

## An Anglo-German Foundation Report

# **ICT skills in the UK and Germany: How companies adapt and react**

*Hilary Steedman, Karin Wagner, Jim Foreman*

## **Executive Summary**

This study analyses and assesses the contrasting national strategies associated with skill supply for information and communication technologies (ICT) in Britain and Germany. We also examine the impact of these strategies on firms and assess the usefulness to companies of skills at different qualification levels. Finally we point to policy implications for change in publicly financed ICT skill supply strategies that emerge from this analysis.

The study is based on published statistical sources and on interviews with some 90 firms in Britain and Germany, drawn from four sectors: financial services, retailing, motor manufacture and software development. Half the interviews were carried out face to face by two researchers, one from Germany and one from Britain. The remainder were interviewed by one researcher over the telephone. The resulting data were logged and analysed.

The study points to important differences between countries in external constraints, originating in the education system, on the supply of highly educated ICT graduates and graduates in cognate disciplines. These have led to substantially different recruitment and training policies.

In Britain the supply of graduates increased substantially in the latter half of the 1990s and early 2000s. The supply of graduates from ICT degree courses increased even faster. This has been made possible by a high level of responsiveness from universities (providing additional places) and students (choosing courses where demand from industry is high). In addition, government funding has met part of the cost of expansion, and low drop-out and short (three-year) courses have meant that lead times for skill production from universities are relatively short.

In Germany, by contrast, there has been no expansion in numbers entering universities and applied universities (FHS); universities and FHS have not been able to find places for all those who applied to study computer science. The very long lead times to degree qualification (between five and seven years) and high drop-out rates have resulted in very low numbers qualifying at the time of particularly high demand around 1999/2000. While

numbers studying have now increased substantially, those students will qualify in 2006/7 at the earliest.

Company approaches to recruitment in the two countries have been structured and conditioned according to different traditions of occupational identity. In Britain occupational identity is relatively weak except in certain recognised professions (law, medicine etc.) and the older industrial crafts. Employees in the service sector are used to carrying out a variety of tasks as required and are also used to shifting into new areas of work. Firms adopt a flexible approach to the recruitment of skilled employees. New employees are recruited on the basis of relevant experience, and those hired straight from university frequently hold qualifications that are unrelated to the job they are expected to do. Firms expect to provide this latter group with substantial training and place them in 'starter' positions within larger teams, where they can acquire relevant knowledge and experience.

Most of the German firms visited adhered to the occupational model of competence, whereby each employee is expected to own and apply a recognised set of skills for the occupation trained for and practised within the firm. While this model may well lead to greater breadth and depth of technical competence, it undoubtedly creates difficulties when a flexible response is required to adapt to fast-moving technological change. Furthermore, it was observed that the model can create difficulties in integrating new employees from abroad and new employees without the recognised occupational preparation – for example those from 'conversion' courses.

These factors – the unresponsiveness of higher education and the occupational competence model – were, in our opinion, important reasons for the difficulties German companies experienced in recruiting the skilled employees they were seeking in the late 1990s.

However, these same difficulties have also spurred German companies on to work together to 'bypass' the universities and create a system of skill production – apprenticeship and continuing work-based training structures – that is more flexible and offers the prospect of training large numbers of highly skilled ICT employees. Some 60,000 are currently in training and will undergo principally work-based training and constitute a pool of work-ready employees at lower cost than graduates. While graduates will still be needed and recruited, company-based skill production will provide for many of the middle-level posts which had previously proved difficult to fill.

British companies have benefited from a relatively plentiful supply of graduates and a flexible approach to skills. Individual companies have invested heavily in training new employees and upskilling existing employees to combat skill shortages. However, because companies were able to 'get by' on the basis of these strategies, there has been little concerted action on the part of companies to tackle future skill shortages comparable to that undertaken by German companies. This lack of concerted action by firms has led to companies bearing much of the training costs for new recruits and losing that investment a few years later when employees move to self-employed status. In Britain only around 3,000 young people are in IT apprenticeship schemes.

In both countries public institutions generating high-level skills are of prime importance to all companies requiring specialised ICT practitioner skills. When, as is the case in Germany, importing skills or outsourcing work is more difficult for linguistic and cultural

reasons, the power of these institutions to restrict or open up the supply heavily constrains companies' ability to respond to new business opportunities. Britain benefits from the universality of the English language and strong cultural links to the Indian and Asian sub-continent. Importing skills and outsourcing is less problematic. However, a plentiful supply of relatively unspecialised graduates has shaped company behaviour in Britain, leading to training investment from which the individual benefits more than the company and a lack of standardisation of qualifications and experience.

*For more information please contact:*

Annette Birkholz  
Anglo-German Foundation/Deutsch-Britische Stiftung  
34 Belgrave Square, London SW1X 8DZ  
Tel +44 (0)20 7823 1123, Fax +44 (0)20 7823 2324  
E-mail [ab@agf.org.uk](mailto:ab@agf.org.uk), Website [www.agf.org.uk](http://www.agf.org.uk)

Hilary Steedman  
Centre for Economic Performance, London School of Economics and Political Science,  
Houghton Street, London WC2A 2AE  
Tel +44 (0)20 7955 7789, Fax +44 (0)20 7955 7595  
E-mail [h.steedman@lse.ac.uk](mailto:h.steedman@lse.ac.uk), Website [www.ce.ise.ac.uk](http://www.ce.ise.ac.uk)

**Notes to the editor:**

Anglo-German Foundation: For thirty years the Foundation has contributed to policy-making in Britain and Germany by funding bilateral research and discussion of economic and social issues which challenge both countries, and by making the results of this work available to decision-makers, practitioners and their advisers.

Review and reference copies of the report are available from the Anglo-German Foundation. You may also download the report free of charge from the Foundation's website at [www.agf.org.uk](http://www.agf.org.uk); hardcopies (ISBN 1-900834-42-1) can be ordered from bookshops or from the Foundation's distributor, YPS, tel: +44 (0)1904 431 213, fax: +44 (0)1904 430 868, price: £15.00

The authors of the report are:

Hilary Steedman, Centre for Economic Performance, London School of Economics and Political Science; Karin Wagner, Fachhochschule für Technik und Wirtschaft, Berlin; Jim Foreman, Centre for Economic Performance, London School of Economics and Political Science

