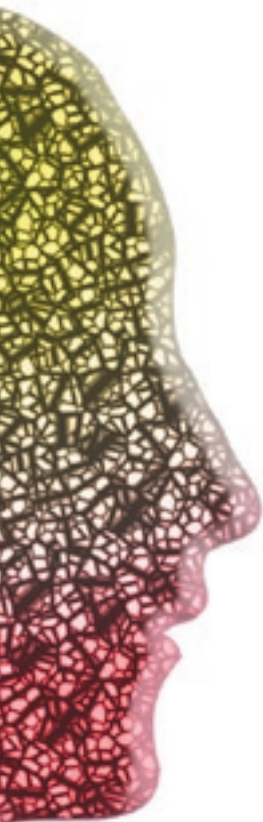
As a starting point, the i2010 working group referred to the challenges identified in the 'Developing the Future report', the position paper of the EURIM Knowledge Economy Group. The i2010 working group also organised a workshop of some thirty senior Government officials, ICT business leaders, academics and relevant experts who met on 30 October 2006 to advise on specific recommendations for what Government, industry and academia can do together to foster the right environment and conditions for a thriving and ever more successful knowledge-based economy.

When preparing this report the i2010 working group probably did not expect the main focus to be on skills, education and academia. However, during the course of our discussions with external experts, and at the October 2006 conference, it became clear that structural changes to skills and education were fundamental in equipping Britain to successfully participate in and profit from the global knowledge economy.

This focus has been clearly recognised by the Government, particularly with the publication of the Leitch report. It was also confirmed by the advice we received from e-skills UK, the sector skills council for the IT and Telecoms sector, which confirmed that unless there is significant improvement in the volume and capabilities of people entering IT careers and in the ability of companies to exploit technology, the UK economy will be seriously impacted as high level jobs are lost and UK businesses lose out to global competition.

The i2010 working group generally supports the findings and recommendations of the Leitch report and in particular, the recommendation that there be one coherent voice for UK employers for ICT skills action led by e-skills UK that represents the wider skills interests of ICT, telecommunications and communications.

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# Action Summary

## Higher education

### For Government:

- Develop a coordinated national strategy to encourage students to study subjects of national importance.
- Introduce financial incentives for post-graduate and career re-skill training.

### For academia:

- Develop varied and motivating programmes of study.

## Academia and industry

### For Government:

- Facilitate and broker a discussion between the Quality Assurance Agency (QAA), Council of Professors and Heads of Computing (CPHC) and industry that will re-examine the role of the the now defunct MSc conversion programmes and determine suitable alternative postgraduate qualifications that may be developed to meet the cross-skilling needs of industry.

### For industry:

- Engage more fully with higher education by articulating its longer term needs.
- Create a true IT profession with more rigorous certification at various levels.

### For academia and industry:

- Create more interdisciplinary research with a strong 'blue sky' commercial element and accelerate the creation of 'centres of excellence'.

## Schools

### For Government:

- Co-ordinate action and reset curriculum targets at schools to engage student interest in ICT (as distinct from computer applications usage.)
- Drive policy which makes STEM courses more attractive.
- Review the quality and resources available to careers advice.

### For industry and academia:

- Re-connect with schools to provide career advice and awareness.

## Image

### For industry, academia and Government:

- Mount a high-profile public awareness campaign to celebrate ICT achievements.
- Promote role models who understand ICT.
- Produce careers materials and events to attract and inform children.

## Investment and R&D

# Introduction

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## 1. Introduction

The Information Age Partnership (IAP) i2010 working group was established to address the challenges of EU's i2010 strategy for boosting efficiency throughout the economy through wider use of Information and Communication Technologies (ICTs). The strategy has three main policy priorities:

- Information Space – to promote an open and competitive ICT space
- Innovation – to stimulate innovation through investment in research
- Inclusion – to make ICT accessible everywhere and to everyone

The IAP i2010 workstream, led by Microsoft, focused on broadly interpreting the i2010 objectives in a UK context, initially looking at the Information Space and innovation topics.

As global competition grows, so the pressure on developing the UK's knowledge-based economy increases. Knowledge-intensive industries, such as financial services, pharmaceuticals, telecommunications and information technology, make a higher than average direct and indirect contribution to national competitiveness and growth, and it is therefore critical for the UK to develop, attract and retain companies in these sectors.

Efforts to address this involve many complex and often intangible factors. The tax regime and incentives for R&D are important, as is the regulatory environment and access to capital; and a skilled workforce is absolutely critical.

The IAP i2010 workstream has aimed to tackle the deeper issues behind the UK's objective to create jobs and wealth and to remain competitive, particularly in terms of the ICT sector's contribution to the knowledge-based economy.

As a starting point, the workstream took the five challenges identified in the recent Developing the Future<sup>1</sup> report, published by the British Computer Society (BCS), Lancaster University and Microsoft.

The five challenges are:

- A growing skills gap
- A rapidly evolving global software development industry
- Promoting the unique selling points for software development in the UK
- Increasing positive perception of the UK software development industry
- The lack of industry data solely relating to software development and other aspects of the ICT economy

Software is one of the technologies that fall under the ICT umbrella; it also encompasses hardware, electronics, mechanics, and emerging technologies, included within its systems; many of which offer unique economic opportunities for the UK. The i2010 strategy deals with ICT not only as a business itself but also the use of ICTs to support business practices across all economic sectors. In other words, ICT is a means to an end, and an end in itself – the end being a sustainable modern Knowledge-based economy. With this in mind, the workstream has referred to the recent position paper<sup>2</sup> of the EURIM Knowledge Economy Group, which asks

*“Investment in computing, science, engineering and design will stimulate innovation and prosperity for the UK, the ICT sectors make a significant contribution to our knowledge economy. Successful exploitation of innovative and creative ideas will ensure a sustainable future for us.”*

*Matthew Bishop, Microsoft UK*

# Higher Education

policy makers to reflect on how the economy would prosper if knowledge based sectors moved their operations away. That report calls for Government to act quickly and consistently to attract and retain companies in these sectors.

On 30<sup>th</sup> October 2006, a select group of senior Government officials, ICT business leaders, academics and other relevant experts met in London to advise on specific recommendations for what Government, industry and academia can do together to foster the right environment and conditions for a thriving and ever more successful knowledge-based economy.

A rapidly evolving global ICT sector presents considerable challenges for the UK. It also offers the potential for significant benefits, if enough partners are committed to creating a true knowledge-based economy. The challenges can be tackled much more effectively together than alone.

*“We are at a point in history when computer systems are becoming more complex and intellectually challenging.”*

*“The choices we make now will have an impact on where the UK sits in the global hierarchy of the future.”*

*Michael Bowkis, Microsoft UK*

## 2. Actions

### 2.1 Higher Education

Computer science and engineering in the UK have traditionally been of the highest quality in teaching, research and innovation. However, the falling number of students applying for university computer science and STEM degrees threatens the UK's leading position in ICT and will contribute to the growing skills gap in the UK economy.

Industry research estimates that the UK requires 150,000+ new employees to enter the ICT sector annually. Over 20,000 of this is growth, the remainder being replacement. Around 45% of new graduates entering the sector are from computer science courses, with 55% from other disciplines. This represents the broad range of high level skills and aptitudes required in the industry in which

60% of the sector's workforce has higher education qualifications. The UK's industry and higher education sector both operate in a globally competitive market and the Government's flexible labour market and student visa policies enable them to attract highly skilled employees and students from overseas as well as the UK. Though the UK's requirements for IT professionals who can combine technical and business process skills will continue to grow it still only represents a small percentage of the UK's total ICT workforce.

To underpin the UK's competitiveness as a global ICT location, it is essential to maintain a pipeline of technically skilled new employees. Although recent research shows an increase in take up of computer science courses overall, undergraduate enrolments are down by as much as 60% in certain areas. Just 18,000 students were accepted for computing degrees in 2005, down from 29,000 in 2001 (A trend repeated in other STEM areas.) Recruitment is a problem even among those universities that are considered to be world-class, and as a result some universities are already closing science departments.

The trend is occurring at a time when computer and other intelligent systems are becoming more complex and more intellectually challenging. The UK's vibrant computer games industry, for example, cannot fill its job vacancies and is in need of MSc graduates in computational physics and advanced maths.

While it's primarily low level jobs that are off-shored, there are concerns that higher end jobs could also go if immediate action is not taken to close the skills gap. There is a need for better educated ICT professionals, including people capable of combining computing and scientific knowledge with a greater awareness of business strategy and commercial skills, since there will be an increasing need for people who better understand the business application of information and communications technologies.

# Academia and Industry

In that respect, the work of e-skills UK in developing the employer-designed Information Technology Management for Business (ITMB) honours degree is very significant. ITMB brings together computing departments and business schools to offer an integrated, IT professional-oriented curriculum covering technical, business, interpersonal and project skills in equal measure. Initial reluctance from red brick and Russell Group universities appears to be fading with several universities including UCL, Sheffield and Manchester deciding to go ahead with thirteen universities now committed to offering the ITMB by 2007. Some universities are negotiating with e-skills UK over accrediting some of their qualifications as being ITMB equivalent; hopefully others will follow their lead.

*“A sharp focus on post-graduate studies can deliver IT skills more rapidly than relying on aligning undergraduate education with industry requirements. The velocity of evolution in the IT industry is hard to accommodate within the development constraints of undergraduate three-year programmes.”*

*Dr Andrew Tuson, City University London*

A focus on post-graduate studies can deliver ICT skills quicker and better in the short term than under-graduate programmes, as it takes only one year to up-skill a graduate. Therefore the MSc market could be stimulated by various student finance mechanisms.

## Action Required

- For Government, to develop a coordinated national strategy to encourage students to study subjects of national importance, including computing
- For academia, to develop varied and motivating programmes of study including computing as a precursor to research, computing with a high interdisciplinary content, and computing as a precursor to employment
- For Government, to introduce student financial incentives such as tax breaks, bursaries or lower tuition fees for post-graduate STEM degrees and ICT career re-skill training

## 2.2 Academia and Industry

There is little synergy between the activities of academia and the needs

of industry. Many UK universities are addressing decreasing application numbers with innovative courses in such areas as next generation computing, convergence technology and bio-technology. Other institutions remain focused on basic and outdated skills which are often of little use to the ICT industry today. At the same time, the Research Assessment Exercise (RAE) and projects funded by the Engineering and Physical Sciences Research Council (EPSRC) favour theoretical research; and university staff then work and teach in these areas whilst real-world applications are left off the curriculum.

Universities are hesitant to develop new courses or modify existing ones because the pace of change within the ICT industry may make many specific skills obsolete three or four years down the line. Lack of clarity of industry's long-term requirements, results in universities prioritising the provision of students with a firm foundation of knowledge.

The need to develop ICT skills is well understood by both academia and industry yet there is a reluctance to form partnerships with each other; there are reasons for this, but the result is that the gap between academia and industry is not being closed. The single biggest driver for successfully closing the skills gap will be through collaboration and this will require sustained and honest communication between academia and industry. One valuable step in this direction is work being undertaken as part of the Professionalism in IT (ProfIT) programme by e-skills UK to radically simplify and improve the UK's approach to IT related qualifications and learning by ensuring that qualifications are fit-for-purpose and meet employer needs

## Action Required

- For industry, to engage more fully with higher education by articulating its longer term needs to higher education, and through involvement in providing career development mentoring and real time work experience of STEM students

# Schools

*“Computing is about creating some of the most innovative brands, products and services driving the UK economy.”*

*Matt Lambert, Director of Govt. Affairs  
Microsoft UK*

- For academia and industry, to create more interdisciplinary research with a strong 'blue sky' commercial element. Also, to accelerate the creation of 'centres of excellence' that allow universities to work in collaboration with industry on solving high impact global issues
- For industry, to create a true IT profession by developing more rigorous certification at various levels. Care needs to be taken to avoid confusion and ever more qualifications, but structuring what already exists in a client and industry-friendly way and industry-wide agreement to common training standards would support professional development
- For Government, to facilitate and broker a discussion between the Quality Assurance Agency (QAA), Council of Professors and Heads of Computing (CPHC) and industry that will re-examine the role of the now defunct MSc conversion programmes and determine suitable alternative postgraduate qualifications that may be developed to meet the cross-skilling needs of industry.

## 2.3 Schools

There remains confusion in schools as to the difference between studying computers and using computers as an enabler in teaching other subjects (or business). The focus within the curriculum is on ICT use with teachers viewing the study of computing as, for example, learning how to use a word processor or spread sheet. Learning to use a computer and learning Computer Science become indistinguishable as far as students are concerned.

An emphasis on ICT as an end in itself can be a distraction to young people and to the educational establishment, but more prominence needs to be given to technology's contribution to creating and sustaining a modern economy. To go on to higher education, students need to understand something about ICT just as they need to be able to do maths and

to write an essay. Some will come to specialise in ICT but many more will be involved in creating and sustaining the endpoint of a knowledge-based, innovative economy. Young people therefore need to be shown the end result of computer science and not just the nuts and bolts of computing. They need to see that, rather than just sitting in front of a screen, computing is about creating some of the most innovative products, services and brands driving the UK economy. The development of the curriculum for the IT Diploma for 14-19 year olds by e-skills UK, other sector skills councils, the QCA, employers and other partners is a positive move to address some of these issues. The Diploma is being developed with tiered achievement levels: level 1 (equivalent to 4-5 GCSEs), level 2 (equivalent to 5-6 GCSEs) and level 3 (equivalent to 3 A-levels.)

The Computer Clubs for Girls, an e-skills UK initiative, has been designed to enthuse girls about IT by using content on issues that interest them and challenge the negative perceptions of careers in technology. The spread of this initiative should be encouraged and perhaps the lessons learnt might be applied to an initiative for boys too. The i2010 working group also noted that the Radio Communications Foundation ran similar projects to promote career prospects in radio communications.

## Action Required

- For Government, to coordinate action and reset curriculum targets in schools to engage student interest in ICT early, focusing as much on creation of, as on usage of, productivity tools and developing pupils' ability to work together in teams
- For Government, to drive policy which makes essential STEM courses more attractive than alternative 'softer' subjects by raising standards in maths at an early stage
- For Government to review the quality of resources available for careers advice and consider further input from industry

# Image

*“The overwhelming success of many large and innovative ICT projects goes un-reported. The truth is that project failures are typically the fault of poor management rather than technological failure.”*

*Michael Bowkis, Microsoft UK*

- For industry and academia, to reconnect with schools to provide career advice and make youth aware of the availability of creative and innovative university programmes in ICT

## 2.4 Image

Declining university enrolment in computer science courses is an indicator that ICT is not seen by young people as something interesting and trendy. This is largely due to the negative image pervasive in the UK media of the stereotypical anti-social male ‘geek’. That image is one factor that affects the diversity of the ICT workforce – only 1 in 5 of the UK’s IT professionals are women and skills shortages are always higher in sectors where one gender is dominant. The Computer Clubs for Girls programme mentioned in section 2.3, is a positive development in improving the image of computing and technology with young women. Work being done by e-skills UK, the DfES and others to review and improve the careers information and advice to young people and students could be critical to improving the image of the industry.

The press also disparages the ICT industry with stories of high profile IT disasters in government and business, project over runs and poor budgetary control. The truth that such project failures are usually failures of management and rarely failures of technology is usually ignored. Similarly the overwhelming success of many large and innovative ICT projects goes unreported. The dot com hangover and the off-shoring of jobs and skills overseas are further sources of negative publicity.

All these images affect public perceptions of the ICT sector and discourage young people from choosing this as a career even if they perceive its existence. Parents and teachers, who do not appreciate its breadth or scope, do not encourage children to study computing because they do not see it as an industry with opportunity. A more positive image of ICT careers could assist in improving the recruitment and retention of young women and men in ICT and thereby help in addressing skills shortages.

Much of the criticism of the ICT profession is due to misconceptions by the media, by the public, and by Parliamentarians, of what ICTs can deliver. There is often little understanding or appreciation of the extent of the application of ICT in the economy and society.

## Action Required

- For industry, academia and Government, to mount a high-profile public awareness campaign to celebrate ICT achievements and the UK’s world-leading success in research and innovation.
- For industry, academia and Government, to promote role models, including parents, teachers, politicians and media personalities, who understand the excitement and opportunity associated with a career in ICT.
- For industry, academia and Government, to produce, for example, careers materials, events, and competitions that will attract and inform children before they have to make curriculum choices that could route them away from careers in ICT.
- For industry, academia and Government to illustrate the difference between the use of ICT, and the creation and deployment of ICT.

## 2.5 Investment, R&D, Commercialisation & Procurement

### Investment

While the UK private equity industry is the largest and most developed in Europe, when investment in mid to large buy-outs is excluded, the UK venture capital sector significantly lags that of the US. The UK institutional reluctance to invest in early stage capital reported by Paul Myners is supported by VC’s poor performance relative to other asset classes. However, there has been no serious policy review to determine how to address the issue.

The success of AIM, the London Stock Exchange’s ‘light touch’ international market for smaller growing companies

# Investment and R&D

and now the most successful growth market in the world, has gone some way to redressing that imbalance by demonstrating that public equity can provide an important alternative to private equity for institutional investment. The preservation and promotion of AIM is therefore imperative.

Important incentives to ICT development, particularly for small and medium sized companies, are research and development (R&D) tax credits, first introduced by HM Treasury in 2000. Overall, the tax credits have been relatively successful with the system working best for smaller companies and start-ups. For large businesses, tax credits tend to be worth only 3 or 4% of the total of their development budgets, not enough to persuade a large company to change its R&D investments in the UK.

The R&D tax credit scheme could be extended to include the cost of registering a patent by smaller companies and other forms of intellectual property (IP) protection. Registration costs and legal fees for world-wide protection run to many thousands of pounds and act as a disincentive to patent protection of the IP in inventions and innovations. The ownership of a strong IP portfolio by a small innovative company may act as an attraction for investment capital and help stimulate innovation by small companies and entrepreneurs. Although the Gowers Review came up with a number of measures to promote the effective protection of IP by smaller companies it was disappointing that it did not address practical measures like the extension of the R&D tax credits system.

Further, R&D tax credits could be extended to include capital expenditure on R&D which is currently excluded in the UK but permitted in similar schemes in other countries, in, for example, Canada. Many companies capitalise manpower costs. The UK scheme therefore excludes from relief the very work and investment it is trying to promote. R&D tax credits could

also be widened to allow the cost of overhead activities indirectly supporting R&D work to be included.

## Commercialisation

The paucity of experienced venture capitalists leaves British early stage companies without the hands-on expertise-plus-capital boost enjoyed by their transatlantic competitors. The causes of this are many but the effects are a less robust emerging technology sector on this side of the Atlantic characterised, at least anecdotally, by the UK and Europe having traditionally had a more risk averse and less entrepreneurial culture than the United States.

One reason for this is a European governmental policy focus on supply side capital rather than demand side. Governments are willing to provide the grants, debt and equity capital needed to bootstrap young businesses while being reluctant to purchase goods or services from them. Switching policy to the demand side would close the circle by shifting emphasis from aid to trade.

Although a necessary component, it is not the supply of capital that determines a company's ability to generate wealth, the measure of success is a business' ability to generate profitable sales. This is best described in the hoary aphorism: "revenue is the highest form of equity capital."

The challenge faced by emerging UK businesses is to find sufficient numbers of customers willing to take risks by buying their innovative technologies from younger suppliers. While the private sector can justifiably argue that it is not in the business of taking benign risks, Government cannot use this argument.

## Procurement & SMEs

Explicit Government procurement from indigenous suppliers would inject a combination of vital commercial discipline as well as cash into a revenue-strapped sector. It should be noted that this need not be affected by direct Governmental purchasing. Rather, taking a lesson from



# Procurement and SMEs

*“Revolutionary though this apparently Keynesian utopia may seem, it is already being practiced in the USA with remarkable success.”*

*Matt Lambert, Director of Govt. Affairs  
Microsoft UK*

energy credits, large contractors to the government could be required to include local content in their solutions in order to qualify for tender processes.

Revolutionary though this apparently Keynesian utopia may seem, it is already practiced by the US Small Business Administration whose charter mandates them to ensure that close to 25% of Federal procurement dollars are spent with SMEs. In this respect the Government should consider developing the Small Business Research Initiative (SBRI), which currently places 2.5% of the Government's external R&D funds with SMEs.

The current SBRI operates very effectively on the supply side by supporting R&D investment that can lead to increasing technological development and growth in innovation.

If the SBRI programme were to be extended to include mechanisms that would operate on the demand for products and services from SMEs then the impact on growth would be significantly improved.

In essence the belief is that if the Government procurement process could be altered in a manner similar to the current US system that requires Federal Government to buy products and services from SMEs then growth in the ICT sector could be accelerated. It is recognised that this would require a change in EU law and WTO rules or perhaps just in their interpretation and implementation by the UK Government.

The US Federal Government purchased goods and services valued at approximately \$100 billion from small businesses in 2003. If a similar programme were adopted for the UK it could mean that approaching £8bn would be injected into stimulating growth in the UK SME sector.

The US Congress Information Technology Management Reform Act (ITMRA) included a section to encourage agencies to create multiple-award, multi-agency contracts,

government-wide acquisition contracts or GWACs - for the purchase of IT goods and services.

The USA SBA report (The Impact of Government-Wide Acquisition Contracts on Small Business, 4 August 2006) showed that “Of the 23 identified GWACs, 22 showed reported dollars that totalled \$16 billion in transactions between 1995 and 2004. Of this amount, small firms received \$4.97 billion, or 31%, of aggregated GWAC spending.”

By applying this initiative in the UK it could be argued that this would have added around £0.43bn to the UK IT SME economy alone over the same period.

More generally Government procurement systems should be assessed to ensure fairer access for SMEs to ensure that the Government achieves value for money and accesses innovative solutions. Government's procurement in turn needs to assess and prepare for future needs, seeking out and trying innovative solutions that create public value and offer productivity and efficiency gains or cost savings. Very often bureaucratic rules and conditions are too onerous for SMEs and they cannot compete fairly with larger companies which have the resources to more effectively manage these requirements. Specific measures that should be considered include:

- Ensure ease of access and refresh times for catalogue such as pre-checked supplier lists for procurement
- Allow fair supplier friendly terms and conditions covering ownership of IPR and code escrow conditions
- Avoid imposition of software licenses that differ from industry norms
- Avoid excessive time-scale and bid cost for suppliers; encourage business-to-business collaboration where scale or resource issues would otherwise mitigate against SMEs
- Improve open market communications on procurement plans and opportunities

# Industry Data

- Do not impose artificial competition for truly unique market offerings
- Do not use unlimited supplier liability and limit liability appropriately to size and scale of the procurement
- Monitor supplier diversity

## Action Required

- For Government, to protect the UK's regulatory environment and promote public capital (from which private capital will follow). In this context the passing of the Investment and Exchanges Clearing Houses Act 2006 should be applauded
- The Government should extend R&D tax credits to include the patent process and other IP protection costs for smaller companies, capital expenditure and the cost of overhead activities indirectly supporting R&D work including the costs of external contractors
- For Government to make it easier for private investors to engage in first stage risk investment, without the regulatory overheads and expense associated with formal prospectuses issued by 'approved' persons
- For Government to consider establishing an institutional review to enable UK institutional investors to determine the systemic causes and remediation of their aversion to investing in venture capital
- For Government to consider further developing the SBRI concept by placing a significant proportion of public spending on R&D and other contracts with those small firms who are most likely to innovate
- For Government to assess public sector procurement systems to ensure fair access for SMEs

*“Don't forget the value of ICTs, they are a means to an economic end and an economic end in themselves”*

*Ian Phillips, Strategic Technologist, ARM*

## 2.6 Industry Data

It is accepted that ICT is at the heart of the UK economy and is a key source of competitiveness for all sectors, yet there is little reliable statistical data on the technology industry. It is currently not possible to accurately measure the unique selling points, key skills and economic contribution of the industry to the economy, nor is there even agreement as to the definition and size of the industry's constituent parts. Without an analytical means to evaluate the successes and failures of each component of the ICT industry it is difficult to know where to invest for the future and to devise policies that will facilitate growth and innovation.

It would also be valuable for the Government to develop an algorithm to quantify the contribution and value of enterprises to the UK economy. This could be used to assess the industries and sectors most worthy of support.

The lack of reliable data also contributes to the misunderstanding of the industry by the public, parliamentarians, media, investors and even peers within the business community. Progress on improving industry data depends on progress with the 2007/8 system for industry and product classification which is a work in progress. The OECD Working Party on Information Society Indicators has published recommendations on this but the most urgent need is for internationally comparable frameworks which are consistently applied across the EU and internationally including the OECD.

The importance of good data on skills training in the UK should not be underestimated. The Leitch report has recommended that industry data should be within a focused sector skills council remit.

# Economic Data

*“The importance of good data on skills training in the UK should not be underestimated.*

*The Leitch report has recommended that industry data should be within a focused sector skills council remit.”*

*Michael Smith, ARU*

## Action Required

- For industry and Government to define criteria on how the ICT industry should be measured
- For industry and Government to collect and separate out baseline data on specific

sub-sectors from data relating to the ICT industry as a whole

- For Government to develop an algorithm which can be used to assess the contribution of enterprises to the UK economy/national wealth

## References

1: Microsoft Ltd. June 5 2006, “Developing The Future” [http://download.microsoft.com/documents/UK/citizenship/Developing\\_the%20\\_Future2006.pdf](http://download.microsoft.com/documents/UK/citizenship/Developing_the%20_Future2006.pdf)

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# Acknowledgements

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