

Offshoring

A Challenge or Opportunity for British IT Professionals?

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Report by The British Computer Society
Working Party on Offshoring
November 2004



THE BRITISH COMPUTER SOCIETY

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The British Computer Society,
1 Sanford Street,
Swindon, Wiltshire SN1 1HJ
UK
<http://www.bsc.org>

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Preface and Acknowledgements

Information technology professionals are constantly adapting to change. New technologies, changing business demands and economic factors all influence IT career choices and training needs. In the last decade advances in telecommunications and collaborative web-based project tools have opened up a new phenomenon in the IT service industry – the concept of transferring professional IT activities to overseas workers or offshoring. This sometimes controversial trend looks set to have a significant impact on the British IT profession in coming years.

Having developed an initial short policy statement on offshore outsourcing, the BCS decided to set up a small working party to examine this trend in greater depth, to contribute to the development of policy in this area and to draw up a set of recommendations.

It has been my privilege to chair this group and I am enormously grateful to the members of the working party who have contributed so willingly and constructively to our discussions and this report. Members each brought relevant specialist knowledge and experience to the debate. Ian Durrant represented the Professional Contractors' Group (PCG) on the group. We welcomed the different perspective that PCG brought to our discussions and I am very grateful for Ian's input. The working party was also fortunate to receive a written contribution from Natarajan Chandrasekaran, a BCS member based in India, giving us an offshore perspective.

We were also greatly assisted by the research carried out for us by Anna Round of the Council of Professors and Heads of Computing. Working party members found the information that Anna identified extremely useful and it helped our analysis and understanding of the UK IT workforce.

Offshoring provides an opportunity to source IT services at low cost. At the same time it is of great concern to many members. While some fears may prove to be unfounded, we believe that it is crucial that we take action now to develop a strong IT profession that meets future business needs and contributes to the well-being of the UK economy.

Elizabeth Sparrow
Chair, BCS Working Party on Offshoring

1 Executive Summary

Information technology has always been a powerful change agent and has affected the way many people work. Early computer systems were often linked with job cuts and many people have had to adapt to new working methods and career changes brought about by the introduction of IT. Today IT professionals face the possibility that many of their jobs will be transferred overseas. There is no going back – IT services have become a global industry. We must look to the future to exploit new opportunities and help those individuals displaced by offshoring.

1.1 THE IMPACT OF GLOBALIZATION

Companies integrate offshore IT resources into their operations in many different ways. Some choose to outsource to offshore suppliers while others set up their own offshore development centres or ‘captive sites’. Established service providers such as EDS and Xansa are themselves transferring some work overseas, responding to the need to remain competitive in the global marketplace.

Although the offshore market is growing fast, it represents only a small percentage of the overall global IT services market. The UK is the biggest European offshoring market and India the main destination, but France and Germany are increasingly turning to North Africa and Eastern Europe. Worldwide there are more than 380,000 export-focused IT professionals working in the offshore industry (Aggarwal and Pandey, 2004).

To assess the impact on UK jobs we need to review current employment levels and recent trends. About 884,000 IT workers are currently employed in the UK and fewer than 4 per cent are unemployed (*e-skills Bulletin*, 2004). Various industry surveys suggest a higher unemployment rate, but we examined this in detail and concluded that the survey methods they use make their data less reliable than the official statistics. Government policy is based on the official statistics.

Many factors influence the number of IT jobs within the UK economy and it is difficult to measure with precision the job losses caused by offshoring. Various predictions have been made about future years. Evalueserve (Evalueserve-NASSCOM, 2003) estimates that, by 2010, 102,000 IT and software jobs will have been offshored from the UK, which is equivalent to about 12 per cent of today’s IT workforce. IT is in the forefront of the offshoring trend, which will impact many other sectors including financial services, market research, legal services, architecture and engineering design. Forrester Research (Parker, 2004a) have estimated that 150,000 pure IT jobs will move offshore from Europe by 2015.

The majority of mainstream economists argue that a free global market, without protectionist measures, benefits all countries. Competition leads to greater productivity and innovation, resulting in the creation of new jobs to replace those lost through offshoring. Those few economists who express doubt about the positive impact of offshoring argue not for protectionist measures but for government policies to help workers displaced by this trend. Many high-wage countries also have ageing populations. Labour shortages in future years will need to be tackled through a combination of immigration, offshoring and longer working lives.

There is still a perception amongst some IT professionals that offshoring can do only damage to the UK economy. Media reports often anecdotally highlight difficulties caused by specific offshore activities and perhaps exaggerate the general level of dissatisfaction. The continued growth of the offshore market and gradual growth of the UK economy overall paint a different picture.

1.2 PROMOTING THE COMPETITIVE STRENGTHS OF BRITAIN'S IT PROFESSION

The emerging global IT services market opens up opportunities for British IT professionals to work overseas and to provide services from the UK to world markets. But we need to objectively and critically review our performance in comparison with the best in the world. Otherwise we risk underestimating the competition we face and the capacity of overseas workers to provide high-quality, cost-effective services. If we do not understand our current competitive advantages we may lose out on new opportunities.

The working party carried out an initial SWOT (strengths, weaknesses, opportunities and threats) analysis for the UK IT profession in comparison with the best in the world and some of the key points are highlighted below:

- Strengths:
 - ◆ software innovation and hardware pioneering developments;
 - ◆ leading-edge technology skills;
 - ◆ experience in managing large, complex programmes;
 - ◆ good problem-solving and analytical skills in new areas of work and a culture that encourages creativity;
 - ◆ multicultural society and professionals drawn from different ethnic backgrounds.
- Weaknesses:
 - ◆ British IT professionals are expensive compared to offshore workers;
 - ◆ many professionals lack formal accreditation and training;
 - ◆ employers do not place a high value on experience in IT and older workers face limited employment opportunities;
 - ◆ Britain has traditionally had a low regard for technical and engineering education and skills;
 - ◆ general lack of a commercial approach within IT departments.
- Opportunities:
 - ◆ business analysis and process re-engineering projects;
 - ◆ exploitation of new technologies, building on our skills in early adoption and implementation projects;
 - ◆ development and management of safety critical systems, where low risk is paramount and we can exploit our understanding of security threats;
 - ◆ biotechnology and nanotechnology developments;
 - ◆ outsourcing advisory services, especially to other less experienced European countries.
- Threats:
 - ◆ potential for overseas IT professionals to offer better-quality services as well as cheaper prices;

- ◆ if low-level IT work is moved offshore this leaves fewer opportunities for basic skills training;
- ◆ IT careers may be seen as offering poor prospects and may attract fewer good candidates to the profession;
- ◆ the concentration of university research into a limited number of locations will mean that few graduates are exposed to the leading-edge research that currently gives the UK a competitive edge;
- ◆ if IT work moves too quickly out of the UK, our skills base may decline.

Addressing a perception that overseas workers do not produce quality work, offshore suppliers have invested in achieving compliance with internationally recognized quality management standards. The major Indian suppliers have achieved an especially high level of accreditation with the Capability Maturity Model (CMM) standards and this is setting the norm for the new global IT services market. To maintain our reputation in the global marketplace British IT professionals and companies will need to ensure that CMM expertise is developed and maintained to a high standard.

1.3 CAREER DEVELOPMENT AND TRAINING

The challenge for British professionals now is to gear up for the globalization of the IT services industry. Traditional IT skills such as software development have become globally ubiquitous and a narrow focus on technical skills and their application will not help tomorrow's professionals. We found that IT staff can underestimate their business knowledge and expertise.

We propose a new career model for a new era in which IT professionals would evolve their skills beyond a purely technical environment. The ultimate aim is to create an environment in which IT can be a career in which longevity is valued and IT know-how is transferred into the business arena. Lifelong learning will become more important for all IT professionals, making full use of services such as the BCS's new Career Builder.

The UK already has extensive experience of managing outsourcing relationships. Outsourcing has not always lived up to expectations and we can build on our expertise to improve the delivery of IT services through offshore suppliers.

1.4 HELPING IT PROFESSIONALS DISPLACED BY OFFSHORING

However beneficial offshoring may be for companies and the economy at large individuals can suffer as they see jobs transfer overseas and are forced to tackle the task of finding new employment. The working party identified the major challenge as how to protect the interests of IT professionals rather than their specific jobs.

Corporate social responsibility (CSR) principles provide a useful framework for handling job losses caused by restructuring and can be applied to offshoring initiatives. Recent agreements between some UK companies and their trade unions help protect the interests of IT professionals at the same time as recognizing that some work will transfer overseas and deliver corporate benefits. This assistance is funded from the initial corporate benefits derived from offshoring projects.

Recent government papers, *Making Globalisation a Force for Good* (Department of Trade and Industry, 2004) and *Skills Strategy Progress Report* (Skills Alliance, 2004), describe initiatives planned to help those affected by offshoring. It will be important to ensure that such initiatives, as they develop, provide appropriate assistance for displaced IT professionals.

Individual IT professionals need to take personal responsibility for their own career development. This is particularly relevant for freelance contractors who cannot look to a corporate employer for training and development support. Advice can be gleaned from the computer press. The BCS offers a range of services to help professionals including the Career Builder, internationally recognized qualifications, chartered status, continuous professional development, online expert panels and a library service.

1.5 ENABLING THE UK ECONOMY TO BENEFIT FROM OFFSHORING

The capability to source globally is a growing competitive differentiator for companies (and countries). Most UK companies face international competition and it would be unreasonable to expect them to limit their sourcing options. The globalization of industry is irreversible.

Successful offshoring depends on strategy, skills, quality processes, management effort and governance:

- Companies need to devise a strategy that determines which services can profitably be offshored.
- Skills are needed to support technical design, project management, supplier management, data protection and transition management functions.
- Quality processes within the company need to be sufficient to be able to work alongside an offshoring supplier that may have achieved a high level of compliance with internationally recognized standards.
- Appropriate procedures and governance structures need to be in place.

We have identified four factors that make some activities unsuitable for offshoring:

- activities for which distance/proximity is crucially important;
- services for which the value of the activity far outweighs the cost;
- functions that require employee agility;
- activities that form a sustainable centre of expertise.

Finally we noted that price is not the only factor of importance in the global marketplace. Singapore is a good example of a country with a highly successful IT industry in which average salary levels far exceed those of neighbouring countries. The UK overall economy will benefit from openness to trade if it is supported by a business-friendly environment and a flexible, skilled workforce.

2 Introduction

From its first introduction information technology has transformed the way we work. Early computer systems were expensive and required specialist skills, but offered companies the opportunity to make efficiency savings and improve customer service. The widespread introduction of IT into organizations in the 1970s and 1980s has had a profound and far-reaching impact on our working lives. Many organizations would once have had a typing pool, an accounts department filled with clerks and a records department handling large numbers of filed documents, but these jobs largely disappeared when IT systems were introduced. The number of jobs that could be saved often justified investment in IT.

Many employees found that their work was revolutionized by the use of IT. Printing and publishing, financial services and the travel industry are just some sectors that have seen radical changes in employment patterns.

The IT profession has been in a somewhat privileged position. We have been at the forefront of technological progress because effective use of IT has been a competitive differentiator for many companies. Our skills have been highly valued and sometimes in short supply resulting in higher than average wage levels. While some business departments reduced in size and became more efficient by implementing computer systems, the workload for the IT department continued to grow and the number of IT professionals required continued to rise. As demand for older skills diminished, a constant stream of technological innovations created a need for IT professionals with relevant expertise.

The growth of outsourcing from the 1980s onwards meant that some IT work moved to external service providers and professionals transferred with their work to these outsourcing suppliers. Many thousands of IT professionals in the UK now work for companies such as EDS, Fujitsu Services, Xansa and LogicaCMG. Some professionals with specialist expertise choose to work as freelance contractors, creating a flexible IT workforce that is able to respond to the need for IT project resources, whenever and wherever they are required.

Today, perhaps for the first time in its history, the British IT profession faces a challenge that could potentially see many jobs disappear from the UK. IT professionals working overseas, especially those in less wealthy economies, can offer services to UK companies at very competitive prices. Improved telecommunications, inexpensive bandwidth and web-based collaborative tools have opened up opportunities for offshore suppliers to provide services to UK organizations. The globalization of the IT services marketplace is an irreversible development – we cannot return to the days when IT service provision stayed neatly within national boundaries. It would be easy to see only the negative impact on the UK's IT workforce but that would be to ignore future opportunities and the importance of IT to the success and prosperity of the UK economy.

Offshoring offers companies the potential for compelling cost savings. The BCS promotes the use of IT to deliver maximum business benefit and recognizes that attempts to regulate the market will ultimately harm British interests. In 2003 the Society issued an initial position statement on offshore outsourcing (see Appendix A) and decided to set up a small working party to review the impact of offshoring on the British IT profession; to develop policy; and to make recommendations. Working

party members were drawn from a range of organizations and all had relevant expertise – some were specialists in outsourcing and offshoring and all had experience of offshoring projects. The group's members were:

Roger Baker

Natarajan Chandrasekaran (corresponding member, based in India)

Ian Durrant (Professional Contractors' Group representative)

Alan Hopwood

Mark Kobayashi-Hillary

Gillian Lovegrove

Elizabeth Sparrow (Chair)

Rosie Symons

Claire Davenport (Secretary).

Biographical information is given in Appendix B.

3 The Impact of Globalization

The growth of offshore services in the IT industry is but one example of the much wider phenomenon of globalization. The Department for International Development (2000) defines globalization as: the growing interdependence and interconnectedness of the modern world. The increased ease of movement of goods, services, capital, people and information across national borders is rapidly creating a single global economy. The process is driven by technological advances and reductions in the costs of international transactions, which spread technology and ideas, raise the share of trade in world production and increase the mobility of capital.

While the big picture is very positive, globalization can cause problems for individuals or communities faced with a significant shift in supply and demand caused by increasing international trade. So it may seem for IT professionals in wealthy economies faced with the prospect of their work moving to less wealthy countries.

3.1 NEW GLOBAL SOURCING MODELS

Offshore working can be integrated into business operations in many different ways and the terminology used to define the various business models used by organizations is still evolving. Press reports often refer to 'outsourcing' meaning the transfer of work to other countries, usually to developing economies. But outsourcing is defined as the transfer of responsibility for any service, including planning, management and operations, to an **external** service provider (either in the UK or overseas).

Not all companies that use offshore resources choose to outsource to a supplier. Some set up a company IT department, with their own employees, overseas – this is often referred to as a 'captive site'. Some suppliers now offer a build-operate-transfer service in which they set up an offshore facility for their client, but an option is agreed from the outset allowing the client to take ownership of the entire offshore facility and resources after a defined period.

Established service providers such as EDS, Unisys, Xansa and LogicaCMG are increasingly coming under pressure from their clients to use offshore resources to reduce prices and remain competitive in the global IT services marketplace. Some companies choose to outsource to one of the UK- or USA-based suppliers, but still want to make use of offshore resources to achieve cost savings.

A wide range of other business models is emerging – shared services, business process outsourcing, joint ventures, acquisitions and alliances. The working party has chosen to take a holistic view of the use of offshore IT resources, rather than a narrower focus on offshore outsourcing alone. We have used the term offshoring throughout this report to denote the use of offshore sourcing in its widest sense.

3.2 THE GROWTH OF OFFSHORING

Offshoring is not a new concept. Much of the software used in UK organizations has been developed in other countries – Microsoft applications in the USA, SAP software in Germany and so on. The UK is also a recipient of offshore business. IBM

and HP may be USA-based companies but they employ British IT professionals for their research work in the UK. The current phase of globalization that we call offshoring is real-time or near-time in nature and this has extended the range of activities that can be offshored and made the process much more visible.

Estimates of the size of the offshoring market and growth rates tend to relate to offshore outsourcing and may not accurately reflect the growth in other approaches such as captive sites. But it is important to note that offshoring represents only a small percentage of the overall global IT services market.

The Meta Group predicts that the global offshore outsourcing market, which is currently worth in excess of £5.6 billion, will grow by nearly 20 per cent each year until 2008. The offshore sector will increase faster than the general outsourcing market, with initial growth in application development and maintenance (Meta Group, 2004). IDC makes similar forecasts, predicting that the worldwide market for offshore IT services will grow to £9.52 billion by 2008, achieving a five-year compound annual growth rate of nearly 20 per cent. According to David Tapper, director of outsourcing, utility and offshore services research at IDC:

Customers' continued need to look offshore as a resource from which to procure IT services as part of their overall sourcing requirements is not only growing as a share of the total IT services market, but it is also expanding from traditional IT services, such as application development and maintenance, to areas traditionally limited to being delivered locally. These services range from application and infrastructure management to IT consulting.

IDC (2004)

Forrester Research has reported that a quarter of European companies have outsourced some IT or business services to offshore locations. By 2009 Forrester predicts that the UK will account for more than 75 per cent of the £2.38 billion of Western European spending on offshore outsourcing. IT services provided to Europe from overseas will grow from £726 million in 2004, increasing by 27 per cent each year. The UK is expected to remain the biggest European market for offshore services and India the main destination, but France and Germany are increasingly turning to locations like Spain, the Czech Republic, Russia and Tunisia (Parker, 2004b).

In its *Offshore Services Report 2003*, Ovum Holway predicted that offshore sector revenues generated in the UK would more than double by 2006 to over £1 billion, with the total for Europe reaching £2 billion. Note however that offshore revenues at the time represented just 2 per cent of the UK IT services market. Ovum Holway also predicted that one of today's leading offshore companies will make it into the global IT Top Ten by 2010 (Ovum Holway, 2003).

Evalueserve, a business intelligence and market research firm based in New Delhi, has produced data comparing the numbers of export-focused IT professionals and IT export revenues in leading offshoring destinations as illustrated in Table 3.1, which gives a further insight into the scale of the offshore industry developing in different countries. Data for some countries includes those professionals working in manufacturing and software-producing companies exporting products to other countries. Not all the countries represented are developing countries but each country offers wage levels that are lower than average salaries in the USA or UK (Aggarwal and Pandey, 2004). According to Evalueserve, offshoring currently represents only 4.5 per cent of worldwide IT services spending.

TABLE 3.1 *Offshoring at leading destinations, 2003–04*

Country	Number of export-focused IT professionals	IT export revenues (£ million)
Canada	30,000	1,175
China	42,000	940
Central and Eastern Europe	9,000	150
India	212,000	4,235
Ireland	60,000	2,150
Israel	15,000	505
Mexico, Malaysia and Latin America	4,000	75
The Philippines	5,000	95
Russia	8,000	160

Source: Aggarwal and Pandey (2004)

3.3 THE IMPACT ON BRITISH IT JOBS

To enable us to assess the likely impact of offshoring on the size and structure of the future UK IT workforce we need first to identify the current number of IT workers and review recent trends.

3.3.1 The current UK IT workforce

The main source of information on employment in the UK is the Labour Force Survey (LFS). This is based on a quarterly survey of a random sample of 65,000 households in the UK, and the data gathered is seasonally and annually adjusted, and projected for the UK population as a whole. Job titles are coded into areas of related work. e-skills UK produces a quarterly *Bulletin*, which includes an analysis of LFS data relating to the ICT (information and communication technologies) workforce. This provides a figure for the total number of employees whose work falls into the following groups:

- ICT managers;
- ICT strategy and planning professionals;
- software professionals;
- operations technicians;
- user support technicians;
- computer engineers;
- line repairers and cable jointers;
- telecoms engineers.

The following professions are excluded from the ICT classification because they are considered to be more closely related to other classes: computer officers, computer hardware design engineers, computer-aided designers, computer artists, multimedia designers, web designers, computer instructors and trainers, web support officers, computer administrators, IT administrators, computer clerks, computer data controllers, computer assistants, computer shift leaders, computer control supervisors and engineers, database inputters and clerks and desktop publishing professionals. In some cases these exclusions are made because the occupations involved are considered to require ICT user skills rather than ICT

professional skills (for example, database inputters are no longer included, although at an earlier stage they were). Others are believed to use other skills (such as design expertise) more centrally than ICT skills. The current LFS classifications (Standard Occupational Classification 2000) do not include any roles in ebusiness or ecommerce.

According to the *e-skills Bulletin* (2004), in the first quarter of 2004 there were around 943,000 people employed in ICT occupations in the UK. If 'line repairers and cable jointers' and 'telecoms engineers' are excluded (because their employment sector might be regarded as telecoms rather than computing) the total is around 884,000 distributed as follows:

- ICT managers: 246,000;
- IT strategy and planning professionals: 140,000;
- software professionals: 280,000;
- operations technicians: 110,000;
- user support technicians: 66,000;
- computer engineers: 42,000.

The *e-skills Bulletin* (2004) reports that, among the people of working age employed in ICT jobs in the UK, 47,000 (5 per cent) work part-time and 83,000 (9 per cent) are self-employed.

The total number of ICT employees in the UK has changed little over the last three years. The *e-skills Bulletin* (2004) suggests that a possible trend might be emerging in which software professionals and operations technicians are occupations in decline, while workers classed as ICT managers and IT strategy and planning staff have increased in numbers during the past two years. The numbers working in user support and as computer engineers remain broadly unchanged.

Overall, trends within the ICT sector are towards stability and cautious optimism. The number of vacancies advertised in the press or on the internet rose by 22 per cent (15,000) in the first quarter of 2004. The number of vacancies for ICT staff advertised through Jobcentre Plus also rose throughout the first quarter of 2004 to 2,500 positions, and agency demand for both permanent and contract staff continued the rising trend from the previous quarter. Both e-skills UK and iProfile produce useful information about the demand for various IT skills and regularly report on skills shortages.

The LFS shows that the unemployment rate among ICT professionals dropped to 3.6 per cent in the first quarter of 2004, continuing a downward trend. This represents the lowest level of unemployment within the ICT sector since 2001. The unemployment rate for the whole UK workforce at present is 4.8 per cent. The Professional Contractors' Group (PCG) raised with us a number of concerns about the accuracy of this data. Various industry surveys in 2003 suggested that about 25 per cent of the UK IT workforce was unemployed, contractors making up some 25 per cent of the total IT workforce. PCG membership surveys showed similar results (most recently they reported to us that the unemployment rate for contractors had dropped to around 20 per cent).

This significant discrepancy is a cause for concern because it suggests that the official statistics are significantly underestimating the number of unemployed IT professionals in the UK. The working party therefore investigated the survey methods and data-collection techniques used by the LFS. We were concerned in particular to ensure that the LFS accurately measured the employment of freelance contractors who usually set up their own companies. We looked in detail at the survey methods and these seemed to us to be sound and reliable. On the other hand the industry

surveys we examined appeared to rely on ICT workers responding to internet surveys and used a smaller sample base.

Visit: http://www.statistics.gov.uk/downloads/theme_labour/What_exactly_is_LFS1.pdf for further information about the conduct and theory of LFS.

We need to be confident that survey data contains a balanced representation of freelance contractors. To be able to assess whether or not a specific unemployment rate for contractors is acceptable we need to establish a norm. A contractor who takes four weeks' holiday, two weeks out for training and is 'resting' between contracts for two weeks in the year is technically unemployed for 16 per cent of the working year. But such an individual might reasonably be regarded as a fully employed contractor.

3.3.2 Work permits

As part of the offshoring process, some overseas staff will spend time working in the UK and some UK IT professionals will work at the offshore location. This helps to build effective relationships between onshore and offshore project teams and facilitates the initial knowledge-transfer process. Some organizations find it very useful to have either the offshore project manager based in the UK or the UK project manager based at the offshore location.

Offshore suppliers with an office in the UK can bring their employees into the UK under the intracompany transfer scheme. The Professional Contractors' Group told us that it was concerned that this scheme was being misused. The working party did not identify hard evidence to confirm this claim.

3.3.3 Job losses caused by offshoring

A word of caution is needed before discussing the number of jobs lost because of offshoring. Organizations are constantly reviewing their staff requirements and many factors influence how many IT professionals are employed at any one time. The strength of the UK economy, interest rates, the evolution of technology and the competitive success of each organization will all have some impact on the number of IT employees. These and other factors may lead to an increase or decrease in the size of the company's IT department. It is rarely possible to distinguish jobs lost through offshoring from those lost for other reasons. Offshoring can also lead to an expansion in employment where it is used to enable an organization to gain competitive advantage and grow.

Various research and consultancy companies have produced future projections of job losses caused by offshoring as illustrated in Box 3.1. These estimates are based on feedback from organizations about their future offshoring plans.

BOX 3.1 ESTIMATES OF THE NUMBER OF JOBS TO BE OFFSHORED IN FUTURE YEARS

EVALUESERVE

24,000 IT and software development jobs will be offshored from the UK between 2003 and 2005. A further 60,000 jobs in this sector will be offshored from 2006 to 2010 (Evalueserve-NASSCOM, 2003).

FORRESTER RESEARCH

Almost 150,000 pure IT jobs will move offshore from Europe by 2015. Across the UK workforce as a whole 760,000 jobs will have been offshored by 2015; this equates to about 3 per cent of all employees (Parker, 2004a).

(Continued overleaf)

GARTNER

Up to 25 per cent of traditional IT jobs in many developed countries today will be situated in emerging markets by 2010 (Gartner, 2004a).

OVUM HOLWAY

Between 20,000 and 25,000 jobs may be lost in the UK IT industry over the next few years as a direct result of work moving offshore (Ovum Holway, 2003).

Evalueserve has produced estimates of job losses caused by offshoring for a range of occupations, which helps put into context the impact of offshoring on the IT profession. The breakdown by Evalueserve is given in Table 3.2 and suggests that IT is in the forefront of the offshoring trend.

TABLE 3.2 *Number of jobs offshored from the UK, 2001–10*

Job category	Up to 2002	2003–05	2006–10
IT and software development	18,000	24,000	60,000
Financial services	3,300	11,400	25,400
Business process outsourcing including accounts, HR, data collection, contact centres	8,800	38,200	90,500
Market research, legal research, consulting and professional services	200	1,500	4,100
Architecture, engineering design, research and development	200	1,100	3,200
Life sciences, pharmaceuticals, biotechnology	100	700	1,700
Art, design, web design and so on	200	900	2,200
Sales-lead generation and helpdesks	300	2,300	4,800
Total jobs offshored	31,100	80,100	191,900

Source: Evalueserve-NASSCOM (2003)

In its analysis of trends across Europe Forrester Research presents an alternative picture as illustrated in Table 3.3. In this breakdown business and management includes production, legal, finance and sales staff.

TABLE 3.3 *Number of jobs offshored from Europe by job type*

Job type	Up to 2004	2005–10	2011–15
Information technology	30,855	54,876	64,573
Clerical	28,606	142,536	228,787
Business and management	10,671	121,007	207,821
Science and engineering	10,547	85,177	141,989
Public and governmental	797	13,385	23,141
Media	308	3,382	2,460
Total	81,784	420,363	668,771

Source: derived from Parker (2004a)

Forrester describes the UK as the most advanced European country in terms of its use of offshore services and this will lead to a greater impact on job numbers as illustrated in Table 3.4.

TABLE 3.4 Number of jobs offshored from Europe by country

Country	Up to 2005	2006–10	2011–15
UK	99,704	221,265	437,432
Germany	11,354	49,702	78,858
France	7,636	35,203	55,335
Netherlands	3,481	13,313	19,869
Italy	4,125	8,393	16,316
Sweden	1,845	7,368	11,027
Belgium	1,381	6,229	10,011

Source: derived from Parker (2004a)

3.4 THE ECONOMIC CASE FOR OFFSHORING

Is offshoring beneficial for the UK economy or does it do more harm than good? Most economists argue that the global competitive marketplace delivers benefits to all countries. Writing in his book, *Free Lunch*, Economics Editor of *The Sunday Times* David Smith said:

Economists, as a rule, have little difficulty agreeing that free trade is highly beneficial. A crucial element in post-1945 global prosperity, out of the ashes of the protectionism of the inter-war years, has been trade liberalization – the removal of barriers to trade, both formal and informal. Free trade has had a powerful effect. Countries have become more open and have mainly benefited hugely from it. World trade growth has, over time, averaged two or three times the rate of growth of national output.

SMITH (2003)

In her book, *Living Economy*, Jenny Scott writes:

When it comes to economic theory, free traders win hands down. Trade promotes growth, lowers prices and gives consumers more choice. Clearly protectionist concerns about inequality and the environment should not be dismissed, but building tariff walls around countries is arguably not the answer. Supply-side policies aimed at nurturing a skilled, flexible workforce and at encouraging a modern, high-tech investment base could be far more effective in the long run.

SCOTT (2001)

The UK Government has stressed the benefits of free international trade. The DTI's paper *Making Globalisation a Force for Good* (Department of Trade and Industry, 2004) explains the basic economic argument as more trade leading to a better use of the world's resources, as countries produce more of those things that, in relative terms, they are better at producing:

It is important to stress that the benefits come from all trade flows – not just exports and inward investment but imports and outward investment as well. Openness to trade boosts productivity, by enabling a more efficient allocation of resources; by providing greater opportunities to exploit economies of scale; by exposing the domestic economy to greater competitive pressures; by rewarding innovation and providing access to new technologies; and by increasing incentives for investment.

(Continued overleaf)

Anxiety about job losses in the new service sectors – like call centres – that seem to be threatened by ‘offshoring’ is understandable. However, by running an open and flexible economy we have ensured that, for the last seven years, every job loss has been matched, and more, by a job gain: in every region of the UK, unemployment is down and employment is up, by 1.9 million jobs across our country as a whole. As technology and trade develop, the challenge is to step up the active support we offer to people to continue updating their skills, and to business to continue improving their competitiveness. People need to be able to gain job-focused skills training and improve their chances of a sustainable, productive place in the workforce.

DEPARTMENT OF TRADE AND INDUSTRY (2004)

Catherine Mann of the Washington-based Institute for International Economics has written specifically about the globalization of IT services and white-collar jobs. She has argued that the globalization of IT hardware production can be used as a model for the global evolution of IT services and software. Although this was disruptive to businesses and employees, their response led to productivity growth, lower inflation and more employment:

Globalization of software and services, enhanced IT use and transformation of activities in new sectors, and job creation are mutually dependent. Breaking the links, by limiting globalization of software and services or by restricting IT investment and transformation of activities or by having insufficient skilled workers at home, puts robust and sustainable US economic performance at risk.

MANN (2003)

In its paper *Offshoring: Is it a Win-win Game?* the McKinsey Global Institute says:

What is the impact on the economy? We would argue that not only is the United States fully able to withstand these changes, as it will be able to create jobs faster than offshoring eliminates them, but that the current debate misses the point entirely. Offshoring creates wealth for US companies and consumers and therefore for the United States as a whole: that is why companies choose to follow this course. Offshoring is just one more example of the innovation that keeps US companies at the leading edge of competitiveness across multiple sectors.

McKINSEY GLOBAL INSTITUTE (2003)

It is difficult to find articles in the scholarly press in which offshoring is viewed critically. This is partly because the data that would be required in order to build a valid critique of the economic, social and/or employment effects of offshoring is difficult to obtain (or, indeed, to identify), and partly because this field moves too quickly to allow papers that are subject to a standard academic process of peer review and revision to remain up-to-date. Many academics who have an interest in this area publish in the popular press, specialized trade journals and conference proceedings. We have identified some work in the USA that, while recognizing the long-term benefits of free trade, argues for greater government intervention to support those losing their jobs as a result of offshoring.

Economists at the Washington-based Economic Policy Institute (EPI) have suggested that the overall impact of offshoring is potentially large and could constrain wage levels in the white-collar sector. They question the assumption that retraining and reskilling is a viable solution and argue that the papers by Catherine Mann and the McKinsey Global Institute exaggerate the benefits and ignore large

potential costs. In an analysis published in 2004 EPI examines the relationship between employment rates in the US software industry and software demand and concludes:

Rising productivity growth in IT software and equipment-producing sectors probably explains a good portion of the wedge between investment and employment growth, but this still leaves substantial room for offshoring to be contributing to the continuing labor market slack for IT workers.

BIVENS (2004)

Ashok Bardhan and Cynthia Kroll have compared the impact of offshore outsourcing on manufacturing and services industries as illustrated in Table 3.5.

TABLE 3.5 *The impact of offshore outsourcing on manufacturing and services industries*

Manufacturing	Services
Impacted blue-collar jobs	Impacts white-collar jobs
Affected individual industrial sectors and some specialized occupations within them	Affects individual occupations in many industrial sectors across the economy
Job losses offset and even reversed by increases in services employment	May lead to different composition of occupations in the economy; unclear how the labour-market adjustment will work
Led to increased inequality between blue-collar and white-collar occupations	Will lead to increased inequality within white-collar occupations

Source: Bardhan and Kroll, (2003)

Arguments about offshoring have become more politicized in 2004, the USA presidential election year. Paul Krugman, writing for *The New York Times*, said:

The point is that free trade is politically viable only if it's backed by effective job creation measures and a strong domestic social safety net. And that suggests that free traders should be more worried by the prospect that the policies of the current administration will continue than by the possibility of a Democratic replacement. Put it this way: there's a reason why the two US presidents who did the most to promote growth in world trade were Franklin Roosevelt and Harry Truman, while the two most protectionist presidents of the last 70 years have been Ronald Reagan and, yes, George W. Bush.

KRUGMAN (2004)

Evalueserve has drawn attention to the impact of ageing populations in many high-wage countries, which will result in a shortfall in the labour force. They argue that as a consequence labour costs will increase, leading to a rise in the price of goods and services. Evalueserve (Aggarwal and Pandey, 2004) predicts that the total demand for labour in the UK will grow from 27.66 million in 2003 to 28.63 million in 2010:

The domestic supply of labour (after taking into account an average unemployment rate of approximately 5.5 per cent in the UK during 2003–2010, which would be primarily due to structural reasons) is projected to grow from 27.66 million in 2003 to 27.92 million in 2010. The UK economy will, therefore, face a labour shortfall of about 714,000 workers in 2010.

AGGARWAL AND PANDEY (2004)

This shortfall could hamper the growth of the UK economy and, Evalueserve argues, global sourcing of skilled professionals can provide a means of increasing the supply of labour and mitigating this shortfall. The UK could accomplish this by a combination of immigration, offshoring and employing temporary workers as illustrated in Table 3.6. (Evalueserve does not mention the possibility of extending working lives beyond the current retirement age.)

TABLE 3.6 *UK labour demand and supply in 2010*

	Thousands
Domestic labour supply	27,918
Cumulative immigration (2003-010)	372
Services offshoring	272
Temporary workers	70
Total labour demand	28,632

Source: Aggarwal and Pandey (2004)

The World Bank, based in Washington, has recently commissioned a three-year study to examine the combined economic and social effects of offshore outsourcing. Their review will bring together academics from developed and developing nations to consider not only the economic impact but also the potential for both positive and negative effects on the development of countries providing offshored services.

3.5 PERCEPTIONS

Controversy surrounds the offshoring trend. Media reports with dramatic headlines do not always give an accurate picture of the developing offshoring trend. Companies tend to keep quiet about offshoring initiatives but will publicize a decision to transfer work back to the UK, giving the impression of widespread dissatisfaction with offshore services. But the growth of the offshore market tells a different story. Much is uncertain – we cannot precisely predict the future or accurately forecast the number of jobs that will be created or lost in the UK in coming years. Against this background a major concern for UK companies planning to use offshore resources is the risk to corporate reputation. Few organizations are prepared to talk openly about their experiences of offshoring – good and bad – and this is not helping us to develop best practice.

BOX 3.2 OFFSHORING CORRESPONDENCE

DEAR EDITOR

Where do the advocates of offshoring imagine the people of the UK should look for employment when the bulk of manufacturing has been transferred to China and the majority of the service industry to India? There seems little point in sending half of our young people to university if the only jobs available in the future will be serving burgers in McDonald's or conducting tourists around historic sights. Companies that are eagerly grasping the opportunity to save money now should reflect that if the UK is reduced to an employment wasteland there will be no one able to buy their goods and services.

THE COMPUTER BULLETIN (2004)

(Continued)

I believe that it is insane for companies in the UK to export jobs elsewhere in the world, where employee costs are less, but employee benefits, working conditions and employment protection laws are minimal. There comes a point where it becomes obvious that the UK economy is being harmed by each company's desire to reduce its operating costs to a minimum, regardless of the effects on the UK as a whole.

COMPUTING (2004a)

I'm not sure why young people don't want to go into IT – perhaps it's the banal subject matter at GCSE and A level, and the development tools (MS Access is the high point). But perhaps it's just as well as there don't seem to be enough jobs to go round, and with more offshoring there are not likely to be more in future.

COMPUTING (2004b)

The letters pages in computing magazines regularly feature the ongoing debate about offshoring as the examples in Box 3.2 illustrate. As Thomas Macaulay, the British historian, observed in 1824:

Free trade, one of the greatest blessings which a government can confer on a people, is in almost every country unpopular.

4 Promoting the Competitive Strengths of Britain's IT Profession

The debate surrounding offshoring all too often focuses on the potential for job losses, but increasing globalization opens up opportunities for IT professionals both to work overseas and to provide services from the UK to worldwide markets. In the new global economy British IT professionals need to objectively and critically review their performance in comparison with the best in the world. If the UK's IT profession is to grow and develop it needs to understand its strengths and weaknesses relative to the IT workforce in other countries. Price is not the only factor – Canada is a good example of a country that does not offer the cheapest IT services but nevertheless has a thriving IT industry.

According to a Comment column in *Computing* earlier this year:

Concern over jobs moving offshore hinders progress on becoming part of a globalized industry that will create more higher-level, better paid jobs. More than ever, the IT community needs to talk in terms of people, not last-century press release buzzwords that reinforce the image of technology as scary and complex. IT leaders need to embrace change and demonstrate the inclusiveness of technology to colleagues and customers to ease their fears, and so take a controlling role in realizing the benefits of IT and the growth that will follow as a result.

COMPUTING (2004c)

There are lessons to be learnt from the past. In the 1950s and 1960s many in Britain did not believe that South East Asian countries had the capability to challenge the technological superiority and quality of manufacturing industries in Western Europe and America. As Simon Caulkin wrote in *The Observer*:

Picture an industry that grew fat in a post-war sellers' market. Its products were flashy, poorly built and accident-prone; but that didn't matter, at least to producers, because they had obsolescence built in and everyone needed them. Everyone knows what happened next. The quality message preached by Western gurus, ignored by home manufacturers, was eagerly adopted elsewhere. Soon, foreign firms were invading the market. Jobs started to haemorrhage overseas. While Western manufacturers squealed about cheap imitations and low labour costs, in fact they were losing out not to cheap but to smart.

The motor industry, of course, is a well known study in corporate complacency. Only we're not talking about cars in the 1960s. We're talking about software today.

CAULKIN (2004)

Unless we have a realistic assessment of our achievements and abilities we risk underestimating the competition we face and the capacity of overseas workers to provide high-quality, cost-effective services. Equally if we do not understand our current competitive advantages we may lose out on opportunities and, at worst, see our strengths eroded as we focus on areas where we are unlikely to win in the global marketplace.

At one of its meetings the working party began to develop a SWOT (strengths, weaknesses, threats and opportunities) analysis for Britain's IT profession in comparison with the best in the world. A summary of our discussions is illustrated in Tables 4.1 and 4.2. This represents the views of just a few IT professionals. It will need much wider debate within the IT community and input from business leaders if we are to develop an objective and realistic understanding of the British IT profession's competitive positioning in the global market.

TABLE 4.1 *The strengths and weaknesses of Britain's IT profession*

Strengths	Weaknesses
Wide variety of software skills and wide range of training available	British IT professionals are expensive
Software innovation and hardware pioneering developments	Many professionals lack formal accreditation and training
Leading-edge technology skills	UK professionals do not usually offer the multilingual skills that are available in other countries
Specialist knowledge in fields such as security and health systems	IT projects continue to overrun both budgets and deadlines
Experience in managing large, complex programmes	IT is not usually seen as a profession
Professionals can offer many years of experience	Employers do not place a high value on experience in IT and older workers face limited employment opportunities
Good understanding of UK business processes and focus on deriving business benefits through IT	Too many of those currently working in IT have a limited range of 'soft' skills and are not well equipped to cope with change
IT managers who combine business knowledge and IT skills	Professional training is all too often focused on short-term technical requirements and lacks the breadth needed to prepare for the future
Outsourcing well established and skills developed to manage relationships between clients and suppliers	As the limited uptake of CPD (continuing professional development) in the past indicates, professionals often do not invest in personal training and development
Well-developed best practices that are shared between professionals and between organizations	Few UK organizations have achieved compliance with CMM standards and this is becoming the premiere global quality-management standard
Good problem-solving and analytical skills in new areas of work and a culture that encourages creativity	UK professionals often lack CMM expertise
Professionals are not afraid to challenge and question the established way of working and will seek out improvements	A lack of career development opportunities within UK companies is leading some professionals to look elsewhere in Europe
Research and development investment by software companies	Excessive pressure on new professionals and a culture of long working hours is forcing some, especially skilled women, to leave the profession
Native English speakers	Britain has traditionally had a low regard for technical and engineering education and skills
Reputation for 'fair play'	IT professionals are often regarded as overpaid nerds
Entrepreneurial skills and an environment in which it is easy to set up business	General lack of a commercial approach within IT departments
Highly respected professional body in the BCS	
High standard of general education	
Multicultural society and professionals drawn from different ethnic backgrounds	
Employment regulations provide for flexible workforce of permanent employees	
Large contractor workforce provides mobile and temporary resources where and when needed	
UK has a thriving home market for IT	

TABLE 4.2 *Opportunities for and threats to Britain's IT profession*

Opportunities	Threats
With lower-level work transferring offshore and more complex work remaining in the UK, we have an added opportunity to promote the importance of IT professionalism	Potential for overseas IT professionals to offer better-quality services as well as cheaper prices
Business analysis and process re-engineering projects	IT salary scales may be eroded by cheaper offshore competition
Exploitation of new technologies, building on our skills in early adoption and implementation projects	Uncertain future for the IT department as work moves offshore
Application of new software development and project techniques to reduce timescales and costs, and improve quality standards	IT workers with limited skills are at particular risk and may find it difficult to transfer to new technical roles
Development and management of safety critical systems, where low risk is paramount and we can exploit our understanding of security threats	If low-level IT work is moved offshore this leaves fewer opportunities for basic skills training
Biotechnology and nanotechnology developments.	IT careers may be seen as offering poor prospects because of offshoring and may attract fewer good candidates to the profession
Games technology developments	University fees and funding cuts may deter students from an IT university education
The management of offshore relationships will require 'soft' skills and new roles will be open to those IT professionals who can offer both 'soft' and technical skills	The concentration of university research into a limited number of locations will mean that few graduates are exposed to the leading-edge research that currently gives the UK a competitive edge
Outsourcing advisory services, especially to other less experienced European countries	UK IT service companies may become potential takeover targets for large and successful offshore companies
Arbitration services and advice for organizations in dispute over outsourcing contracts	If work moves too quickly out of the UK our skills base may decline
Experienced IT professionals who have already lived through significant changes in their working lives can offer advice and mentoring to those now concerned about the impact of offshoring	Offshore companies may place staff in UK companies for training experience but then move work offshore
Increased opportunities for UK IT professionals to work abroad	

RECOMMENDATION

Britain's IT profession needs to develop a good understanding of its competitive strengths and the opportunities opened up by the global IT services market.

4.1 QUALITY MANAGEMENT

The emerging offshore market, led by India, has placed great emphasis on quality management and compliance with internationally recognized standards such as the Capability Maturity Model (CMM), ISO 9000 and Six Sigma. This is, at least in part, in response to a perception that distant workers (and especially those based in developing countries) are not capable or sufficiently skilled to produce quality work. India in particular is establishing a brand image as a supplier of quality IT software-engineering processes. All major India suppliers have achieved accreditation to CMM and ISO standards. Indeed some 75 per cent of all the companies worldwide

that have achieved compliance with CMM Level 5 are based in India. This high level of accreditation with the CMM standards in particular is setting the norm for the new global IT services market.

Margaret Ross, professor of software quality at Southampton Institute and Vice-Chair, BCS Quality Specialist Group, told us:

A large number of Indian offshore outsourcing companies have led the way in recent years, to obtain CMM Level 5, and now are working towards CMMI (Capability Maturity Model Integration) Level 5, in addition to having obtained TickIT and ISO 9000:2000 certification. I feel the driver to obtain these indications of quality comes both from a wish for higher quality software as well as a major marketing opportunity. This is supported by the administration from that country, and now from other Far Eastern countries that wish to take a larger role in obtaining offshore outsourcing contracts in the future. In the UK, the reverse message was, I think, given to organizations a few years ago, with the relaxation of the requirements for the use of TickIT auditors. Customers now are becoming very dissatisfied with what appears to be repeated minor software failures and unsuccessful projects. I feel that organizations should keep quality and quality accreditation as a top priority, to improve their own productivity and their position in the world marketplace.

Perceptions in the UK of services provided by offshore suppliers vary but the scale, work ethic, professionalism and quality levels achieved invariably impress those who have visited the major service providers in India. In the USA some IT suppliers are competing with offshore service providers by developing more cost-effective business models and reminding customers that price is not the only factor to take into account. But some customers say that, although costs are prompting US firms to look offshore, the quality of the work is encouraging them to continue. They find that India's developers are more disciplined about coding than US workers. The people who spawned the software industry were brilliant and creative people who focused on innovation, not quality. This culture persists today in the USA, but people now depend on the technology because it is in effect a manufactured product (Thibodeau, 2003).

RECOMMENDATION

If British IT professionals (and British companies) are to maintain and develop their skills and reputation in the global marketplace for UK software, systems and services they need to demonstrate knowledge of a range of quality standards including CMM and the skills required to work at this level.

4.2 INNOVATION

One of Britain's strengths is that our culture and education system encourage us to question authority and challenge the status quo. This leads to creativity and innovation, and opens up many possibilities in design and technological progress. The UK is fortunate to have great technology entrepreneurs and innovators. This advantage needs to be nurtured if we are to maintain this competitive advantage as other nations invest in the development of their own IT industries.

The Government is planning a 10-year investment strategy to make the UK a leading global centre for science and innovation. It has set out an agenda for increasing business–university collaboration to create more routes to bring new skills into businesses and to bring new ideas successfully to the marketplace. The *Science and Innovation Investment Framework 2004–2014* says:

Harnessing innovation in Britain is key to improving the country's future wealth creation prospects. For the UK economy to succeed in generating growth through productivity and employment in the coming decade, it must invest more strongly than in the past in its knowledge base, and translate this knowledge more effectively into business and public service innovation. The Government's ambition, shared with its partners in the private and not-for-profit sectors, is for the UK to be a key knowledge hub in the global economy, with a reputation not only for outstanding scientific and technological discovery, but also as a world leader in turning that knowledge into new products and services.

The Government's long-term objective for the UK economy is to increase the level of knowledge intensity in the UK (as measured by the ratio of R&D across the economy to national gross domestic product), from its current level of around 1.9 per cent to 2.5 per cent by around 2014.

HM TREASURY, DTI AND DEPARTMENT FOR EDUCATION AND SKILLS (2004)

RECOMMENDATION

It is vital that IT research and development and innovation is fully represented in the Government's investment strategy.

Innovation creates a demand within the UK for IT professionals who can offer leading-edge product knowledge and new technology skills. Looking to the future we can anticipate the skills that are going to be needed for a future generation of computers. As Wendy Hall, BCS President 2003–04, wrote in *Computing*:

In a decade or so we will be entering the age of biologically inspired computing. It will be a world of trillions of relatively small processes, all working together in globally interconnected networks. We need to learn lessons from nature about how complex, adaptive systems such as colonies of ants work collectively to achieve tasks that independently they wouldn't be capable of doing. Another example would be learning from neuroscientists about how human beings manage to think associatively, and using that knowledge to build software systems that more effectively find the information you want from massive and globally-distributed data spaces.

HALL, 2004

Research and development investment in the UK is crucial. A recent survey by the Economist Intelligence Unit (EIU) found that the UK is the top destination in Europe for research and development. 'Corporate R&D is increasingly becoming an international effort, with different countries excelling at different parts of the innovation cycle', EIU Editorial Director Daniel Franklin told *Computing* (Watson, 2004).

Both India and China offer tremendous market potential and therefore attract investment, but the USA and UK have a strong advantage: foreign companies feel secure locating innovative research projects in countries that have a sophisticated research infrastructure, strong links to world-leading universities and robust legal protection for intellectual property.

RECOMMENDATION

The Government will need to work in partnership with universities and business to champion the research that will lead to new technological applications that create future jobs.

4.3 INTERACTION WITH SYSTEM USERS

Many IT processes will continue to require close interaction between business users and IT professionals. Activities such as prototyping, business analysis and business process redesign benefit from close physical proximity between IT professionals and users. We should not, however, be complacent. Techniques such as extreme programming and agile methods were originally devised for teams of IT staff and users working closely together in the same country but have been shown to be workable with an offshore project team. See, for example, a description of the use of an agile software process in ThoughtWorks. Martin Fowler writes:

For the last two years ThoughtWorks has operated a lab in Bangalore, India to support our software development projects in North America and Europe. Traditional approaches to offshore development are based on plan-driven methodologies, but we are very firmly in the agile camp. So far we've discovered that we can make it work, although the benefits are still open to debate.

FOWLER (2004)

Current software tools were developed for teams based in one country, but suppliers such as Borland Software, IBM and Microsoft are responding to the growing offshore trend by upgrading their tools and project management software so that global teams can better use them. Patrick Kerpan, Chief Technology Officer at Borland, has described this as 'the industrialization of software development' (Babcock, 2004).

4.4 TRUSTED COMPUTING

British IT professionals are very aware of security issues and many possess specialist skills. Together with the internationally respected BCS accreditation standards and Britain's reputation for 'fair play' and honesty, the UK has opportunities to promote its IT security management, data protection and computer forensic services.

5 Career Development and Training

The UK was at the forefront of IT skills development for the 20th century and is now in a position to be at the forefront of IT skills re-engineering for the 21st century. It has successfully reskilled before in manufacturing, in telecommunications and in distribution. The challenge now is to gear up for the globalization of the IT services industry.

As the trend towards the use of offshore IT workers continues British IT professionals will need to develop a broader range of skills, an appreciation of business issues and processes, project and programme management. The traditional IT skills, such as software development, have become globally ubiquitous. There is no skill difference between Java developers in India or Britain, yet there is a major difference in cost. Areas of the world are likely to develop into centres of excellence for particular competences.

A narrow focus on technical skills and their application will not enhance career prospects for tomorrow's professionals. Working party members quoted two contrasting examples:

- An SQL developer with pharmaceutical expertise was laid off and initially considered it difficult to find a similar job, though he eventually moved into a new role with a company supplying hospital technology. He had previously worked on coding some of these systems and so he had excellent inside knowledge and could use both technical as well as his 'soft' skills in his new job.
- A developer responsible for designing and coding a major investment bank trading system was laid off as a result of offshoring. He did not see himself as a banking expert, but looked only for jobs using the same technical skills and could find only a role on a support helpdesk.

A recent study by e-skills UK and Gartner Consulting (2004) found that the role of IT professionals is changing radically to embrace business, interpersonal and project skills in addition to in-depth expertise in systems integration, networking and security. New entrants to the profession need increasingly advanced skills as traditional entry-level jobs are offshored. These findings are based on a survey of 3,200 businesses and over a third of the employers with IT professional vacancies over the last year said that these had been hard to fill.

Frank Hayes wrote in *Computerworld*:

You can't afford programmers who are just good at writing code. What you want your programmers to do is to understand your business processes – and how to use software to automate, streamline and even revolutionize those processes. Nothing commodity about that, is there? It's specific to your business organization, and it's right in line with the IT department's core value proposition of using technology to help the business run better. It's the high-value part of programming.

HAYES (2004)

5.1 CAREER MODEL

The IT industry is experiencing a period of significant transformation. It is therefore appropriate to look at re-engineering the IT professional career model. One constructive analogy is to compare IT professionals with medical professionals – all of whom go through similar basic training and accreditation, and comply with a central code of practice over a number of years in their early career, then many of whom (still operating as medical professionals) branch out/transfer into specialist areas in the public and/or private sectors. Most technical professionals either choose a management role or focus more deeply in a particular skill-set at some point in their career, potentially as a contractor. We need to consider how the technical career path might change.

What is the core of an IT career? Is it complex analytical procedures or business use of IT? Many people have moved from other careers into IT. How can IT people move into other business functions during the course of their careers? IT professionals have attained many skills that go beyond technology, yet they are often unaware of their marketability in the world outside the IT function. We should look to further their personal development by transporting and evolving their skills beyond a purely technical environment. This is already becoming an essential part of personal marketing for all technology professionals.

A new IT career model could propel a significant number of those previously defined as IT professionals into a business-to-business support role, that is to say skills critical to the survival of the business and to its competitive edge. These are skills that would be considered non-transferable to offshore locations. We have already evidenced a shift in the role of IT director towards the role of business development director. Recognition of the IT professional as a business critical resource who understands business processes would help to promote IT as a career of choice.

This redefinition of the IT career model has the potential to create better synergy between the IT department and other business functions. Professionals need to seek ways of reducing cost, improving service and adding value in their daily roles. The ultimate aim is to create an environment in which IT can be a career in which longevity is valued – through the use of innovative business solutions and the transfer of IT know-how into the business arena.

RECOMMENDATION

Once IT professionals have qualified as chartered IT practitioners, they should aim to branch out into specialist business functions to develop a more rounded skills-set and to integrate key technical and analytical skills into mainstream business functions.

Some regional competences may develop on the basis of traditional skills and clustering of services rather than any inherent regional attributes. UK plc needs to consider what it can do better than the rest of the world in IT services. The City of London is a good example – the UK can offer world-class financial services with IT design and analysis because of the combined IT and business domain knowledge.

RECOMMENDATION

IT professionals should increasingly look to apply their expertise within specialist market sectors – moving from back to front office.

5.2 CAREER CHOICE

The UK economy as a whole benefits from having IT professionals. If IT jobs are perceived to be under threat from offshoring this could discourage young people from pursuing IT careers. New recruits to the IT profession need to understand that technologists need to have more than expert technical knowledge to really succeed. They need to be strong communicators and they need to be able to understand how customers think so that they can deliver meaningful products and services.

Many of the current BCS initiatives will lead to courses and publications that will help IT professionals develop the skills that will be crucial in the future such as project management, relationship building, contractual negotiations, specialist management information and analysis.

RECOMMENDATIONS

Career materials should take account of the developments in offshoring and the attitudes, skills and abilities that will be required from tomorrow's IT professionals.

5.3 CONTINUING PROFESSIONAL DEVELOPMENT

To be successful in the future, IT professionals will need to be alert to the need for lifelong learning, though this is not recognized by all today. The Young Professionals' Group (YPG) informed us that its members are split almost 50/50 in their attitude to lifelong learning. Half see it as a new way of working and they embrace the challenge. But others want to learn specific technical skills and use them throughout an entire career – and this is not an approach that meets the needs of the IT profession of tomorrow.

Professional training and services such as the BCS Career Builder will become more essential in a work environment where changing practices are common and an initial degree or other formal training is not enough to sustain an entire career. Courses should also reflect the opportunities provided by new business models, such as global sourcing, as part of a personal career development programme that includes a period in a mainstream business function.

RECOMMENDATION

There should be a firmer, more visible alliance between education, IT and specialist business functions to encourage IT professionals to enter and contribute to new business domains. IT must be seen as a tool of the business because it does matter.

5.4 PROJECT AND CONTRACT MANAGEMENT

To be successful offshoring must be well managed by people who not only have sound IT skills but are also able to develop effective supplier relationships, negotiate contract changes, understand business processes, deliver robust projects and programmes (which may include offshore components) and monitor and analyse performance against corporate objectives. In these complex areas the UK has high-value expertise and therefore it should be a focus of our educational and vocational training.

Although such expertise exists in the UK it is not universal. Numerous benchmarking studies and a year-long study of more than 20 organizations in Europe

confirmed Gartner's view that successful outsourcing demands new skills and better processes. They estimate that 50 per cent of outsourcing deals in Europe fall short of expectations. According to Roger Cox, Managing Vice President at Gartner:

The internal team is frequently overworked and undervalued and lack the skills and tools to perform complex business critical roles. Companies should invest three to four per cent of the total IS budget in the critical skills and know-how required to build high performance relationships. This is not optional, it is business critical.

GARTNER (2004b)

BOX 5.1 CASE STUDY

Some BCS members already have experience of being made redundant as a result of offshoring. A senior manager who worked for a multinational for 25 years describes his experiences.

In 2003, I played a leadership role in a company-wide IT strategy review. The review concluded that the company IT function could drastically improve both performance and cost. Savings would come from application and infrastructure consolidation and transferring a significant proportion of IT activity to lower-cost countries.

The company offered voluntary severance to its IT staff in high-cost countries – starting at the more senior levels. I accepted, being well aware that at best there would be limited opportunities in future and redundancy would become involuntary for many. I should first say that the support provided by my (previous) company was far better than most. I received six months' salary and an immediate pension. I also had use of an outplacement service for four months.

Finding a new job at 50 was difficult, but ultimately I was successful. These are some of the lessons I learnt:

- Regardless of how you leave a company, after 25 years, no longer having regular contact with former colleagues or having access to the internal systems – email, intra and internet, information systems – is a bit like amputating a limb. You soon find out that your old network was entirely focused on being effective in your company.
- The job market isn't (or doesn't seem to be) open, transparent or fair. What is the demand for your particular skills? How are the relevant jobs resourced? Try finding your way through internet job sites! Who are the relevant head-hunters?
- Rejection is uncomfortable. Why don't head-hunters, recruitment agencies and companies give useful feedback – rather than the 'we value your CV, but there were many candidates, some with more relevant experience'. Keep track of all the applications outstanding, those acknowledged, those rejected. Keeping track of interviews was simple.
- Age seemed to be a disadvantage with IT-user companies and major consultancies – who presumably want time to develop and exploit staff.
- Freelance consultancy requires a personal network, which takes time to develop.
- Age (and experience) is an advantage for interim management – but getting the first contract is the toughest.
- Small consultancies do like people with corporate experience, if you can find a match for your skills.
- Starting again is fun. In a new company, there are only opportunities and new colleagues to get to know.

6 Helping IT Professionals Displaced by Offshoring

Economists generally agree that free trade is highly beneficial and offshoring can offer compelling cost savings, but this does not make it easy for the individual who may lose his/her job as a result of IT work transferred overseas.

BT commissioned SustainAbility to review its decision to outsource call centres and software development to India. In its report, SustainAbility says:

The UK is a highly developed country with low levels of unemployment. For such countries, the transfer of low value added jobs abroad does tend to mean that, over time, the economy as a whole does better through innovation and increased value-added jobs. But the key here is the difference between the UK economy at a macro level versus the pain and suffering inflicted upon individuals who lose jobs in the process. It is incumbent on companies and governments to ensure that viable new opportunities are created for such people.

KUSZEWSKI et al. (2004)

There is no guarantee that an employer will offer someone displaced by offshoring an alternative IT role. In this sense offshoring differs from traditional onshore outsourcing. Within the UK the Transfer of Undertakings (Protection of Employment) or TUPE Regulations protect the interests of any employee whose work is outsourced. Employees are entitled to transfer to the supplier, retaining their rights and benefits. Clearly this cannot apply when work is moved overseas.

We cannot be certain how this will affect overall IT employment levels in the UK, since offshoring is only one of the factors that will influence future job prospects. Even those who argue for the benefits of offshoring recognize that there might be a time lag between a major shift in employment patterns and the creation of new employment opportunities.

The McKinsey Institute, writing about offshoring in the USA, has commented:

Of course, what is good for the economy as a whole may not be good for particular individuals. Based on economic history, we can expect that some US workers will indeed lose their jobs. But this painful reality does not weaken the case for free trade. The United States can enjoy the significant benefits of free trade while protecting individuals with programs that help workers make the transition to new jobs. These programs might include job retraining opportunities and generous severance package, portable health and pension benefits, and wage insurance. Given the benefits of offshoring, the logical response is to make the US labor force and economy more flexible and able to cope with change.

BAILY AND FARRELL (2004)

The working party identified the major challenge as how to protect the interests of IT professionals rather than their specific jobs.

6.1 CORPORATE SOCIAL RESPONSIBILITY (CSR)

Some IT job loss is an inevitable part of economic restructuring. The internationally accepted principles of corporate social responsibility (CSR), widespread in other EU countries and further afield (for example, Singapore), show how best-practice organizations handle economic restructuring, including reorganization caused by offshoring. Led by image- and ethic-conscious multinationals and leading trade unions such principles are now being translated into framework agreements worldwide, and offer an ethical and responsible way forward, as demonstrated by recent agreements made by Barclays and BT and illustrated in Box 6.1. These help protect the interests of IT professionals, whilst freeing work to move to overseas service providers at a cost of 4 to 5 per cent of the corporate benefit from offshoring, for up to two years. CSR agreements on restructuring are backed by the International Labour Organization (ILO) and the European Corporate Restructuring and Staff Rights (Retrenchment) Directive.

BOX 6.1 BARCLAYS AND UNIFI AGREEMENT

Earlier this year, Unifi (the specialist finance sector trade union, which has recently merged with Amicus), and Barclays reached agreement on a framework to handle potential job losses through offshoring. The key elements of the agreement include the following:

- A voluntary redundancy register will be set up where jobs are being lost through offshore outsourcing or restructuring. Anyone working within a defined geographic area, whatever their business unit, can register their interest in voluntary redundancy.
- Job matching will enable those who have volunteered for redundancy to swap jobs at the same grade with those who have lost their jobs but do not want to be made redundant.
- Staff will be redeployed into vacant posts or roles filled by agency staff or contractors even if they do not possess all the skills required but there is a realistic chance of acquiring the skills through additional training. A one- to three-month trial period will be allowed for this training.
- Money will be made available for external career retraining where no redeployment option can be found.
- External, independent support will be provided for those who are developing new careers, whether inside Barclays or in other organizations.

(Source: <http://www.unifi.org.uk>)

RECOMMENDATIONS

The Government, CBI and other employer organizations should endorse and encourage the creation of such best-practice framework agreements that ensure an orderly transition, minimize risk to corporate reputation and give displaced IT employees good assistance in finding continuing employment, whilst freeing jobs to move to lower-cost offshore providers and generating essential future public goodwill for the companies concerned. This assistance should include continuing professional IT skills development for all IT staff, throughout employment, and retraining and assistance from an early point, when offshoring is being planned. Such actions should be integrated into all IT offshoring proposals.

Some BCS members have expressed a concern that we should not rely on the voluntary benevolence of employers, recognizing that those displaced by offshoring are not key stakeholders. Putting corporate reputation at risk is, however, a major company concern. Some companies are now using the fact that they do **not** outsource call centres to India as a key selling feature. If companies are not persuaded to protect their employees, they may nevertheless be concerned about the potential loss of goodwill and damage to their brand image and corporate reputation caused by a 'loss of British jobs'.

6.2 THE GOVERNMENT'S ROLE

In the DTI paper *Making Globalisation a Force for Good* (Department of Trade and Industry, 2004) the Government laid out its response to the challenges of offshoring:

We will:

- encourage companies to take decisions on offshoring which reflect the long-term interests of their business and a better understanding of the risks;
- encourage companies to consult their workers properly in decisions on offshoring. The recent agreements between some high street banks and the financial services union Unifi are a model of good practice;
- address the concern that offshored work may be carried out in conditions that do not satisfy core labour standards. We need to work in partnership with developing countries to encourage observance of core labour standards;
- help UK companies to improve their competitiveness and productivity;
- help British workers improve their skill levels; and
- help people to find new employment as quickly as possible if they lose their jobs as a result of offshoring.

The working party identified a number of measures that have been adopted by other European countries, and even offshoring centres such as India and Singapore, and could usefully be considered for the UK including:

- subsidies for displaced high-tech workers who go into mathematics, science and IT education;
- a national programme of community college and industry partnerships, including industry involvement in building the curriculum for students and mid-career workers for technology careers;
- a 'human capital' investment tax credit – of 50 per cent of a company's annual expenditure on training;
- building the school system (and further education system) for IT excellence, including seed money for innovative IT teaching and an awards system to stimulate, recognize, reward and propagate excellent new teaching and training methods and content;
- school districts and boards appointing advisory boards of industry consultants on advanced IT and business requirements.

The Government does not, at least at present, anticipate that a significant number of jobs will be lost as a result of offshoring:

It has always been the case that, as trade grows and technology changes, some jobs are created and other jobs disappear. The 'churn' caused specifically by offshoring is not, however, particularly large.

DEPARTMENT OF TRADE AND INDUSTRY (2004)

As described in section 3.3.3, some research organizations are predicting that a significant number of IT jobs could be lost as a result of work moving overseas.

RECOMMENDATION

It will be important to monitor the structure and size of the UK IT workforce over coming years as the full impact of offshoring unfolds and ensure that the Government responds appropriately.

The Government's approach to training and development is set out in its Skills Strategy, published in 2003 (Department for Education and Skills, 2003). The Strategy created the Skills Alliance, which brings together key partners with an interest in skills and productivity – four government departments, the CBI, Trades Union Congress, Small Business Council and the key delivery organizations led by the Learning and Skills Council. The aim is to tackle long-standing weaknesses in both supply and demand for training.

RECOMMENDATIONS

The progress report produced by the Skills Alliance (2004) refers to training for IT users but it is important to stress the need for retraining for IT professionals who specify, design and test systems, not simply those who use IT.

Training programmes need to provide practical hands-on experience of new technology to a level where prospective employers will see the benefit of employing such highly retrained IT professionals. Without this the bottom rungs of the career ladder may disappear overseas and may not be replaced with higher opportunities, attainable by existing British IT professionals trained in business skills and newer technologies.

6.3 SELF-HELP – THE IT PROFESSIONAL'S OWN RESPONSIBILITY

The IT professional's operating philosophy must be to accept a significant part of the responsibility for their own career development and actively manage their career moves and training, through self-help and by seeking out employers who do provide good CV-enhancing career opportunities and training schemes.

Individuals must assess objectively in market terms the growing and declining IT industry/market sectors and move accordingly – ongoing economic restructuring should teach employees and contractors that there is little room for sentiment in employment. They need to be as career-focused as employers are cost-focused. Employees need to be alert to the next opportunity and the next migration to new 'feeding grounds' using career opportunities, training and education as a means of enriching their skills and job changes where opportune. This is even more relevant for agency and contract staff, who do not have the employee protections provided by corporate social responsibility schemes.

The computer press is full of evolving advice that should be actively monitored and considered by the IT professional, including, currently:

- Avoiding becoming locked into vulnerable career areas such as technical support, systems administration, network management, legacy application maintenance and routine coding, except for 'pass-through' periods, to gain relevant experience.
- Riding the wave of the latest technologies is fine and continual updates will avoid being left behind on an enjoyable if old technology.
- Company-specific business systems and procedural knowledge and focus can be indispensable to a company – redefining where an IT professional adds value in the context of the business organization.
- Focusing on those IT career opportunities that will remain in the UK as they are not ideal candidates for offshoring:
 - ◆ those jobs where proximity between IT professional and business user is required;
 - ◆ roles in which the value of the activity far outweighs the cost; where communication, understanding and speed of response are key;
 - ◆ jobs that leverage the IT professional's intimate knowledge of the business and how it works;
 - ◆ jobs where agility and innovation are required – responding to company changes without waiting for formal instructions.
- Being alert to areas that are the focus for job creation, as identified by consultancy surveys – currently business services, healthcare, social services, transportation and communications.
- Making use of mentoring schemes, whether union-backed, employer-sponsored or backed by professional bodies such as the BCS, the Institution of Electrical Engineers and the Institute of Financial Services.

Lifelong learning is central to long-term IT career protection and individuals in the end must take responsibility for their own career development. IT contractors, without an employer, are even more reliant on self-help and career development services such as the Career Builder – not just when jobs are hard to find, but throughout their careers.

RECOMMENDATION

Freelance contractors need to be alert to their need for self-reliance and budget for their own training and the periods without earnings while training is in progress.

6.4 HOW THE BCS CAN HELP

The new BCS is ideally and uniquely placed to provide self-help, through its career development services, providing a complete mechanism for its professional members to seek help on a continuing basis, not only when needed in a job loss situation.

- **Certifying competences – strengthening standards and CVs**
 - ◆ ISEB, the examinations board, certifying IT competency at three levels in a whole series of specialist IT areas.

- ◆ Career Builder, a unique web-based service that allows IT professionals to take control of their own career and review their current skills against the industry standards. This service helps members keep their skills and competences (and CVs) up-to-date.
- ◆ Professional membership and chartered status, awarded to those meeting the 'gold' chartered standard and giving post-nominal recognition to skills, expertise and a professional attitude and approach.
- **New BCS member services are currently being enhanced and these will help IT professionals to stay current and up-to-date in such a fast-moving market**
 - ◆ Career development programmes, including an updated Industry Structure Model in line with the government-backed SFIA (Skills for the Information Age) Framework to help individuals assess and plan their career development paths.
 - ◆ BCS examinations and accreditation.
 - ◆ The new careers and recruitment service, with BCS Career Builder. From this BCS members can create their own job descriptions, identify what they need to do to improve their skills and get to the next level of competency in their own field or move to a new area. They can then set up their own personal development plan and identify and acquire the resources and skills they need to make it happen.
- **BCS member groups and networking opportunities:** BCS member groups, specialist groups and forums provide IT leadership and networking in their respective sectors, such as health informatics, security and financial services. Information is also available through BCS Connect, online expert panels and the Institution of Electrical Engineers/BCS library.
- **Leadership and achievement:** the BCS continues to champion national innovation and excellence, through its IT Professional Awards and BCS Learned Society Awards, driving thought-leadership programmes and debates on key issues, championing excellence in computer science research and its application; helping to develop the technologies, applications and jobs of the future.

BOX 6.2 FROM OUR CORRESPONDENT IN INDIA

One of the working party members is currently employed by Tata Consultancy Services (TCS) in India. He has written about stakeholders collaborating to reduce the negative impact of offshoring and preparing a win-win end game. Many of these points were also reflected in the working party's discussions in London.

- The outsourcing phenomenon can be a win-win situation for all parties involved and failure to recognize this can result in a zero sum game. It is therefore important for the main stakeholders to develop a common approach and response to the issue of how best to equip UK workers with the tools, opportunity and resources to update their skills and the ability to compete in a just-in-time world.

WAYS BY WHICH CORPORATIONS CAN HELP

- **HR issues**
 - ◆ Integrate management development schemes with a general business strategy and develop plans for long-term career development.

(Continued overleaf)

- ◆ Prepare employees for organizational change through communication, education and empowering them to take control of their own careers.
- ◆ Companies should help their employees deal with the psychological and cultural issues that may be involved in offshoring.
- ◆ The HR department of the company should recruit people who understand the effects of offshoring and who can be dedicated towards retaining the goodwill of all employees and managing the transition for individuals and affected communities. Companies should limit or avoid altogether involuntary redundancy, aiming to manage job reduction within the company through attrition and redeployment or outplacement to other companies.
- **Passing on the offshoring benefits**
 - ◆ Use the surplus generated from outsourcing to create a retraining fund to help reskill employees to improve re-employment opportunities.
- **Communication and employee engagement**
 - ◆ Educate business executives on the global delivery model and its implications.
 - ◆ Engage the employees' trade union.
- **Government–business partnerships**
 - ◆ Contribute through some sort of school-to-work programmes with dedicated funding. These programmes would be instrumental in developing the future workforce. They can be designed to reach down to the elementary-school level to plant the seeds that could one day influence a career choice. In addition to career guidance companies should make people aware of future industry opportunities so that children who are likely to go on to college are directed into those areas where shortages will be most prevalent.

WAYS BY WHICH THE GOVERNMENT CAN HELP

- **Analyse the regional and occupational impact of offshoring**
 - ◆ Analysis of the potential scale of offshoring and the likely impact on particular groups in the labour market and regions and localities, such as those areas highly dependent on call centres for employment. Prepare action plans to soften the impact in highly vulnerable areas and to reduce the negative regional impact.
- **Increased focus on R&D, new technology and fostering entrepreneurship**
 - ◆ The Government should focus on creating an environment that fosters and promotes an innovative, entrepreneurial culture.
 - ◆ Better tax incentives, funding channels, start-up promotion and less red tape for start-up ventures will help the entrepreneurship wave.
- **Education system**
 - ◆ Building strong academia–industry linkages via co-curriculum development.
 - ◆ The Government needs to help in restructuring the education system to reflect the fact that lifelong learning is crucial to continued economic growth.
- **Providing sufficient funds for retraining**
 - ◆ Additional support to encourage training and upskilling to help staff to move to high-value-added jobs, including the extension of lifelong learning opportunities in IT and other transferable skills.
 - ◆ Sufficient focus on communities where the impact of offshoring would be most severe.

(Continued)

- **Fiscal policies to promote job growth**

- ◆ Short-term subsidies for displaced IT professionals.
- ◆ Tax credits to firms and individuals involved in helping retraining.

WAYS BY WHICH EMPLOYEES CAN HELP THEMSELVES

- **Career planning**

- ◆ Moving beyond regular IT skills: the role of the IT professional needs to change as the running of ever-increasing realms of the IT infrastructure is passed to service providers. Communication and business knowledge will be as valuable as, if not more than, IT knowledge.

7 Enabling the UK Economy to Benefit from Offshoring

The capability to source globally is a growing competitive differentiator for companies (and countries). The BCS is committed to maintaining professional standards and will want to ensure that UK companies derive value from offshoring to the benefit of the wider economy.

7.1 THE GLOBAL MARKETPLACE

IT activities executed within the UK are already fully open to international competition either directly or indirectly. It is well accepted that application packages are imported and exported freely. As well as recognized technology products, IT makes a significant contribution to many other products and services, either within the product itself or in its development, manufacture or marketing, and these are also imported and/or exported. UK companies already work in a global marketplace and have to respond to worldwide competitive pressures and quality expectations.

The UK is also home to many multinational companies and to even more subsidiaries of multinationals. Multinationals often gain scale advantage by concentrating activities in a single country to cover a region of their customer base and naturally source products and activities to gain cost/quality advantage. As Michael Porter wrote in *The Competitive Advantage of Nations*:

A firm must selectively add to its advantage or offset home-based disadvantages through activities in other nations. This is what global strategy is about.

PORTER (1998)

Since a large proportion of UK industry has international competition, either in the UK marketplace or overseas, companies must be competitive across all processes and components that make up their products or services. It would be unreasonable to expect UK companies to accept disadvantages to otherwise world-class products and services by limiting their sourcing options. Where IT offshoring is or becomes a significant competitive factor, UK industry must make use of it or lose out to overseas competition.

Offshoring is a reality of business life. It would be counter-productive to seek to impose restrictions on companies that would harm the UK economy and, ultimately, lead to a loss of jobs.

7.2 GLOBAL SOURCING WILL BE A COMPETITIVE DIFFERENTIATOR

There is an irreversible trend to the globalization of industry. Cross-national trade takes an increasing proportion of the worldwide market. Even where distribution costs are a large factor, product design and process standardization provide scale advantages. This trend increases the level of competition in every country. There will be fewer 'protected' areas where a company may still shelter despite there being a far more cost-effective equivalent elsewhere. The consequence is that companies

need to take advantage of every competitive factor available; to focus on and develop their areas of world-class performance; and to take advantage of outsourced world-class services to satisfy their customers.

7.3 SUCCESSFUL OFFSHORING

Critical success factors for effective offshoring should not be a surprise, but can easily be underestimated if a company has inadequate expertise and thinks of such a service as a commodity. Companies should consider and think through their strategy, skills, quality processes and allocation of management attention.

7.3.1 Strategy

Companies need to decide which collection of activities is most likely to make a company successful; they need to decide which activities, services and components they should buy in, and where these are best sourced. Services to be offshored can be outsourced or can be provided by a subsidiary or captive site. These questions need to be considered in the context of a firm's overall strategy – what are the combinations of intellectual property, core competences, resources and positioning that provide a company with sustainable competitive advantage? What position do IT and IT activities play in this? Typically a company will consider that some of its processes provide differentiation and others are a commodity. For example, an oil exploration company may consider seismic data systems that use proprietary software a differentiator; its production control systems may be very important but without the potential for differentiation; and its financial systems may be seen as a commodity.

Factors to consider in defining a strategy for offshoring are:

- degree to which the IT needs to be agile to keep the company competitive;
- scale and stability;
- risk associated with loss of control;
- impact on customer perception, brand and company reputation.

RECOMMENDATION

Business schools, IT training providers and universities should incorporate this topic in relevant courses.

7.3.2 Skills

Clearly companies must have the appropriate set of skills for IT services that are provided in-house. There is also a set of skills, a different set of IT skills, required for successful, long-term offshoring. Even with the perfect offshore supplier the end result depends on the company being able to define its requirements and priorities; to communicate, negotiate and work well with its supplier; and to make good use of the product or service being provided by the offshore provider, including managing internal changes, processes and skills as appropriate. Skills are needed to support the following functions:

- **Design:** the ability to define and evolve a corporate systems architecture. To define the requirements for offshored work and assure suitability of supplier design work.
- **Project management:** the ability to integrate the offshored work into the company's activities and project cycles. The challenge is in aligning multiple

projects into an effective programme, where some projects are separated by distance, time zone and culture.

- **Supplier management:** managing relationships, commercial factors, delivery and risk.
- **Data protection:** ensuring that offshoring activities comply with the evolving legislation for data protection and cross-border flows.
- **Managing the transition** of organization and systems.

RECOMMENDATION

This is an area in which more specificity and definition would be valuable, with the aim of providing guidance to individuals on marketable skills and to companies on the skills they should retain and grow while moving to make more use of offshoring.

7.3.3 Operational excellence

Offshoring is just one contributor to company effectiveness. It is not something to set up and ignore, but rather a process that must continue to perform year after year. It should fit into a company's planning, monitoring and review processes. Staff resources need to be allocated in proportion to the degree of associated value/risk.

RECOMMENDATION

Offshoring is not a one-off topic but should be treated as an ongoing IT management technique and incorporated into current and future training programmes, job structures and accreditation schemes.

7.3.4 Quality management

Offshoring offers a particular opportunity to gain effectiveness through good quality management processes. The major offshore suppliers have made considerable investment in achieving CMM Level 5 certification, to achieve competitive advantage against a background of scepticism about the capability of offshore companies. Although the CMM standards were developed in the USA, it is the Indian IT service companies that have adopted them as a business strategy. Any company wishing to make this capability deliver value needs to address its own levels of quality management. The level of service delivered can only be as good as the client's own processes. Simplistically the service cannot be better than the specification and application. Companies that intend to work in partnership with offshored services will be disadvantaged unless they are at a sufficiently high CMM level. (Further information about the CMM scheme is given in Appendix C.)

7.3.5 Governance and controls

There are a number of risks associated with offshore IT service supply that need to be effectively managed and controlled. Appropriate procedures and governance structures need to be put in place and IT professionals will implement many of these. Some regulators – especially in the financial services sector – set mandatory standards.

BOX 7.1 BEST PRACTICE GUIDELINES

A Guide to Global Sourcing, to be published by the BCS in November 2004 (Sparrow, 2004), provides practical guidance on managing offshore projects and a description of the IT services industry developing in 18 of the leading countries in the offshore industry. The following advantages and risks are identified.

ADVANTAGES

- Reduced costs.
- Lower wage levels but similar infrastructure costs change the balance in business cases and some projects may become financially attractive only when offshored.
- Financial incentives offered by some overseas destinations.
- Quality management standards achieved by the leading offshore suppliers.
- Offshore centres in different time zones facilitate 24-hour working.
- Countries such as India, Russia and China offer access to large numbers of well-educated employees.
- By offshoring commodity services, company IT staff can focus on core business objectives.
- Some offshore suppliers use image technology and streamlined processes, which can help their clients deliver productivity and service improvements.
- Offshoring offers access to new skills and additional resources that can be used to introduce new technology or applications requiring skills that are in short supply in the UK.

RISKS

- Higher overheads.
- Problems caused by cultural differences and misunderstandings.
- Geopolitical instability – military conflict, terrorism or social unrest.
- Difficult business conditions such as inadequate infrastructure, unreliable power supplies and restrictive regulations.
- Exchange rate fluctuations and salary inflation at offshore locations.
- Poor intellectual property protection in some countries.
- Difficulties caused by working across different legislative systems.
- Inadequate personal data protection in some countries.
- Security concerns at some locations.
- Loss of technical and related business expertise from the UK (unlike onshore outsourcing, IT employees do not transfer with their work to the offshore supplier).
- Loss of flexibility and control.
- Risk to corporate reputation and damage to brand loyalty caused by customer or shareholder backlash.
- Negative impact on UK-based IT employees and difficulties in recruiting good new IT professionals.

7.4 UK-BASED IT ACTIVITIES

This report focuses on the activities that may be carried out overseas, but it is important to note that many functions will continue to be based in the UK and carried out either by in-house IT departments or outsourced to onshore service providers. Only a proportion of IT work is suitable for offshoring.

We have identified four factors that make some activities unsuitable for offshoring:

- **Distance/proximity matters:** where there is a major advantage in having the IT activity performed close to the company, for example where there needs to be ongoing dialogue with business decision makers or specialists.
- **Value of activity far outweighs the cost:** offshoring reduces costs and helps improve quality management processes. Where the value of an activity far outweighs the cost then control, communications (common language and culture) and speed of response become more important and there are advantages in retaining the activity within the UK.
- **Agility is required:** where an IT activity needs to respond to company changes rather than waiting for formal instructions, the people involved should be in the company environment and part of the same reward structure.
- **A sustainable centre of expertise:** the UK will continue to have areas of unique expertise, which may arise from relationships with specific business sectors (for example, the City of London), with universities or simply because a concentration of expertise has grown to the extent of providing a sufficient barrier to entry.

RECOMMENDATION

There can and should continue to be a thriving IT workforce in the UK. IT professionals should renew their efforts to be at the top end of their profession. This will help position the profession to be skilled for the activities that will be valued in the UK and internationally in the future.

7.5 THE UK'S IT INDUSTRY

UK-based service providers are themselves facing tough competition from overseas suppliers. The growth in offshoring has changed the competitive environment. IT companies may choose to:

- compete directly with offshore providers;
- focus in areas where offshoring has disadvantages;
- utilize offshoring as a component of their own products and services;
- act as a channel or value-added distributor of offshore services;
- see offshoring companies as a market for their products and services.

Different companies will choose different approaches but it is useful to emphasize the competitive advantage of customer intimacy and the advantages of closeness to UK markets. The reaction of many offshore providers to these disadvantages has been to invest heavily in quality processes and skills to augment their natural labour cost advantages.

BOX 7.2 TECHNOLOGY – ENABLING THE UK KNOWLEDGE DRIVEN ECONOMY

Intellect (formed from the merger of the Computing Services and Software Association and the Federation of the Electronics Industry) represents the UK's IT, telecommunications and electronics sectors. It has launched its campaign, Technology–Enabling the UK Knowledge Driven Economy, to develop an industry vision and seek a coherent set of long-term government policies to realize a knowledge driven economy in the UK. Intellect describes the campaign as being of critical importance to its members:

- to ensure the UK is a viable competitive base for businesses in the context of a global economy – both for those already situated in the UK and as an attractive location for potential investors;
- to drive UK government and industry to recognize the importance of technology as an enabler for the knowledge driven economy and to fully exploit it as such;
- to sustain the quality of life for UK citizens.

Intellect notes that, in the global marketplace, knowledge, skills and creativity are needed above all to give the UK a competitive edge. The UK economy has made progress in recent years but the power base in the global economy is shifting and there should be no complacency about the UK's position within this market. Fully realizing the benefits of technology is fundamental to the evolution of UK plc as a knowledge economy and to achieving its aim of being a leader within the global market.

Visit: <http://www.intellectuk.org> for further information.

7.6 PRICE IS NOT THE ONLY FACTOR

Singapore has a highly successful IT industry in which average salary levels far exceed those of neighbouring countries while the economy continues to expand. The characteristics that allow for this would seem to be ease of doing business, open borders and a highly skilled workforce (Singapore was recently rated in the top five countries for business environment). Comparison to Singapore suggests that the UK overall economy will benefit from openness to trade as long as this is supported by an environment that is conducive to commerce and a flexible workforce with the drive and opportunity to continually renew their skills.

BOX 7.3 CASE STUDY

A BCS MEMBER WITH PRACTICAL EXPERIENCE OF MANAGING AN OFFSHORE TEAM SHARES HIS EXPERIENCES AND SOME OF THE LESSONS HE HAS LEARNT.

British managers with experience of flat corporate hierarchies and blue-sky thinking can get a big surprise when they try managing technology professionals in an offshore location. When I started managing a development team in India I gave them complete freedom to work toward project targets, just like my other teams in Paris and London. I found to my surprise that the new team was not comfortable with this approach. To my developers, this complete freedom was just neglect of my duty to guide and care for them rather than allowing them the freedom to work at their own pace.

These cultural differences can cause discomfort for the British manager trying to work to tight project deadlines, bringing a new team up to speed and also flying frequently

(Continued overleaf)

between team locations. One of my Bangalore team was in Paris for a month studying a business process that would be offshored. His wife delivered a heavy box of medical supplies to be urgently shipped by courier from the Bangalore office. I later discovered that the medical supplies were bags of basmati rice.

These differences can be managed with experience and I found that the results of using an offshore development centre can extend to far more than the bottom line. Before using an offshore team in India, my testing programme was patchy, to say the least. India is far and away the world leader in software quality, so before long I had a huge improvement in software reliability. Instead of unfilled team vacancies I found I was sifting hundreds of good CVs. There is a lot more to the Indian software miracle than just cost reduction and any manager who ignores the vast Indian resource pool and quality issues does so at his peril.

Appendix A: BCS Position Statement (2003)

OFFSHORE OUTSOURCING

We are witnessing a major shift in the global IT services industry. Countries such as India, Ireland, Russia and South Africa are developing IT service industries and the offshore outsourcing market is growing rapidly. India currently holds around 80 per cent of the market. Ovum Holway has predicted that offshore sector revenues generated in the UK will more than double between 2003 and 2006 to reach over £1 billion. The total for Europe will hit £2 billion. Research organization IDC estimates that, in large companies, 60 to 80 per cent of all IT contract negotiations now include an element of offshore working.

Offshore outsourcing can offer significant benefits:

- IT services can be provided at substantially reduced prices. Offshore outsourcing companies in, say, India can afford to pay what are relatively high salary levels for well-qualified staff and still undercut companies carrying out work in the UK. IT jobs in parts of India attract some of the best graduates because they are well paid and provide an excellent working environment in custom-built business parks.
- Countries such as India and China have large numbers of well-educated professionals and can offer a highly trained, flexible workforce on demand. India produces 500,000 new English-speaking IT and engineering graduates each year. Jobs in the IT services sector are highly sought after and IT professionals are enthusiastic and committed.
- By combining services provided from different countries based in different time zones, global outsourcing suppliers can offer services 24 hours a day, seven days a week throughout the year.
- Whilst undoubtedly there have been some concerns with service quality, many of the major offshore outsourcing companies have invested heavily in developing quality-management processes and achieving accreditation to international standards such as ISO 9001. Over half of all organizations in the world that meet the USA Software Engineering Institute's Capability Maturity Model (CMM) Level 5 standard are based in India.

UK companies will want to exploit the advantages offered by offshore outsourcing services to maintain their competitiveness in the global marketplace. The British Computer Society promotes the exploitation of IT to deliver maximum business benefit and recognizes that attempts to regulate the market will ultimately harm British interests. There are, however, a number of factors that need to be taken into account if organizations are not to fall victim to the pitfalls of offshore outsourcing:

- Offshore outsourcing is not a panacea. It can be used successfully to develop applications that are well defined, with specifications that are unlikely to change during the course of development and require few links to other

applications. Offshore outsourcing is unsuitable for innovative solutions that require prototyping and need to meet changing business requirements.

- Political instability in some parts of the world increases risk. Some organizations outsource to countries such as Canada or Ireland to avoid these problems although it is not possible to make such significant savings in these countries.
- To be successfully used offshore outsourcing must be well managed by staff who not only have sound IT skills but also are able to develop effective supplier relationships, monitor performance and negotiate contract changes.
- The implementation of offshore outsourcing will sometimes lead to a loss of UK-based IT jobs. Organizations should take care not to lose skills that are vital to the ongoing management of outsourced services. In recent years, as the UK economy has slowed, IT skills have been more readily available than in the previous decade. As the economy improves IT staff may again be in short supply.

The growth in offshore outsourcing is naturally of concern to IT professionals in the UK, especially now that the IT job market is at a low point. Ovum Holway has forecast that between 20,000 and 25,000 jobs may be lost in the UK IT industry over the next few years as a direct result of work moving offshore. The position is not entirely clear since some commentators have predicted a future substantial increase in demand for application developers as processors are integrated into many different products.

We anticipate an impact on UK IT salary levels, which rocketed to unsustainable levels in the late 1990s. In the past even junior, inexperienced IT staff could command very high wage rates but we are unlikely to see a return to this situation. Salary levels in developing countries such as India may well rise as their IT service industries develop, but for many years to come there will be countries able to offer quality services at low costs.

The British Computer Society will be monitoring the impact of the growth in offshore outsourcing and reviewing a number of areas including:

- a renewed focus on quality-management processes in UK-based IT organizations;
- identifying and developing the skills needed by UK IT staff so that they can add value that cannot be matched by offshore workers;
- promoting the competitive strengths of UK IT professionals, especially in leading-edge, innovative technologies;
- encouraging organizations and government to retrain and redeploy any IT professionals who find themselves without work as a result of offshore outsourcing.

<http://www.bcs.org/positions/offshoring>

Appendix B: Working Party Members – Biographies

Roger Baker

Member of BCS Trustee Board. Hon. Treasurer between 1989 and 1995. Parliamentary Specialist IT Advisor to the House of Commons Select Committee on Science and Technology between 1997 and 2000 and a co-author of the BCS Euro, e-Commerce and Year 2000 Guides. Currently working for ItemPlus where he has undertaken a variety of IT and business-related assignments for major banks and global insurance companies including, most recently, comparative international regulatory and legislative reviews as a precursor to offshoring.

Natarajan Chandrasekaran (Chandra)

Member of BCS. Currently Executive Vice-President, Tata Consultancy Services (TCS) and based at their corporate office in Mumbai, India. Responsible for TCS global operations as well as sales in EMEA, India and Latin America. Instrumental in setting up TCS's global development centres outside India in countries like China, Hungary and Latin America and the driving force behind TCS's quality initiatives.

Ian Durrant (representing the Professional Contractors' Group)

A PCG director for five years and currently External Affairs Director. Contractor for 14 years, with a total of 19 years' experience in the IT industry. Before becoming self-employed he worked for a large commercial insurance company as a senior analyst programmer. In recent times he has worked as a consultant with a particular leaning for performance tuning of Unix systems.

Alan Hopwood

Recently joined EquaTerra, a consultancy providing expert guidance in all service delivery options – insourced, outsourced, multishore – no preconceived bias, business service processes: human resources, finance and accounting, information technology, procurement and CRM. After a short period with Michelin Tyre Company joined Shell International in 1979 for a multinational career working in more than 25 countries. Amongst other roles he has been CIO for one of Shell's large exploration and production companies and CIO for the Shell Group's HR function, managing the implementation of SAP HR globally and leading the standardization and streamlining of main HR processes.

Mark Kobayashi-Hillary

Executive Director of Commonwealth Business Council Technologies Ltd and Trading Process Director of FX Auctions plc. Author of *Outsourcing to India: The Offshore Advantage* (Kobayashi-Hillary, 2004) and presently researching a new book – with co-author Mahesh Ramachandran of Ford – on the future of business process outsourcing, for publication in 2005. Has previously worked at a senior level managing investment bank equity trading IT in the UK, Singapore and India.

Gillian Lovegrove

Educational consultant with the BCS helping to set up the Education and Training Forum. Currently working with CPHC (Professors and Heads of Computing) collecting information to help promote the image of university computing. She was until recently Dean of Informatics at Northumbria University, leading a school of some 100 academics with divisions of Computing, Information Systems and Information and Communication Studies. Previous to that she was an Associate Dean at Staffordshire University and a lecturer at the University of Southampton.

Elizabeth Sparrow (Chair)

Author and consultant specializing in outsourcing relationships and change management. Member of the BCS London (Central) Branch Committee. Her new book, *A Guide to Global Sourcing: Offshore Outsourcing and Other Global Delivery Models* (Sparrow, 2004), is published by the BCS. Prior to 1999 senior IT leader in various public sector organizations, including a spell as IT Director at the Home Office where she led a major infrastructure upgrade project and launched an innovative private finance initiative. She has over 20 years' experience managing complex, multimillion-pound outsourcing contracts.

Rosie Symons

Thirty years' experience in public relations for the IT industry. Previously Head of Media and PR for Xansa (formerly FI Group) where her broad role included corporate PR, media target management and evaluation, issues and crisis management. In addition she facilitated brainstorm sessions for business-to-business and corporate message mapping, designed and managed PR campaigns (including the launch of Xansa's business process outsourcing service) and provided media coaching for the leadership. She is well versed in the communications issues surrounding the offshore and outsourcing debate. Member of the Institute of Public Relations for over 20 years and now runs her own PR consultancy business where she advises clients including the BCS, ITNET and Wci.

Claire Davenport (Secretary)

Fifteen years' experience in software and telecoms for international companies. Has worked as an analyst programmer, technical writer and more recently in a communications role. Currently managing the External Affairs department for the BCS, focusing on developing the BCS's role as an independent professional adviser on IT issues to the Government.

Appendix C: Capability Maturity Model (CMM)

EXTRACTS FROM *A GUIDE TO GLOBAL SOURCING* (SPARROW, 2004)

Pittsburgh-based Carnegie Mellon University's Software Engineering Institute (SEI) devised CMM to describe an organization's ability to exert quality control and improve the productivity of its processes. The model is based on the following principles:

- Quality control and productivity can be improved by applying management methods based on quantitative analysis.
- The five-level capability model helps organizations to evaluate their achievements and identify areas for improvement.
- The processes defined at each level are generic and define the 'what' rather than the 'how' so that they can be applied to many different organizations.

The initial version of CMM was released in 1992. A number of variants were developed after 1993 for specific aspects of software development and maintenance:

- System Engineering CMM (SE-CMM) relates to product development and production of the developed product.
- Trusted CMM (T-CMM) focuses on sensitive and classified software systems.
- System Security Engineering CMM (SSE-CMM) covers security issues and secured product-development processes.
- People CMM (P-CMM) relates to human resource development in software organizations.
- Software Acquisition CMM (SA-CMM) covers issues relevant to software purchased from external organizations such as contract monitoring and risk management.

When different variants of the CMM model were introduced in the same organization this caused difficulties in coordination and cooperation over joint processes. SEI therefore decided in the late 1990s to change direction in the development of CMM and began to integrate the variant models to produce the CMMI model illustrated in Table A.1 (overleaf).

TABLE A.1 CMM levels

Capability Maturity Level	Process areas (PAs)
1 Initial	None
2 Managed	Requirements management Project planning Project monitoring and control Supplier agreement management Measurement and analysis Process and product quality assurance Configuration management
3 Defined	Requirements development Technical solution Product integration Verification Validation Organizational process focus Organizational process definition Organizational training Integrated project management Integrated teaming Risk management Decision analysis and resolution Organizational environment for integration
4 Quantitatively managed	Organizational process performance Quantitative project management
5 Optimizing	Organizational innovation and deployment Causal analysis and resolution

Source: derived from Galin (2004)

Customers need to be aware that CMMI Level 5 suppliers may expect their clients to work at the same level. Organizations used to working at, say, Levels 1 or 2 will have few formal processes in place and may be unaccustomed to collecting and analysing quantitative data. Yet to work effectively with a Level 5 supplier this is what they may have to do. Some major Indian companies adapt their approach to suit their clients but this of course loses some of the benefits of working with a Level 5 supplier. As we have seen the CMM standards specify what must be done rather than how it should be done. So customers should always consider carefully whether or not the processes suggested by their supplier best suit their business needs.

Any organization seeking accreditation to CMM standards must be independently assessed. The SEI advises that a published assessment is valid for two years, after which the accreditation needs to be repeated.

Visit: <http://www.sei.cmu.edu> for further information.

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