

# 9 Supporting Innovation and Celebrating Excellence

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'The UK deservedly has an international reputation for outstanding science and technological discoveries. However, using these advances to bring commercial success has been a harder nut to crack, despite the fact we have a long line of individual entrepreneurs who act as inspiring role models', wrote Alun Michael, Minister for Industry and the Regions in *Computing* (Michael, 2005). 'We live in a world that continually raises the bar of performance, posing significantly greater challenges to us from other countries than we have had in the past' (Michael, 2005).

Never has it been so important for UK-based IT professionals to use their skills and knowledge to exploit the possibilities that IT offers, to innovate and improve. This places new demands on us.

'There needs to be a convergence of understanding between IT experts and non-experts so that there can be a constructive dialogue to drive value from new synergies through bringing together the two domains of knowledge. How are organizations to innovate if the technologists do not explain the potential benefits to their non-technical colleagues in terms they can understand and act on?' asks Dr Edward Truch, Director at the Centre for Innovation in IT (Truch, 2005). 'IT professionals must embrace the business application, be prepared to stand on the bridge between disciplines and get involved in the strategic business decisions. Much of innovation, on which businesses increasingly rely for success and survival, comes from the intermediate spaces between departments and disciplines' (Truch, 2005).

Compared with some of our overseas competitors, in the UK we are often reticent to celebrate our achievements and successes. Many of the world's leading innovators are to be found in the UK. Amongst the World Economic Forum's Technology Pioneers 2006 there are eight UK companies. Out of a total of 36 Technology Pioneers, only the USA boasts more companies than the UK. To be selected as a Technology Pioneer, a company must be involved in the development of life-changing technology innovation and have potential for long-term impact on business and society (World Economic Forum, 2005).

BCS has for many years celebrated and promoted the best of the UK's success stories through the Professional IT Awards scheme. This chapter includes examples of recent award medallists.

## **BOX 9.1 PROMOTING RESEARCH AND DEVELOPMENT (R&D) IN THE UK: INTELLECT'S CAMPAIGN**

There was good news for the IT industry in the Chancellor's pre-Budget report in December 2005. He announced that the government would support innovation by improving the R&D tax credit scheme, to ensure that specialist tax inspectors deal with all small business tax claims and that these inspectors would be trained to understand software and engineering R&D processes.

Tom Wills-Sandford, Director of Public Affairs at Intellect, writes about the Intellect campaign that lies behind these announcements:

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Innovation and R&D are not the same thing but they are strongly linked. You can innovate without R&D, but exploitation of R&D will always lead to innovation. Intellect has long been concerned about the low level of R&D in the UK, as indeed has HM Treasury. Currently we invest 1.9 per cent of gross domestic product in R&D. The government's target is 2.5 per cent by 2014, even though the European Union's target is 3 per cent by 2010.

Intellect has campaigned on this issue for several years. An R&D tax credit for small and medium businesses was introduced in 2000, and for larger companies in 2002. The small and medium business scheme provides a much greater financial benefit, and if the business is loss making (and therefore in no position to benefit from a tax credit) the company can actually get cash back. This scheme is credited with ensuring the survival of a number of hi-tech businesses. On the other hand, the large company scheme provides a 25 per cent tax credit on eligible R&D expenditure, which after corporation tax is a 7.5 per cent benefit. When ineligible costs such as premises and IT services (in support of the R&D) are excluded, we estimate that the incentive is somewhere between 3.75 per cent and 5 per cent of the project cost.

We believe that the tax credit should also be an incentive to multinationals to undertake R&D in the UK. Intellect has characterized the large company incentive as in the 'noise level' and not a sufficient incentive to invest in the UK. HM Treasury has consistently stated they have no plan to increase the rates.

Tax inspectors who lack expertise have regularly dismissed software development and engineering design projects. Inspectors find it easier to grasp the significance of new molecules (in pharmaceutical research) or chip design than software development. One tax inspector even turned down a claim because the work used a standard computer language – a bit like saying you can't build an interesting home if you use bricks!

After much campaigning by Intellect, HM Treasury and HM Revenue and Customs have now agreed that tax inspectors need some training in the software industry. We hope that Intellect will start running these courses in 2006 using industry professionals.

## **CENTRE FOR INNOVATION IN IT**

The Centre for Innovation in IT was formed by KnowledgePartners to promote thought leadership in the delivery of innovation through IT. The aim is to bring together business practitioners, industry leaders and experts to help organizations facing new IT innovation challenges. BCS is a key sponsor, alongside EDS, Microsoft and Unisys. Research is carried out in collaboration with InfoLab21 and the Management School at Lancaster University. The Centre has built on the experience of establishing the Knowledge Management Forum at Henley Management College, developing an international reputation and collaborating with thought leaders around the world. Current research activities include innovation and business value; IT governance; and transformational outsourcing. Edward Truch, Director of the Centre, observes:

**Our research has found that successful IT-enabled innovations blend hardware and software assets with business capabilities to generate a novel process, product or service. Technology alone is not enough.**

**Companies using IT to innovate rarely have all the necessary competencies in-house. They need to adopt an open approach, identifying the gaps and seeking out constructive ways to bring the required new skills on board. The barriers to innovation include:**

- pressure for quick wins in terms of sales volumes;
- financial assessment techniques that give priority to risk minimization;
- failure to recognize the limitations of technology and an emphasis on what worked in the past rather than what is needed for the future;
- organizational structures and financial systems built around current products, technologies and market segments that are inflexible and inhibit change.

Company culture is key – strong leadership that supports innovation is pivotal. An environment that encourages communication and knowledge sharing across organizational boundaries is vital.

### **BOX 9.2 CELEBRATING SUCCESSFUL UK PROJECTS (1): SCOTTISH EXECUTIVE**

The Scottish Executive's eProcurement Scotl@nd service is enabling the entire Scottish public sector to win the cost savings and efficiencies of eprocurement. The project, to design and implement the service, was arguably the world's most ambitious ever undertaken in the eprocurement field, its scope being nothing less than the public sector of an entire nation. The service makes it easy for suppliers, from multinationals to local small and medium businesses, to work with the public sector. More importantly, it is making Scotland a better place to do business, promoting investment, employment and economic activity.

The eProcurement Scotl@nd programme was a BCS business achievement award medallist in 2005. It was also a winner of the Aberdeen Group Best Practice Award 2005, a finalist in the eGovernment Europe Awards 2005 and a winner of the Information Management Award 2004 for business-to-business commerce.

Following an international competition the Scottish Executive selected a bid led by CapGemini that included Elcom's PECOS Internet Procurement Manager and Dynamic Trade Centre offerings. Elcom provides a fully hosted eprocurement solution, a common platform that includes e-sourcing capabilities as well as the transactional purchasing functionality. The service is designed to carry out transactions with any supplier, from small and medium businesses to multinational companies, supporting the Scottish ministers' intention of making Scotland the easiest and best place to do business with the public sector.

The underlying objective of the service is to accelerate large-scale change in the conduct of public sector procurement in Scotland. eProcurement Scotl@nd is a business change programme that sits at the heart of the Efficient Government agenda, locking procurement practice and process improvements into place through the use of 'e' tools, driving forward public sector excellence, encouraging investment, employment and economic activity. The take up of the system is well ahead of schedule.

The target of 50 public sector organizations using eProcurement Scotl@nd by the end of 2005 was exceeded. More than 10,000 suppliers have received orders through the system and this figure is expected to grow as major organizations that are currently implementing the system begin live roll-out. The Scottish Executive believes that more suppliers are enabled on eProcurement Scotl@nd than any other public sector eprocurement programme in Europe.

eProcurement Scotl@nd recognized the need to use existing ICT service management and programme management skills within the Scottish Executive. Ian Burdon, Programme Sponsor, and Steve Murray, of the Scottish Executive, believe that

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understanding business needs is more important than IT knowledge. Most of their IT professionals are hybrids of a sort: business orientated rather than technology specialists.

**As to the future of IT professionals we have no doubt that those that take the time and have the ability to understand particular business areas will contribute more to the success of that business than those that don't. More than likely businesses that can offer a career path to IT professionals will reap more benefit than those that try to resource on a piecemeal basis from wherever they can get the skills. Having said that, most businesses can't afford to resource the wide breadth of IT skill-sets required nowadays – so will inevitably have to look somewhere externally.**

This information was provided by eProcurement Scotl@nd.

Further information on eProcurement Scotl@nd can be found at [www.eprocurementscotland.com](http://www.eprocurementscotland.com).

## BCS PROFESSIONAL AWARDS

BCS award schemes have been recognizing outstanding achievement in IT and IT management for more than 30 years. The BCS IT professional awards have established an unrivalled reputation for integrity, thoroughness of judging procedures and the high standard of winners. To win a BCS award has always been regarded as the pinnacle of achievement, conferring prestige and recognition upon the winners, and also upon the organizations that they represent.

Standards of sophistication and skill in the IT world are continually developing. The role of IT and its effective management is critical in most, if not all, areas of business. These awards recognize, promote and honour excellence, professionalism, innovation and outstanding achievement by individuals and groups. The BCS IT professional awards are a showcase of talent and achievement in the IT profession, illustrating the high standard of management, development and commitment to excellence within these organizations.

Major topic areas include:

- technology (four categories), encompassing excellence in computing, within the context of business value and social benefit;
- business achievement (five categories), for excellence in IT management and for impact on organizational performance;
- individual excellence (10 categories), including IT trainer, IT director, IT project manager and IT consultant.

New categories recently introduced are:

- women in IT, for organizations demonstrating how they have enhanced opportunities for women in IT;
- mobile computing, for organizations demonstrating how they have implemented a mobile strategy;
- investment in security, for organizations that demonstrate excellence in a business-orientated approach to information security.

The BCS IT professional awards present an important opportunity to recognize and celebrate the outstanding achievements and successes of all UK IT practitioners.

This information was provided by Anna Duckworth, BCS Head of Corporate Marketing. Further information can be found at [www.bcs.org/awards](http://www.bcs.org/awards).

### **BOX 9.3 CELEBRATING SUCCESSFUL UK PROJECTS (2): ROYAL BANK OF SCOTLAND**

The Royal Bank of Scotland Group acquired Churchill Insurance in September 2003 and decided to integrate this business with its own Direct Line Insurance to form the UK's second largest general insurer. The combined organization operates from a single business operations model and a common IT platform, whilst servicing many brands: as well as Direct Line and Churchill the business/IT platform services scores of blue chip partner brands. In 2005 the Direct Line/Churchill integration was a BCS business achievement award medallist. Steve North writes about this highly successful programme:

The key dates were:

- November 2003 – business/IT integration plan agreed;
- April 2004 – first Churchill policies sold off common (Direct Line-based) platform;
- January 2005 – application systems integration complete;
- December 2005 – all Churchill policies migrated to common platform on renewal;
- end December 2005 – infrastructure integration complete and Churchill IT fully decommissioned.

The speed of execution was phenomenal. The Royal Bank of Scotland Group was committed to driving the integration as quickly as possible as financial benefits were very large and the programme had the potential to be disruptive to normal business. The total Royal Bank of Scotland Insurance application development headcount was 400, but the project had to ramp up to 700 staff within weeks. Clearly a key success criterion was fast issue resolution and decision-making. There were many different business units involved and managers had to sustain and grow current businesses as well as support integration. This led to significant day-to-day conflicts that had to be expertly handled by the IT team who, unusually, were driving the businesses rather than responding to them.

Of paramount importance was maintaining customer service. This was especially difficult given the speed of IT change, which meant taking well-judged risks with clear mitigation plans. The need for excellent risk management, coupled with business tensions, led to the creation of special governance bodies. The Chairman of Royal Bank of Scotland Insurance chaired a weekly Executive Steering Group, which took the really hard trade-off decisions to keep both business growth but especially integration on track. A group IT executive chaired a twice-weekly Technology Integration Board to drive through the IT integration. Key business and IT heads attended these sometimes gruelling sessions and ensured that if risks were taken they were fully understood and bought into, and that contingency plans were robust.

The project was a resounding success. The most aggressive schedule possible was set and met, budgets were tightly managed and the financial benefits and payback period beat the plan. This was a shining example of very tight inter-working between IT and business, together with an absolute commitment to deliver.

## **INFLUENCING ACADEMIC RESEARCH**

As the learned society for computing and computer science, BCS plays a significant role in the development of the academic discipline and research carried out in the UK. Mike Rodd, BCS Director of Learned Society and External Relations (and an Honorary professor at several UK universities), comments:

A high percentage of the original research which resulted in, and continues to fuel, the computer revolution originated in the UK. Regretfully, to the economic detriment of the nation, much of this research has been exploited elsewhere. Still to this day, however, the UK leads the world in many significant areas of research and it is essential that we maintain this key unique advantage. BCS is, therefore, determined to do everything possible to assist in setting and sustaining the UK's research agenda, especially through active support for the Engineering and Physical Sciences Research Council (EPSRC), the UK Government's leading funding agency for research and training in engineering and the physical sciences. BCS also is one of the two parent bodies of the UK Computer Research Council, a membership organization established to promote the very best in UK research.

In 2006 BCS is organizing the third in a series of conferences, *Grand Challenges in Computing*, dedicated to setting the research agenda for the next decade (Hoare and Milner, 2005; McGettrick *et al.*, 2005).

### International reviews

Introduced and organized by the relevant research council, regular international reviews provide a broad perspective on the research activity in a particular discipline in the UK. In each review an invited panel of international leading researchers benchmarks the strength of the UK research activity against world competitors and highlights any gaps or missed opportunities. The panel visits a number of UK research groups and has access to a wide pool of experts and supporting data.

An international review of UK research in computer science in 2001 found strength and international leadership in the following areas:

- logic semantics and formal methods within the theory community, as well as activities in quantum information processing;
- programming language design, enhanced by strength in logic, semantics and software engineering;
- technologies that contribute to system trustworthiness, including software engineering, security and dependability;
- architectures and algorithms for the design of real-time and embedded systems;
- artificial intelligence areas of speech engineering and computational linguistics, machine learning, artificial neural networks, computer vision and automated reasoning;
- human-computer interaction;
- bio-informatics.

The review warned that the UK's position was at risk and that the quality of research was declining in some fields. The global market for highly skilled computer scientists was very competitive and academic salaries and working conditions in the UK were not competitive. Many academics therefore pursue careers in industry. Research funding was low by international standards and processes for awarding grants lacked flexibility and discriminated against research proposals in high-risk or novel or interdisciplinary subjects.

### **BOX 9.4 LARGE-SCALE COMPLEX IT SYSTEMS INSTITUTE**

As IT systems become larger and more complex, businesses critically need to be able to specify, analyse and predict system behaviour. The International Review of

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Computer Science and a workshop organized by EPSRC identified a significant shortage of skilled personnel with relevant experience. There is an urgent need to improve understanding of large-scale complex systems to support the growth of the UK's knowledge economy and the implementation of IT strategies in private and public sector organizations.

A new Institute in Large-Scale Complex IT Systems is being established, funded by EPSRC in partnership with industry. The Institute's research will focus on understanding what it is about large-scale systems that makes them so complex and difficult to manage. Researchers will identify issues that cut across different industrial sectors and investigate how to design systems.

Key objectives for the Institute will include:

- being a conduit for knowledge transfer, including the formal capture of real-world experiences;
- generation of relevant expertise and appropriate training;
- focusing on real-world problems and application domains;
- being recognized as a world-class centre, attracting internationally leading researchers and users;
- drawing on expertise from many different disciplines;
- work on current problems extrapolating to future user needs, generating principled approaches, identifying cross-cutting issues and the need for new tools;
- connecting with and being complementary to existing initiatives, within the UK, the European Union and beyond;
- achieving industrial impact via joint academic and industrial work focused on a 3–10-year timescale.

The Institute will train researchers to doctorate level in aspects of large-scale complex IT systems, with students spending 25 per cent of their time training in universities and the rest of their time in industry.

Further information can be found at [www.epsrc.ac.uk/researchfunding/programmes/ict/lscits/institute.htm](http://www.epsrc.ac.uk/researchfunding/programmes/ict/lscits/institute.htm).

A new international review will be carried out in 2006 with a wider remit, encompassing all ICT research. The objective is to assess the current state of UK-based research, identifying strengths and weaknesses and recommending, primarily to government, future funding strategies. The exercise is extremely important for any academic research organization and the role of BCS is, therefore, vital. BCS is one of four organizations coordinating the review, the other organizations being IEE, Intellect and EPSRC.

### **BOX 9.5 CELEBRATING SUCCESSFUL UK PROJECTS (3): DRIVER AND VEHICLE LICENSING AGENCY (DVLA)**

On 10 January 2006, Transport Secretary Alistair Darling, with the help of super model and amateur racing driver Jodie Kidd, officially launched DVLA's Electronic Vehicle Licensing (EVL) service. The formal launch of EVL represented a huge milestone in the government's modernization agenda. The service was developed in response to

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customer demand, which showed that up to 60 per cent of the UK mainland population expressed a keen interest in the ability to tax their vehicles online or over the telephone. EVL was a joint initiative between DVLA and IBM, demonstrating the ability of the public and private sectors to work together for the benefit of the consumer.

EVL was first introduced in February 2004 and aimed to make it easier for motorists to buy road tax or declare a Statutory Off-Road Notification (SORN), by allowing customers to carry out these transactions through the internet or by telephone. The service was initially introduced to invited customers whose vehicles did not require an MOT certificate. Since September 2004, take-up of the service has been growing progressively. In July 2005, the service was extended to include Heavy Goods Vehicles (HGV) and Public Service Vehicles (PSV) tax classes. Payments can be made by debit or credit cards.

Expansion of the service is dependent on the roll-out of the new computerized MOT database at the Vehicle and Operator Services Agency (VOSA). From then on increasing numbers of motorists will become eligible to take advantage of the electronic channels for relicensing their vehicles.

Press coverage of the national launch was extensive, taking in national newspapers such as the *Sun* and *Telegraph* as well as Radio 1's News Beat and Steve Wright's Drive Time on Radio 2 and a series of 25 local radio interviews. The national launch was only the start of raising the EVL profile. A series of regional launches in 2006 that began in Wales continued covering several major cities the length and breadth of the UK, ending in Glasgow and Edinburgh.

This information was provided by Sue White and Carolyn Williams, Customer Services Directorate, DVLA.