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High-Tech Business Services and Innovation in Germany and the UK: The Case of IT Outsourcing

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Executive summary

In the last three decades, advanced capitalist countries have experienced an expansion in the service economy. Yet it is those service activities that are said to be technological- or knowledge-intensive which are claimed to bring the maximum benefits for economic growth, innovation and productivity. Examples include management consultancy services, software and computer services, legal and accountancy services, engineering services and research and development services. These high-tech business services are said to add value and specialised knowledge to the production processes in manufacturing firms and to improve the quality (and specification) of services delivery in the public and private service sectors.

While many organisations have developed such activities in-house, recent years have witnessed a trend of externalisation in which organisations have chosen to outsource to an external, specialist supplier. The prospects for, and implications of, high-tech business services thus require knowledge of the interactions and interlinkages between the client organisation, on the one hand, and the supplier of business services, on the other. In Germany, there is potential for conflict between the short-term nature of these client–supplier linkages and the slow, incremental changes characteristic of its national system of innovation. In the UK, the issue is that increasingly fragmented chains of contracting may obscure lines of accountability, erode trust and weaken the positive spin-offs from business services firms.

This study reports on these issues through investigating the case of IT outsourcing in Germany and the UK. In both countries, the rapidly growing IT outsourcing market is an important driver underpinning growth in the computer services sector. Thirteen examples of large IT outsourcing contracts were selected (6 in Germany, 7 in the UK), ranging in value from €25 million to more than €5,000 million. In each case, interviews were conducted with managers in the IT firm and in the client organisation.

The cases examined cannot be characterised as simple market transactions. In both Germany and the UK, the IT outsourcing agreements involved a complex mix of formalised contracts, informal trusting relations and, crucially, the transfer of IT staff (from the client to the IT supplier). Client organisation managers generally expected IT outsourcing to enhance performance and innovation – through economies of scale, production efficiencies and access to specialised knowledge. However, quite unexpectedly, managing this process demanded a great deal of management input (from both client and supplier) and client investment in retaining relevant expertise.

Both sides to the different outsourcing contracts believed a trusting, partnership approach could foster mutual gains. However, the evidence reveals several areas of tension caused by conflicting goals of the client and supplier organisations; examples include conflict between a focus on unit cost service provision versus the freedom to upgrade systems, or between standardisation of additional services versus customisation to fit in with the client's business needs. These conflicts called into question the sustainability of management efforts to deliver innovation. In addition, the practice of

recurrent contracting raised the risk that neither client nor supplier would take responsibility for investment in skills among IT workers.

Against these general patterns, the data demonstrate significant differences between Germany and the UK in the implications of the expanding IT outsourcing market. In Germany, externalisation of IT is more likely to follow a transitional route in the form of a joint venture with an IT supplier than an immediate outsourcing arrangement, as tends to be the case in the UK. Comparison of joint ventures with other cases suggests that the stronger degree of ownership integration between client and supplier enabled client managers to retain control over the externalisation process and afforded a degree of stability for those IT workers required to transfer employers.

An additional difference is that managers in Germany, compared to those in the UK, appeared to benefit from a deeper embeddedness in institutionalised norms of technical standards and technical skill. This means that managers on both sides of the outsourcing agreement were in a stronger position to negotiate contracts. In particular, the tendency for client organisations in Germany to be 'smarter' than their counterparts in the UK meant that they were able to exploit the market incentives of multi-supplier contracts, to manage proficiently the contract for base-line services provision, and to design contracts for additional services to fit with the broader business strategy. In contrast, client organisations in the UK tended to rely solely on trusting, 'partnership' relations (reflecting problems of low technical knowledge among managers), which were associated with a relatively high risk of conflict and opportunistic behaviour.

Major restructuring among firms across a range of sectors suggests that there is nothing inevitable about the continued trend of IT outsourcing. Indeed, some commentators suggest that the age of the 'mega-deal' is over; among our cases, one client did reverse its policy and took IT back in-house. Nevertheless, the market continues to grow and our research data suggest several areas in which policy can make a positive contribution to exploiting the productivity- and innovation-enhancing capacities of IT outsourcing.

Those charged with innovation policy in the UK can learn lessons from Germany regarding the way stronger trade associations and more clearly defined technical standards contribute to a more stable and co-operative contractual agreement between client and supplier.

In the realm of employment, employer associations and trade unions in both countries need to address the issue of how to reproduce IT skills in a context of uncertain, short-term contracting for services provision. As might be expected, industrial relations were more stable in Germany, compared to the UK, and this contributed to more co-operative outsourcing arrangements. As such, the UK, with its near absent voice mechanisms for IT staff, ought to develop proper channels for information and consultation, following the model of Works Councils in Germany.

Finally, trends towards concentration among IT suppliers suggest there is an increasing risk of client organisations becoming locked into a large outsourcing deal with a single supplier. Policy action is thus required in both countries to improve client organisations' capacity to exploit multi-supplier contracting arrangements and, possibly, to support more small-scale arrangements (such as local joint ventures).

PART I: BACKGROUND

1 Introduction

Internationalisation of services, rapid technical change and extensive restructuring among organisations have fuelled an increase in high-tech business services. Examples include the software and computer services sector, management consultancy services, legal and accountancy services and research and development services. Many commentators claim these services are central to new paths of economic growth in both developed and less developed countries (Daniels and Moulaert 1991; Giarini 1987; Miles 1993). Business services represent a growing component of EU services exports; they constitute a large portion of the growing externalisation of specialist service activities (from both manufacturing and services firms); and, it is claimed, they add value and specialised know-how to the production process in manufacturing firms. However, it is far from clear what the effects of growth of high-tech business services will be in the long term. In particular, very little is known regarding the linkages between business services and client organisations and how these might vary across sectors and across countries (Tomlinson 2001).

Questions for research and policy are quite different in Germany and the UK. In Germany, the debate around the underdevelopment of its service economy – particularly in the area of business services – is linked to whether German organisations have the flexibility and capability to develop new organisational forms (Wever 1995). The argument is that in a period of rapid technological change, organisations need to develop 'network' relations through outsourcing, joint ventures or partnerships in order to exploit external expertise, thus enhancing the knowledge base of the organisation. However, the fast-changing, high-risk and short-term nature of these network relationships is seen to conflict with the slow and incremental process of change characteristic of the German social-market model.

In the UK, the debate is rather different. The service economy is comparatively well developed and there is greater evidence of new organisational forms, with a dramatic expansion in business services over recent years associated with organisational strategies of outsourcing and formation of network relationships (Colling 1999). Here, the debate centres on the sustainability of these new forms, particularly around who benefits from the development of knowledge and information. It is not clear, for example, how partnerships and alliances operate to facilitate the transfer of knowledge, on the one hand, but, on the other, how individual organisations can retain control of those vital pieces of idiosyncratic knowledge upon which their own long-term competitiveness depends (Rubery and Grimshaw 2001).

These two country patterns of change are not independent of one another. As organisational forms in the UK become more and more fragmented with the rise of

business services, there may be lessons to learn from the German model where a tradition of securing high trust relations between organisations (Lane and Bachman 1998) may help diffuse knowledge and workplace innovations in ways that enhance long-term competitiveness. In turn, as Germany seeks to exploit the international expertise of multinational providers of business services, it may benefit from an examination of the variety of organisational forms found in the UK and its ability to generate jobs in a booming business services industry.

The empirical study, carried out in 2002 and 2003, on which this report is based, sought to examine the above developments with respect to the computer and software services sector. The major aims of the study were twofold: first, to construct a comparative account of the evolution of IT outsourcing (selected as a prime example of rapid expansion in high-tech business services through externalisation of activities); and, secondly, to examine the different forms of contracting arrangements agreed between IT suppliers and client organisations in the two countries and to assess the implications for diffusion of knowledge, innovation and competitiveness. The study has focused on several aspects of these broad objectives:

- How does the market for IT outsourcing differ in each country?
- What organisational forms (joint ventures, partnerships, and so on) characterise the expanding IT outsourcing market?
- Is IT outsourcing associated with standardisation of IT and is there also standardisation of production technologies in client organisations?
- How does IT outsourcing transform the principles of innovation management?
- What institutional and organisational factors contribute to good quality, strong, trusting relations between client organisation and IT supplier?

We selected 13 case studies of IT outsourcing contracts, 6 in Germany and 7 in the UK. All were medium-term contracts (between 5 and 10 years' duration) and varied in value from €25 million to more than €5,000 million. Each case study involved interviews with managers in the IT firm and in the client organisation in order to appreciate both sides of the contractual agreement. In this sense, the research was relatively novel since previous studies have tended to rely on surveys of only one party to the contractual exchange. Moreover, contracts were selected so as to reflect diverse sectors of the economy – including financial services, telecommunications, pharmaceuticals and public services – which, again, is novel since most research concentrates on the manufacturing sector.

The report is structured in two main parts. Part one provides the background to our empirical findings, which are presented in part two. A short appendix to the report describes the research method.

Chapter 2 briefly reviews the general theoretical debates regarding the significance of high-tech business services for the economy in the context of internationalisation and technical change.

Chapter 3 explores the characteristics of 'new organisational forms'. It focuses on the role of information technology and the different attributes of contracting relations between client and supplier organisations.

Chapter 4 investigates the peculiarities of IT outsourcing as an example of externalisation of a business activity formerly provided in-house.

Chapter 5 provides a profile of the expanding IT outsourcing sector in Germany and the UK.

In part two of the report, chapters 6 to 10 detail our empirical findings.

Chapter 6 explores the rationale for IT outsourcing in the 13 case studies.

Chapter 7 compares and contrasts the organisational forms of IT outsourcing in each country.

Chapter 8 describes the types of administrative and social relations associated with each IT outsourcing contract and analyses the role of the 'smart client'.

Chapter 9 assesses the scope and scale of cost savings and performance improvements following the decision to outsource IT.

Chapter 10 identifies various areas of tension and conflict between IT supplier and client organisation which potentially impede the ability of IT contracts to deliver mutual gains to client and supplier.

Chapter 11 summarises the findings and describes the policy recommendations.

2 The significance of high-tech business services

2.1 Internationalisation, technological change and services

Services are at the core of recent analyses of the impact of internationalisation and technological change. There has been an enormous increase in internationalisation in services (Baker 2000; Mallampally and Zimny 2000; Miozzo and Miles 2002). Importantly, it is possible that globalisation may not be associated simply with diversity and polarisation, but also with undermining the coherence of traditionally successful national systems of production and innovation. In particular, the trend towards globalisation, reinforced through the GATS, which is locking-in liberalisation and making it an irreversible process, calls for an examination of these trends. This process may be weakening or severely impairing the overall capacity and political will of governments and other decision-making bodies to continue enhancing many of the institutions supporting innovation at a national level, as well as to go on ensuring the cohesion of domestic production systems. There is a danger that governments may view their role as simply providing externalities to multinationals and leave a free hand to the very strong process working towards increased differentiation (both social and across regions), unequal development and an even more strongly hierarchical domestic and international economic order.

While all countries may face similar pressures, policy and structural responses reflect differences in the nature and role of services in different regions and countries. In some countries, the liberalisation and globalisation of services may call into question the traditional national specialisations of the past. For example, in Germany, the concern over the underdevelopment of services ('service gap') has led some (Streeck and Heinze 1999, cited in Bosch 2000) to propose a more Anglo-Saxon model, with its greater wage differentiation, for the service sector, while others defend the integrated German model (Bosch 2000).

Indeed, several attempts have been made to classify countries in terms of their specialisation in different service sectors. One such attempt analyses employment and occupational structures and argues for two ideal models. On the one hand, the 'service economy model' (represented by the US, UK and Canada) is characterised by a rapid phasing out of manufacturing employment after 1970. This model emphasises financial services over producer services and has seen a dramatic rise in jobs in health care and, to a lesser extent, in education. On the other hand, the 'industrial production model' (represented by Japan and Germany) is characterised by a restructuring of manufacturing, with the bulk of service jobs in services to firms and in social services (Castells 1996).

Technological change also has important qualitative effects on the management and structure of services. These can be categorised around three dimensions: (i) increased linkages between manufacturing and services; (ii) increased transportability of services; and (iii) increased knowledge intensity (Miozzo and Soete 2001). Importantly, the growth

of services is not independent of manufacturing and pronouncements of the emergence of a new 'service economy' often fail to recognise the way new technologies have brought sectors closer together, thus requiring policies which support both services and manufacturing (Miozzo and Soete 2001).

2.2 The rise of high-tech business services

The growing complexity of the way modern manufacturing production and distribution is organised – resulting from internationalisation, the application of new technologies and the significant increase in all sorts of co-ordination problems – has increased the service content of many manufactured goods. A growing number of services are required in the production, maintenance and operation of manufactured goods, with the manufacturing sector of advanced countries increasing its use of business services. In particular, research and development, design, marketing, distribution and after-sales maintenance are now essential parts of the industrial production process.

The rise of high-tech business services is, to a significant extent, an outcome of the increased technical and social division of labour within manufacturing production. High-tech business services (also called 'knowledge-intensive business services') are defined as those activities requiring high levels of skill and knowledge, advanced technologies (especially information and communication technologies) and strategic input. Examples include management consultancy services, software and computer services, legal and accountancy services, engineering services and research and development services. They can be seen as the interconnection between technological advances in the general infrastructure, on the one hand, and the productivity of organisations in the manufacturing and services sector, on the other. Through linkages with organisations in the manufacturing and services sectors, high-tech business services add value and specialised know-how to the production process and aspects of services delivery (Miozzo and Soete 2001; Daniels and Moulaert 1991).

Given the rapid rate of technological change and the sophistication and variety of the services required, many organisations have sought to purchase business services from external independent service providers, or have set up subsidiary service firms. Typical examples of this are the outsourcing of computer services (software and data processing), contracting for management advisory services, and the purchase of quality control services and accounting. Thus, many areas of high-tech business services have expanded thanks to the 'deverticalisation' of the large, bureaucratic corporation. Activities that were traditionally 'internalised' within the large corporations (for example, accounting, advertising, distribution, IT) have been 'externalised' over the last three decades in the developed economies. The tendency for organisations to divest themselves of many service functions and rely on specialised outside suppliers is thus a major factor driving the increase in independent producers of high-tech, specialised business services.

Recent estimates suggest that business services represent around 10% of total European employment and 14% of the gross value added to the EU economy. Furthermore, business services account for around 25% to 30% of EU total services exports to third countries (EC 1997). Infrastructural and knowledge-intensive activities that were previously classified as manufacturing activities are now service activities increasingly traded within and across

national borders. Again, this is a result of both a dramatic increase in services in relation to the value of physical products and the growing externalisation of a number of service sectors. However, it must be pointed out that recourse to external business services involves not just a simple substitution of internal services, but instead a rather more complex process of knowledge transfer that requires reciprocal learning and interaction (Gallouj 2002). This process is contingent upon the type of organisational form that characterises linkages between business services providers and their client organisations.

2.3 Challenges for Germany and the UK

In the context of economic structural change, characterised by increased knowledge and technological intensity, doubts have been raised about whether the German innovation system is able to meet the challenge of adapting its economic structure for the future. Germany occupies an excellent position in the international technology race: it belongs to the group of countries with the highest R&D capital stock, and it is among those with the largest number of patents per capita. On average, German enterprises are highly productive and show potential for product and process innovation. However, there are concerns about the country's investment in the future – recent R&D spending, equipment investment and patent activity are limited by international comparison. Also, traditionally, the strength of the German economy lies in the fast and far-reaching diffusion of complex innovations along known trajectories, such as mechanical engineering, manufacturing techniques and technology-intensive consumer goods (Meyer-Krahmer 1992). Some argue that the German economy may find it difficult to enter fundamentally new technological trajectories in information technology (ZEW 2000), which may seriously impair the development of business services and act as a brake on sustained economic growth.

In the UK, attention has focused on the way recent expansion in high-tech business services has been accompanied by radical change in organisational structures, with a break-up of the large corporation (and public sector organisations) accompanying strategies of outsourcing and partnerships. Empirical studies of the value added from high-tech business services suggest caution must be exercised:

> The promotion of the unfettered expansion of these types of services without any consideration for the economic network of which they form a part would not necessarily be beneficial. (Tomlinson 2001: 103)

This study demonstrates that the impact of high-tech business services on overall GDP in the UK is relatively weak even though they appear more developed than in other countries (Tomlinson 2001). The evidence suggests that growth of these services in itself would not necessarily lead to major improvements in productivity. It is thus of vital importance to improve our understanding of the nature of the economic system (between firms and the broader institutions) which shapes the potential value added from high-tech business services.

3 The challenge of new organisational forms

3.1 New organisational forms

Vertical disintegration and specialisation are perhaps the most significant organisational developments of the corporation since the 1990s (Zenger and Hesterley 1997; Holmstrom and Roberts 1998; Prahalad and Hamel 1990). Numerous empirical studies argue that organisations externalise activities that are not central to the 'core competencies' of the organisation, through outsourcing, spin-offs and sub-contracting (Prahalad and Hamel 1990), leading to so-called 'new organisational forms' variously labelled as the 'network organisation' (Castells 1996; Miles and Snow 1986), the 'core–ring' or 'core–periphery' organisation (Harrison 1994) and the 'web of enterprise' (Reich 1991).

For non-routine activities, the case for outsourcing or establishing joint alliances and ventures rests on the benefits to be gained in a period of rapid technological change. As the future is relatively uncertain, partnerships and alliances may be used to yield short-term benefits without requiring major internal investments in new skills and technologies. In short, organisations have incentives to 'buy' rather than to 'make' under these conditions. However, these partnerships and alliances are also rendered more complicated to manage by the increasing importance (driven by competitive pressures) of gaining access to knowledge and information in a period of rapid technological change (Rubery and Grimshaw 2001). On the one hand, the network organisation facilitates access to external knowledge and expertise, a vital means (according to industrial innovation analysts) of enhancing the knowledge resource base of the organisation. On the other hand, however, the development of more fragmented organisational forms calls into question the issue of who benefits from the development of knowledge and information. In particular, it is not clear how, on the one hand, partnerships and alliances can be constructed in order to facilitate transfer of knowledge, but, on the other hand, how individual organisations can retain control of those vital pieces of knowledge – idiosyncratic knowledge as it is sometimes called – on which their own long-term competitiveness depends.

Langlois (2003) argues that network systems of decentralised production involve a broadening of capabilities and decoupling from specific products, carrying on from the Chandlerian firm. Just like the high-throughput technologies of classical mass production, 'modular systems' also require and arise out of standardisation, albeit in a particular form. Langlois points out the difference with mass production:

> Unlike classical mass-production technologies, which standardise the products or processes themselves, modular systems standardise something more abstract: the rules of the game. … By taking standardisation to a more abstract level, modularity reduces the need for management and integration to buffer uncertainty. One way in which it does so is simply by reducing the amount of product standardisation necessary to achieve high throughput. (Langlois 2003: 374–5)

3.2 The role of IT

Developments in information technology reinforce and expand the opportunities available to organisations to utilise knowledge and expertise from external bodies. In particular, organisations may be encouraged to externalise activities since the 'transaction costs' (the costs of negotiating and monitoring) of establishing external contracts for services provision or production activity are reduced and the potential for monitoring external activities enhanced (Sennet 1998). As argued by Zenger and Hesterley,

> recent innovations and advances in measurement, monitoring, organizational design, and information technology have eased the selective infusion of market mechanisms into hierarchy and hierarchy into markets … If buyers can effectively monitor suppliers' efforts in quality improvement, cost reduction and fundamental product innovation, vertical innovation is of less value. (Zenger and Hesterley 1997: 210, 217)

To this end, firms have developed new financial and non-financial performance measures: measures of quality, customer satisfaction, timeliness of delivery and innovativeness to measure sub-unit performance and mimic market mechanism. In particular, the commonality of measures, which is critical to internal and external comparison, is also expanding, with consultants, industry associations and consortia responsible for their diffusion (Zenger and Hesterley 1997).

In terms of what these developments mean for innovation, the literature is divided. While there is some agreement that internal organisation is superior to arms-length contracting (Teece 1986), there is also evidence that the large integrated firm may be less relevant to innovation in periods of rapid technological change. Langlois and Robertson (1992) point out that large size and vertical integration are of little benefit in coordinating across the boundaries of the larger system, especially in the early stages of development in which experimentation is a much more important concern than coordination.

The general evidence would suggest, therefore, that increased vertical disintegration, enabled by improvements in measurement and the standardisation of contracting rules, can provide fertile ground for innovation (as opposed to the large vertically-integrated firm). Chapter 4 assesses the merits of this general argument in terms of the particular case of IT outsourcing.

3.3 Contracting relations

Contracting relations concern the nature of horizontal and vertical linkages and relationships established between client and supplier organisations. Numerous studies have analysed the pros and cons of different forms of contracting, largely around the relative merits of arms-length, as opposed to relational, contracting. For example, arms-length relationships are said to encourage supplier firms to improve performance by exercising the threat of switching supplier. Relational contracts, by contrast, encourage a shared interest in improving performance through social and institutional mechanisms (Helper 1990; Sako 1992). A key variable in contracting relations is trust (Granovetter 1973). Trusting relations between partners are said to reduce the risk of unpredictable,

opportunistic behaviour since trust emphasises long-term relationships as a valuable resource and thus makes reputation a key concern for network firms. Trust also encourages mutual sharing of knowledge, making it easier for contracting organisations to solve new business problems (Jarillo 1988).

There is some debate over whether formal and informal relations act as substitutes or complements. Many studies argue for the benefits of substituting informal understandings for formalised contracts between organisational partners and claim that trusting relations bring cost savings by minimising, or even eliminating, the costs of writing and monitoring formal contracts (Adler 2001; Bradach and Eccles 1989). Moreover, while formal, contractual specification may facilitate tight monitoring of external contractors, it is also associated with rigidity of services provision and distrust between network partners, which increases the risk of opportunistic behaviour (Macaulay 1963). Informal trusting relations, by contrast, encourage a quicker and more flexible response, leading to improved network performance (Uzzi 1997). However, other studies suggest that the two types of contracting relations may be complements and that social relations of trust and commitment may have their origins in formalised institutional structures (Luhmann 1979).

Differences between Germany and the UK illuminate these issues. Cross-national comparison of inter-firm contracting relations demonstrates that the high degree of juridification (*Verrechtlichung*: term denoting the process whereby industrial relations in the Federal Republic are embedded in a closely knit system of procedural rules and rules allowing or granting rights for the individual) in Germany (as evidenced by the near universal acceptance of legal rules among managers) provides an important shared reference point for what constitutes 'correct behaviour'; this creates scope for managers to establish close personal ties and ad hoc understandings.

> In other words, the flexibility here [provided by trusting relations] is not achieved in spite of or regardless of the contract, but on the contrary is built on a foundation of formalized contractual understandings, which are underpinned in turn by the stable systems of norms external to the contract. (Arrighetti *et al.* 1997: 190)

Other country features, such as technical standards and vocational systems of training, also help explain the strength, and effectiveness, of trusting relations between client and supplier organisations (Lane 1997). Because German firms are often members of trade associations, standard setting is normally a collective effort, leading to greater acceptance (and knowledge) of technical norms. This both reduces the costs of writing and interpreting the job tasks specified in inter-firm contracts and minimises the potential for opportunism and conflict among contracting partners, thus laying the foundation for long-term, co-operative inter-firm relations (Lane 1997: 210). The strong role of technical standards in Germany also fits with a strong cultural emphasis on technical skill. These differences

> explain both the normative and cognitive deficit in relation to technical standards in many British industries and the contrasting situation in German industry where technical norms are so much taken for granted that firms cannot conceive of production and exchange without them. (Lane 1997: 208)

Low technical knowledge among British managers (reflecting the lower adoption and diffusion of standards) may mean that client firms are more likely to lack the necessary expertise in managing contracts with supplier firms providing high-tech services, leading

to problems of how to achieve a balanced distribution of cost savings from the contracting arrangement. In Germany, the problem is a risk of 'cognitive lock-in' where technological change proceeds along established paths, precluding radical, or quick, innovations (Lane 1997: 208).

4 The peculiar case of IT outsourcing

IT outsourcing is the use of an external supplier to provide information products and services that were previously provided internally. IT outsourcing has expanded in recent years to include multiple systems and significant transfer of assets, leases and staff to a vendor that now assumes profit and loss responsibility (Lacity and Hirschheim 1995).

The question of why organisations are outsourcing the activities of their IT department at such an unprecedented rate during a period when IT has never been more critical to business success has been widely explored. IT outsourcing is seen as key to business initiatives such as reengineering, knowledge management, the development of electronic channels of distribution and the development of digital business strategies (DiRomualdo and Gurbaxani 1998). Also, one of the most cited reasons for outsourcing is the need of client firms to refocus on core competences and the perception of IT as a cost burden (Lacity, Hirscheim and Willcocks 1994). However, IT outsourcing also brings risks, including reduced skill among IT staff, loss of control, lack of organisational learning, loss of innovative capacity and the lack of divisibility of IT (Earl 1996).

> Innovation needs slack resources, organic and fluid organisational processes, and experimental and intrapreneurial competences – all attributes that external sourcing does not guarantee. (Earl 1996: 30)

Standardisation of the contracting process is undoubtedly occurring. To outsource IT services requires informed buyers, codification of processes and contractual design that allow co-development and tailoring of services in well-governed relations between supplier and client (Mahnke *et al.* 2003). Also, detailed contracts are generally developed in conjunction with tight performance measures designed to enable monitoring of services provision.

However, in the case of IT outsourcing, positive evidence of standardisation is overshadowed by other peculiarities. First, IT is different from other organisational resources that have been outsourced in the past: IT evolves rapidly; the underlying economics of IT changes rapidly; the switching costs to alternative technologies and IT suppliers are high; customers tend to be inexperienced with IT outsourcing; and it is IT management practices rather than economies of scale per se that lead to economic efficiency (Lacity and Willcocks 1994; Lacity and Hirschheim 1995).

Secondly, while the growth of IT outsourcing and the expansion of the supply base (with a growing number of specialist IT suppliers) may be easily interpreted as evidence of the separability of IT from internal production activities, numerous studies suggest this is not the case. While historically IT was considered primarily as a support function (an administrative expense rather than a business investment), advances in IT mean that it now plays a critical role in strategy formulation and implementation (Venkatraman 1991). Indeed, the evidence from a growing literature underlines the fact that IT is important for the co-ordination of the firm.

Jonscher (1994), for example, argues that in the modern firm it is increasingly difficult to distinguish between information and production technologies. Also, there is evidence to

suggest that IT capabilities can be used to transform business structures and processes (Applegate 1994), as well as to provide opportunities for increased connectivity, enabling new forms of inter-organisational relations and enhanced network productivity (Mahnke 2001; Scott Morton 1991).

The inseparability of IT from internal production activities means that even in situations of total outsourcing a minimum set of capabilities is often retained in-house by the client firm (the so-called 'residual IT organisation') (Willcocks and Fitzgerald 1994). As such, organisations may need to retain, change or develop different parts of their IT structures, capabilities and skills in order to maintain the linkages between IT provision and their business prerequisites. Recognition of the peculiarities of IT as an activity that is integral to the co-ordination of the firm means that the development of IT outsourcing poses questions regarding the boundaries, co-ordination and control of the modern organisation.

5 Profiles of the IT outsourcing sector in Germany and the UK

5.1 Trends in IT outsourcing

While it is often claimed that Germany and the UK are at opposite ends of the spectrum of development of high-tech business services activities, in the computer services and software sector they rank numbers one and two, respectively, in the European market (with a 27% and a 20% share of the total market, respectively; Ovum 2001: 72).

Also, since the late 1990s they have represented the strongest countries in Europe in terms of the size of the market for IT outsourcing. Here, IT outsourcing refers to multi-year contracts involving the transfer of assets (infrastructure and, in most cases, staff) from a client organisation to the supplier, and the shift of managerial control and responsibility for service delivery.

While relatively slow to develop in Germany, the size of the market for IT outsourcing has recently converged with that of the UK. The UK was for much of the 1990s the leading country driving the European IT outsourcing market. It registered annual growth rates averaging 40% in the outsourcing sector between 1991 and 1996 (Ovum 2002: 218) and by 1996 the total outsourcing and processing market was £2 billion, amounting to around 20% of the total software and computer services industry (Ovum 2001: Figures 2.6.4, 2.12.1).

In Germany, IT outsourcing began to develop significantly only after the mid-1990s. Prior to this, the majority of IT outsourcing was 'captive outsourcing', involving revenues from a parent company. For example, during the early 1990s although EDS and Debis Systemhaus had a strong presence in Germany, in both cases more than 80% of their IT outsourcing revenue came from their parent companies, GM and Daimler Chrysler, respectively (PAC 2003a: Figure 1). The turning point seems to have been in 1993 when IBM entered the German market. Since then, the 'non-captive' market has expanded significantly.

Indeed, during the late 1990s–early 2000s, it is the UK and Germany which have together spurred on growth in the IT outsourcing sector more than any other European country. Germany recorded rates of around 20%, until a slump to 10% during 2001–2002 (PAC 2003a: 13), and the UK experienced annual growth rates of between 15% and 30% during the 1996–2001 period (Ovum 2002).[1] As a result, by 2000 Germany had caught up with the UK with an overall market for IT outsourcing and processing of more than €11 billion. In addition, as Table 5.1 suggests, this trend is expected to continue with projected growth rates of around 14% in both countries.

[1] Discrepancies in definitions between these two sources of data limit the accuracy of such comparisons.

Table 5.1
Growth in IT outsourcing and processing in Europe

	Market size (2000)	Projected year-on-year growth rate (2000–2004)	Projected market size (2004)
Germany	€11.2 billion	13.5%	€18.6 billion
UK	€11.3 billion	14.1%	€19.2 billion
France	€4.4 billion	19.1%	€8.8 billion
Italy	€2.8 billion	13.7%	€4.7 billion

Source: adapted from a comparative source of data reported in Ovum (2001: Figures 2.4.9 and 2.4.10). The figures were originally derived from a joint report by Ovum Holway and PAC and thus arguably allow for comparison across countries.

Despite similarity in size and growth rates, however, more detailed information derived from national sources of data on the type of IT outsourcing suggests that important differences remain.[2] First, the market for Business Process Outsourcing appears to be far smaller in Germany than in the UK, estimated at €0.3 billion (2002) and £1.0 billion (2001), respectively (PAC 2003b; Ovum 2002).

A second, and perhaps more significant, difference concerns the persistently large captive market in Germany, estimated at €4.2 billion in 2002 (33% of the total IT outsourcing market),[3] compared to just £360,000 in the UK in 2000 (PAC 2003b; Ovum 2002). Leading examples include the contracts held by T-Systems with Deutsche Telekom, those of Siemens Business Services (SBS) with Siemens, and those of Lufthansa Systems with Lufthansa (Table 5.2). Among the top ten suppliers in Germany, seven have a substantial share of their IT outsourcing revenue from the parent company, ranging from 45% at TKIS to 99% at BASF IT services. Nevertheless, excluding captive outsourcing from the data still leaves T-Systems in the dominant position, with almost double the revenue from IT outsourcing compared to IBM in second position (€1.63 billion and €920 million, respectively). Other firms, especially Lufthansa Systems, Datev and BASF, are quite far down the rankings.

5.2 Industry structure

In both countries, the market for IT outsourcing is marked by a strong concentration of large IT suppliers. The leading US-owned suppliers have a strong foothold in both markets (2001 data for the UK, 2002 data for Germany); four firms – EDS, IBM, CSC and Schlumberger/Sema (French–American) – appear in the top 20 in both the UK and Germany. There appears to be less cross-over of UK and German-owned firms, with just one leading German firm in the UK top 20 (SBS) and one UK–French firm in the German top 20 (Schlumberger/Sema).

[2] Here, we rely on two different sources of information for each country and therefore suggest that the data be treated with caution as complete comparability cannot be assured.

[3] The definition of captive market outsourcing includes only those IT suppliers which are also visible in the market – that is, they also win contracts with clients other than their parent company.

Table 5.2
The importance of 'captive outsourcing' among the leading suppliers in the German IT outsourcing market, 2002

Rank		Total revenue (€ million)	% captive revenue	Rank in non-captive market
1	T-Systems	3 920	58.4	1
2	SBS	1 439	60.8	3
3	IBM	950	–	2
4	Lufthansa Systems	578	77.0	9
5	EDS	500	–	4
6	HP	345	–	5
7	BASF IT-Services	340	98.8	–
8	Datev	310	85.5	19
9	TKIS	310	45.2	7
10	Vodaphone Information Systems	238	76.5	15
Total market		12 920	32.7	

Source: adapted from PAC (2003b: Figures 6–8; own calculations).

While it is very difficult to construct accurate estimates of market shares,[4] Table 5.3 compares the very imperfect estimates for the UK and Germany. Patterns of concentration appear to be similar in both countries, with a sharp concentration especially among the leading three firms and the top ten firms which have a leading stake in this particular market.

Table 5.3
Concentration of suppliers in the British and German IT outsourcing markets[1]

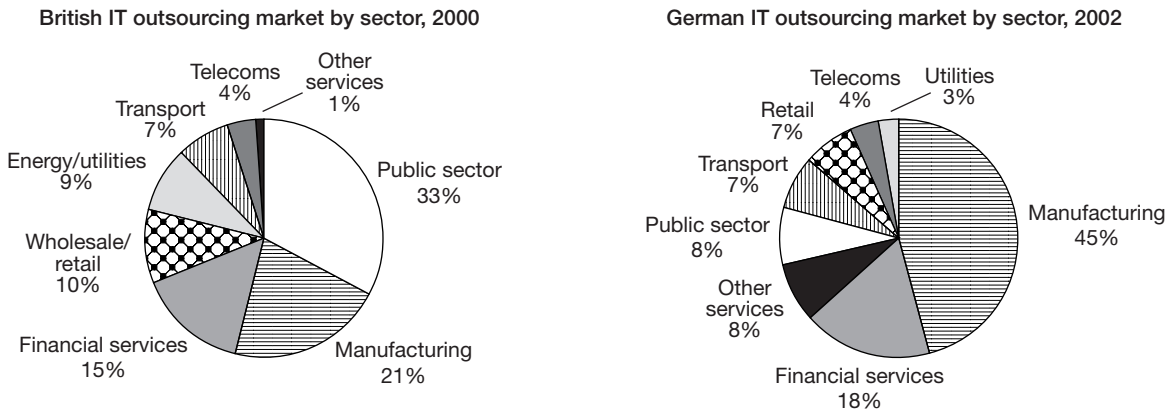
		Share of German market	
	Share of British market[2] (2001)	(including captive outsourcing, 2002)	(excluding captive outsourcing, 2002)
Top 1 firm	26.1%	30.3%	18.7%
Top 3 firms	47.4%	48.8%	35.8%
Top 5 firms	60.6%	57.1%	45.5%
Top 10 firms	80.0%	69.0%	54.7%
Total market	£7 886 million	€12 920 million	€8 699 million

Source: own calculations, adapted from Ovum (2002: Figure H3.1) and PAC (2003b: Figure 8).
Notes:
1. The percentage shares are likely to be overestimates in both countries due to problems of double counting of outsourcing (since each company also outsources services to other suppliers).
2. UK data exclude Business Process Outsourcing but German data do not.

[4] It is difficult to construct measures of industry concentration, but estimations across the UK and Germany may be usefully compared since errors in figures ought approximately to cancel out.

5.3 The client market for IT outsourcing

The markets for IT outsourcing in the two countries differ significantly; Germany is characterised by a very strong demand from the manufacturing sector and the UK by public sector demand (Figure 2.1).[5] The strong presence of the manufacturing sector in Germany – responsible for 45% of the non-captive outsourcing market – reflects, in part, its commanding position in the economy. In the UK, manufacturing accounts for just 21% of the market. However, this figure is higher than usual, due to two extraordinarily large mega-deals signed with engineering firms in 2000 (CSC's 10-year £1 billion deal with BAE Systems and EDS's 10-year £1.3 billion extended contract with Rolls Royce); a survey of contracts found that during 1997, 1998 and 1999 IT outsourcing revenues from the British manufacturing sector totalled just £91–153 million, compared to the 2000 value of £570 million (Ovum 2001: 144–6). More surprising, perhaps, is the relatively small size of the financial services market in the UK, compared to Germany – 15% and 18%, respectively. In fact, the bulk of deals in the UK derive from the public sector – 33% from central and local government combined. In Germany the public sector market is relatively closed, representing just 8% of the non-captive IT outsourcing market.



Source: Own calculations, adapted from Ovum (2002: 144–6) for the UK, and PAC (2003b: Figure 3.1) for Germany

Figure 2.1
The client market for IT outsourcing in Germany and the UK

In both countries, expansion in the IT outsourcing market has been characterised by a growing number of so-called 'mega-deals' in recent years (roughly defined as contracts valued at more than €100 million), which have reinforced the trend towards increasing concentration among suppliers. The significance of mega-deals developed more slowly in Germany than in the UK. For example, during 1990–97, the majority of T-Systems' main non-captive contracts were less than €25 million and only one was valued at more than €100 million (the seven-year €100 million contract with Henkel signed in 1996). But during 1998–2002, most contracts were greater than €25 million, with ten valued at more than €100 million (the largest being the two five-year contracts worth €1,450 million signed with Deutsche Post in 2000 and 2001). Similarly, IBM signed five mega-deals between 1993 and 1997, but this doubled to ten over the next five years, 1998–2002 (PAC 2003c).

[5] The following data derive from two separate sources, so the usual disclaimers regarding non-comparability apply, especially regarding sector definitions.

PART TWO: EMPIRICAL FINDINGS

6 The rationale for IT outsourcing

In line with surveys carried out in the UK and the US (Lacity and Willcocks 2001), our interviews with managers in Germany and the UK revealed issues relating to the need to reduce costs, to access specialist technical expertise and to benefit from a pooling of skills.

In both countries, client managers anticipated that suppliers would achieve several cost savings, including rationalising IT applications around fewer servers, achieving better prices with suppliers (of hardware, and so on), consolidating data-centres, better deals on license agreements and reduced staffing costs.

> Question: Why would [the client] want to outsource IT?
> Cost reduction, cost reduction, cost reduction. That's one, two and three and the fourth is to have the opportunity to use a large economy of scale. … They need someone who is bigger in production. (Case 13, IT supplier, Germany)

> Question: Why are firms outsourcing IT now?
> Right now [in Germany] look at the economic situation we have in the market. All the companies are looking to decrease their costs. The question [for clients] is – is IT my core competence or is it better to source it out and save money? (Case 12, IT supplier, Germany)

For example, Case 11 introduced new desktop services and lowered costs by 50% over the first three years. Case 12 anticipated a 20–30% reduction in data centre services costs. In Case 13, $1 billion in savings over 10 years were built into the contract – covering standardised IT processes across Europe, consolidation of boxes and reduction of engineers, and centralisation of services provision from two new data centres. In Case 8, production efficiencies from the use of SAP enabled the incorporation of additional applications, such as wireless stations on forklift trucks which were connected to the warehouse system.

In addition to relative cost savings, some client organisations expected to benefit from being able to replace the fixed costs of in-house IT provision with a pricing structure for external services provision which would facilitate greater price flexibility; in other words, to replace fixed cost structures with flexible tariff arrangements.

> We didn't order full-time equivalents, or special skills. We ordered functionality. That means we buy performance. We buy availability. We buy reaction times. (Case 12, client organisation, Germany)

> In these times, when the bank [the client organisation] has some economic difficulties they try to exchange fixed costs for value-added costs, so that they can align better to the business situation. Now it's IT on demand – you pay for what you use. (Case 13, IT supplier, Germany)

Direct cost savings were not the only (or necessarily the most important) rationale for IT outsourcing. In many cases, client organisations expected to benefit from the stronger expertise and IT capabilities of a specialist IT supplier, delivering competitive advantage through more effective IT-enabled business solutions. Client organisations with a strong international market base aimed to match this with the technical expertise and international presence of a multinational IT supplier. For example, in Case 9 the client organisation aimed to consolidate its three data centres (one in Europe, one in Asia and one in the US) into just one centralised data centre in Germany in order to avoid some of the problems caused by differences in time zones, among other issues.

Other client organisations emphasised skill sharing as the main intangible feature of the deal. This was very clear in one of our German case studies where the IT firm was establishing itself as the leading IT provider in the sector of economic activity in which the client organisation operated (Case 13); it had pooled expertise from many of the consultants who had recently joined the IT firm and it was committed to building two new data centres to service 'high availability clients' (Case 13, IT supplier, Germany).

Overall, there were no significant country differences in the rationale for IT outsourcing. This is reinforced by a related piece of evidence, that the basic features of contracting rules between suppliers and clients are relatively standardised. Such standardised processes facilitate and reinforce the kinds of expected cost reductions and changes in pricing structures. For example, in all cases baseline services were calculated to incorporate some level of cost savings (using external benchmarking to adjust prices). If a supplier failed to meet the Service Level Agreement for critical services, then it was normally expected to pay a cash penalty. If additional services were requested, then these would be priced by the supplier. Also, third parties were typically hired to help draft, evaluate and negotiate the contract and, in some cases, to help identify and negotiate contact amendments. Outside experts, such as Gartner Group, diffuse similar standards and methods.

In some of our cases, the contractual agreements were very extensive, reflecting their high value and long duration. Also, in all thirteen cases (to a greater or lesser extent), client organisations had developed metrics to measure and monitor IT service performance.

> [The contractual agreement] is regarding programme management, how we will jointly do projects, it's regarding customer service centres, service management, asset management, data centre infrastructure management, system operations and control, IT security, disaster recovery, subcontractors, policy standards, for instance. … So it is a bridge between [client's] processes and [supplier's] processes. … The [client's] road map is discussed here, product catalogue is discussed here, how we manage utilities, how we manage service levels, programme management, all this stuff I have already explained. … It's 300 pages or so. (Case 13, client organisation, Germany)

7 Organisational forms

7.1 Staff transfer

In both countries, staff transfer underpinned the IT outsourcing deals. IT suppliers bid for IT contracts on the assumption that incumbent workers will be transferred to the IT supplier which wins the contract. Staff with skill and expertise in various aspects of IT and IT management are therefore expected to transfer organisations as contracts come and go. The numbers of transferring staff among the 13 cases varied considerably, from just 20 employees to more than 3,000 (see Table 7.1). Large contract values thus reflect the high staffing costs involved in purchasing IT services from the IT supplier who acts as the new employer.

Staff transfer in Germany involves stricter requirements on employers to negotiate and consult with worker representatives than in the UK, in addition to the fact that collective bargaining coverage is stronger among German firms than in the UK. Moreover, German Works Councils have rights to information and consultation on the outsourcing deal, workers are protected against dismissal and their terms and conditions are generally protected.

Table 7.1
Staff transfer in the 13 cases

	IT supplier	Client organisation	Contract initial value	Staff transfer
Germany				
	IBM	Hapag Lloyd	€100 million €60 million	20–30
	IBM	Deutsche Bank	€35 million €2 500 million	900
	IBM	Continental	€75 million	280
	Logica	Becks (Interbrew)	€54 million	28
	T-Systems	Henkel	€100 million €25 million	55
	T-Systems	Deutsche Telekom	n.a.	approx. 12 000
UK				
	IBM	AstraZeneca	£1 150 million	420
	IBM	Cable&Wireless	£3 500 million	1 600
	EDS	Dept of Work & Pensions	>£2 000 million	3 000
	EDS	Inland Revenue	£1 600 million	2 300
	EDS	Rolls Royce	£1 400 million	1 190
	Logica	Britannia Airways	£27 million	30
	Logica	British Petroleum	£24 million	20

Source: see Appendix Table A1 for details.

The strength of regulations in Germany meant that managers at client organisations were more likely, compared to their counterparts in the UK, to identify staffing arrangements as a factor shaping the decision to outsource and, as we see below, the form of the outsourcing arrangement. German workers can exercise the right to refuse to transfer on an individual basis. As such, in the German cases, far more time and resources were spent in consultations and negotiations with worker representatives compared to the British cases. The evidence suggests that this 'consensus-led' process can speed up or slow down the decision to outsource IT in Germany. For example, in one case, where the Works Council was actively in favour of the particular IT firm winning the deal, it was believed to have facilitated the process (Case 10, IT supplier). However, in another case (Case 13, IT supplier) the Works Council of the client organisation favoured an alternative, German-owned IT supplier and this slowed the process significantly. Whether positive or negative, the role of Works Councils is thus considerably stronger in Germany than in the UK:

> If [Works Councils] can be convinced that the employees and their members – you know, members of those trade unions – are treated fairly, … they will assist dramatically. If not they will resist – they can stop this process, definitely. (General interview, IT supplier, Germany)

7.2 Direct outsourcing vs joint ventures

In the UK all seven case studies involved a direct outsourcing of IT staff and activities to an external supplier. In Germany, however, we found evidence of transitional organisational forms. Three cases involved an initial joint venture arrangement and one was characterised as a 'captive' arrangement (Table 7.2). Among the three joint ventures, there were differences in the extent to which they served as transitional arrangements towards a complete switch in ownership to the IT firm. The joint venture in Case 8 still

Table 7.2.
IT outsourcing as joint ventures and captive markets in Germany

Case no.	Organisational form	Details
8	Joint venture	Began in 1997–98 as a joint venture between two client organisations and a small, local IT consultancy firm. In 2000, the current IT supplier bought the small IT consultancy and then gradually increased its share from 33% to 52% (at the time of research, summer 2003), and was expected to increase it to 100%.
10	Joint venture	The client organisation began with a 25.1% stake in the venture, which also served other clients. Over time, the IT firm increased its share to 100%.
11	Captive market	The client organisation had initially set up a 100%-owned affiliate carrying out IT services and application development. In 2001, it acquired another IT firm, merged the two IT teams, and established the current IT supplier. IT provision now serves both an enormous captive market and many third parties.
12	Joint venture	Began as a 50–50 joint venture between a different IT firm and the current client organisation in 1997–98. After a short period of time, the client organisation sold its shares and the collaborating IT firm was bought by another firm forming the current IT supplier.

prevailed at the time of research, but the share held by the original IT firm had increased following take-over by a multinational IT supplier. In Case 10, the IT firm explicitly set out with the intention of establishing a joint venture for a short period of time only, in order to ease adjustment tensions (see below). Similarly, in Case 12, the initial joint venture was also subsequently bought out by the IT firm, but in this case following a merger between the original IT firm and another IT supplier.

Joint ventures have two potential benefits compared to the immediate handover of IT services provision. First, managers from both client and supplier organisations argued that it facilitated a smooth transfer of staff, easing the process of adjustment.

> In this joint venture the message was '[the client organisation] is still responsible for this part of the business as a partner so we [the IT staff] are still part of the [client organisation] community, but also part of the [IT firm] community'. That was the migration phase. (Case 12, client organisation, Germany)

> The German firms say, 'A joint venture – it's better for our employees', and so on. … The employees feel that they are part of [the client organisation]. … A joint venture makes it easier to transfer. (Case 10, IT supplier, Germany)

In the UK, the immediacy of complete staff transfer to the new IT supplier as employer – in a context of weak information and consultation rights for staff – sometimes led to industrial relations problems and created divisions between groups of staff who differed in their resistance to change.

A second potential benefit of the joint venture is that it enables the client organisation to retain a share of profits; this is especially relevant where in-house IT services had previously been provided through a form of spin-off that already served third-party customer firms. However, our three examples of joint ventures suggest that the IT firm quickly buys out the client's stake. One reason for this is that, as small enterprises, joint ventures are not able to grow third-party business sufficiently quickly; they cannot generate the appropriate economies of scale and are not able to demonstrate to other clients that they can deliver a strong pool of general expertise. However, takeovers by larger multinational firms may generate tensions, especially where – as we found in Case 8 – the original motivation for setting up a local joint venture was to avoid the danger of a multinational firm winning the contract and then redeploying high-skilled staff elsewhere. Here, the client organisation manager recognised, on the one hand, the dangers of having an in-house IT team that was too inward-looking and, on the other, the dangers of losing expertise as a large IT firm siphons the best staff off to other contracts. A local joint venture seemed to be the best solution:

> I have been in the outsourcing business [with a multinational IT firm]. We would buy a whole IT group of customers, set up a new company [joint venture] … and then we took the people after a year or two or three, we took the good consulting people and … spread them all over the world. And the customer never saw the good people again. Gone. And that's what we don't want to see happen over here. (Case 8, client organisation, Germany)

In the UK, by contrast, we found stronger evidence from our interviews with client managers that the direct transfer of staff to the IT supplier lessened their ability, in the short to medium term, to control the stock and flow of worker quality. In one case, client

managers were dissatisfied with a new recruitment policy introduced by the IT supplier which was believed to be the cause of a weakening of productivity.

> [The IT supplier] has forged links with some of the local universities and they give offers of employment to graduates as long as they pass 2ii [a lower second-class degree] or whatever. … So they come in young and they come in at lower salaries, basically, than a lot of the transferred people. (Case 2, client organisation, UK)

In another case, a manager at the IT supplier was explicit in his intention to cream off the 'top talent':

> Over time people are moved away. HR has its own strategy for high flyers. … When you are [transferring] people in you are assessing them all the time – 'Are these just the drudges?' – though these people are important … they are the ones that keep things turning. But you also need to recognize the high flyers. (Case 1, IT supplier, UK)

The process of IT outsourcing thus follows two quite different trajectories of organisational form in each country. The tighter ownership interlinkages between client and supplier in Germany (at least in the short term) enable client organisation managers to secure greater continuity of quality services provision. In some of the UK cases, the direct switch to an alternative supplier often led to accusations of 'cream-skimming' with IT suppliers quickly replacing the more able staff by less experienced (and less costly) new recruits.

8 Contracting relations between client and IT supplier

8.1 Interpersonal relations

Interview data from most managers suggest that the performance of the contract depended upon the quality of interpersonal relations, requiring an active role in managing all aspects of the contract. In recognition of the potential for tensions caused by the intangibility and uncertainty surrounding the quality of IT services, in many of our cases managers stressed the need for frequent discussion, negotiation and re-negotiation to reconcile objectives between the client and supplier and to institutionalise a process of managing conflict.

Detailed and frequent negotiations and meetings between client and supplier managers were believed to be fundamental, requiring a great deal of management input. All contracts depended on a mix of weekly, monthly and quarterly meetings arranged with different compositions of managers and IT staff. For example, at Case 12 there was a weekly meeting between the two partners' teams of experts for Lotus Notes, SAP, E-Business and so on. There was a monthly business review meeting to discuss market developments and costing (especially regarding new service offerings). In addition, every quarter the CIO from the client organisation and the director from the IT supplier met to discuss future innovations and business strategy. In all cases, face-to-face, trusting relations were seen to be crucial features of a successful IT outsourcing deal.

> We had to have the confidence and the reassurance and that's where the relationship comes in. And the work that [IT supplier] did in building the relationship with us and that touchy-feely stuff – making sure, but also that personal commitment – 'I promise you I will make this work'. (Case 3, client organisation, UK)

> Yes, we are very, very close to the guys [in the client organisation]. It is very important for us, because we get the chance to know very well what will happen, and we also have the chance to put in our ideas and processes. (Case 8, IT supplier, Germany)

While interpersonal communication facilitated conflict resolution, it was the practice of staff transfer that underpinned the ability of the client to foster good relations with the IT supplier.

> These old relationships [with the former IT employees] help us to sort out some problems off the record without looking to the contract. (Case 12, client organisation, Germany)

An important difference between the two countries concerns the extent to which the informal relationships complemented the formal contractual agreement. In Germany, client managers were more likely than their UK counterparts to underline the importance of the formal contract and to identify informal relations as complementary. They recognised the risks of being 'too close' and the need to maintain a certain distance.

But the capacity to establish formal and informal relations that are complementary is contingent upon a shared understanding of the contractual agreement. In the UK, managers were more likely to have experienced misunderstandings concerning the contract – for example, regarding the expected level of service or the sharing of performance gains. The following quotes from each country are illustrative:

> [The client] believed there was very little development work to be done on the piece of software that we were outsourcing. … So first thing was cost, second thing there was no development. Both of those proved wrong. (Case 7, client organisation, UK)

> To make an outsourcing contract successful, I think three things are very important: the first, a formal contract – a very, very good contract; second, the relationship between the two companies to manage this contract; and the third is that both companies must have the same understanding and the same culture. (Case 10, IT supplier, Germany)

A shared understanding of the formal agreement arguably provides a more stable and transparent mechanism for resolving conflicts between supplier and client. While strong trusting relations, per se, may send a positive signal of partners' willingness to solve conflicts, they are not a sufficient condition for managers' ability to solve conflicts. In the absence of a shared knowledge of what is defined within the formal contract, managers are likely to rely, in the first instance, on building agreements through personal, trusting relations, and, in the second, experimenting with various degrees of what may be considered opportunistic behaviour. One example of this is Case 1 (UK) in which the client and supplier became locked into an 18-month renegotiation period because of disagreements in cost reductions and profit sharing. We heard evidence of opportunistic behaviour on the part of the IT supplier and reliance on a 'huge legal branch' to manage the contract with the client organisation (Case 1, IT supplier, UK). Ultimately, both parties failed to renegotiate the contract; the contract was suspended and all activities were taken back in-house.

8.2 Contracting with a 'smart' client

Comparison of cases between Germany and the UK demonstrates important differences in the extent to which client organisations have the capability and expertise to design and manage the contract for IT services in a proficient manner. We refer to this as the 'smart client effect' and suggest that it has an important bearing on the ability of the client organisation to monitor delivery of IT services provided by the supplier organisation.

Table 8.1 lists five factors which contribute to a 'smart client effect'. Altogether, the evidence suggests that client organisations in Germany are 'smarter' than their counterparts in the UK. First, knowledge of technical standards is generally stronger in Germany. Our interviews with managers of IT firms in Germany revealed a strong respect for the contract managers and IT specialists on the client side:

> Everybody [on the client side] is specialized [in] a certain part of the outsourcing contract. For instance, there is one guy specializing [in mainframe services] who … for sure is the very best … So everything which deals with mainframes will be approved or requested by this guy. … They say, 'we think you have to do this and make it better

Table 8.1
Factors contributing to the 'smart client effect'

Contributing factors	Germany	UK
Knowledge of technical standards	Strong institutionalised norms	Weak norms
Expertise in designing and managing contracts	Strong in both client and supplier organisations	Limited in client organisations; strong in IT suppliers
Retention of IT expertise	Strong expertise retained by client	Mixed experience
Market discipline	Clients actively exploit multi-supplier contracts and benchmarking to control prices	Client organisations use consultancies to provide benchmarking services
Informal relations	Strong trusting relations	Strong trusting relations

> because we think that the service quality is not good' … They are very, very good. (Case 9, IT supplier, Germany)

Secondly, client managers in Germany appeared more adept at designing and managing contracts. For example, in Case 12, the client manager stressed their achievements in writing good contracts for IT services provision, facilitated by a strong expertise in technical knowledge and in negotiating contracts:

> We are very proud of our contracts. They have a high level of flexibility for us. … [Our] approach [is] to be a briefing factory. That means if the consumption decreases we want to reduce what we are buying in [terms of] top-up services, in storage volume. If it increases we want to buy more. (Case 12, client organisation, Germany)

A third critical factor is the extent to which the client organisation retains relevant capabilities and skills rather than simply outsourcing all expertise. These skills include not only technical know-how and contract/service management capability, but also strategy and leadership skills. Retention of such skills provides a bureaucratic check on the terms and conditions of the contract. Also, such staff can take charge of the long-term strategic direction of the client organisation's IT architecture rather than leave it in the control of the IT supplier; this enables the general business strategy to be continuously reformulated around an internally driven IT strategy.

In Germany, joint ventures greatly facilitated client's access to IT skills and expertise since they retained a controlling share of the enterprise. However, retention of staff was also common in the other German cases. In the UK, the data suggest a mix of strategies, with one client organisation retaining no staff (Case 6) and another retaining seven staff initially and then increasing this to 75 within the first 18 months of the contract (Case 1). Where retained, client managers argued that IT expertise was essential for developing different parts of the IT structure and maintaining the link between IT services provided externally and internal business strategy.

> It gives them somebody on their side who speaks the same jargon as the IT people and who then explains it back to them. … It also gives them somebody who they trust, who can explain how the service agreement is developing. (Case 1, IT supplier, UK)

> We definitely do not want [the supplier] to define the strategy concerning the infrastructure for us. They can do proposals for the strategy, propose something, but we have the competence still within the company. … We need competence on the contract management on our side to have a balance. (Case 9, client organisation, Germany)

However, in both countries, it could also act as a source of conflict, largely because it was often constituted not only by IT staff in the client firm (who were not transferred to the IT supplier), but also by business consultants who may have had some ulterior motive. In Germany, one IT supplier referred to the three-way inter-organisational relations as the 'bitter triangle' (Case 13), and another labelled the retained IT staff as 'the freaks' (Case 9); in the UK this group of staff was called the 'brick wall' (Case 1).

A fourth factor is the willingness and ability of client managers to exercise 'market discipline' (the threat of switching suppliers) as a mechanism for leveraging unit-cost improvements from IT suppliers. The evidence was stronger for Germany than for the UK. We found more evidence in Germany of multi-supplier contracts and more cases where clients actively exploited benchmarking of prices by inviting rival firms to make bids on a regular basis. For example, the 'briefing factory' approach adopted in Case 12 represents a model of contract flexibility, both in pricing and in service lines. In addition, it allows for a multiple provider strategy 'to have some competition' (Case 12, client organisation, Germany) and regularly seeks offers from other service providers to facilitate cost comparisons (Case 12, IT supplier, Germany). As further evidence of its apparent success the client contract manager in Case 12 strongly believed that managing services provision through an externalised contract was more effective than through an open-ended employment contract:

> It is easier to be a customer and say we have spent money and we expect this and that and do it for me and if not I will change [IT supplier]. They [IT staff] have to deliver and also this switch from being part of the [client organisation] community … Now [IT staff] are providers, and they are measured as providers in the market and not as former colleagues. (Case 12, client organisation, Germany)

However, in both Germany and the UK the increasing concentration of the supply base (chapter 5), coupled with the non-separability of production and IT strategies (chapter 4), generates problems of contractual 'lock-in' that limit the potential discipline of the market. Prior to a new round of procurement, client organisations were forced to invest significant resources in building interest among alternative bidders. IT suppliers, on the other hand, were more likely to pose the question, 'what's wrong with lock-in?' (Case 2, IT supplier, UK).

> Our view is that we are not locked in. … We have put an incredible investment into visiting and buttering up potential bidders. We have done a tour of the world, going round telling people. (Case 2, client organisation, UK)

> It's not so easy to change your service provider. You must invest a lot of money to do that. … We know the processes, because we have the [client organisation] employees and so on. And if you change the service provider, … the new service provider will start at the beginning. (Case 12, IT supplier, Germany)

9 Performance improvements

9.1 IT-enabling improvements in production

The ubiquity of IT in the organisation means that IT outsourcing may be accompanied by wider transformations in the production systems of the outsourcing client organisation, or in the systems for managing and delivering services. Evidence of such wider spillover effects supports the notion that production and IT activities are generally non-separable.

Perhaps the most dramatic case is that of the British aero-engine producer in which IT outsourcing was accompanied by a complete business transformation. The IT supplier assumed responsibility for all technology infrastructure, networks, systems and applications of the client. Following consultations with an external business consultant, the supplier advised the client on various aspects of broader business transformation. Initiatives included product development (to reduce product development lead times and deploy a best-practice-engineering IT environment), lean manufacturing (to cut engine build times, increase stock turns and reduce work-in-progress), supply-chain management (ordering of multiple parts under one part number to enable close relations to first-tier suppliers), strategic sourcing (long-term machine tool deals with preferred suppliers) and repair and overhaul (improving turnaround time, work-in-progress and inventory).

> [The client] was running at about 2% of its overall turnover invested in IT. So the discussion went along the lines of, 'Well OK, if you outsource your IT functions, you will gain some efficiencies and some cost savings, but it's only on 2% of the overall turnover. So it's worth having. But how will that get you ahead of [the competitors]? … Instead of just looking at IT as a separate thing, could we not join the business strategy and make some improvements in the way the operation works, supported by new IT, not just running IT as it was?' (Case 6, IT supplier, UK)

In this case, the client's business model changed from the sale of engines to the leasing of engines – referred to as the sale of 'power by the hour' (Case 6, client organisation, UK).

Similarly, the German liner shipping company also transformed its business model. IT was considered crucial in enabling the transformation of the client organisation's business model and enabled measurement of business, as well as IT, performance.

> We measure our business in 'TUs'. TU means 'twenty feet equivalent unit'. A small one, this is 20 and … if you have a 40 foot [one], then it's two TUs. … Every year we have an increase of about 10–12% of these TUs and we do that with the same staff every year, so the productivity increase is dramatic and for that reason we need good accuracy, IT systems and also an excellent IT operation. (Case 9, client organisation, Germany)

Finally, at the British charter airline company, prior to the IT outsourcing arrangement the ground handling staff at the airport would telex the client with information regarding flight landings. All flight details were tracked on wipe-boards on the walls of their offices. Improvements in IT following the outsourcing deal transformed this activity so that all

operations were subsequently undertaken in a small office with six double screen workstations. This led to important cost savings in a range of areas of the firm's organisation of services delivery.

> Before the [new IT] system was introduced there was something like 3.7 crews employed per aircraft … – that's pilots and cabin crew and that sort of thing – bearing in mind that only one pilot can fly an aircraft at one time, yet you always pay for two other people … You could reduce that … to about 3.2. Now you multiply that over the airline, that is just mega, mega savings. (Case 3, client organisation)

9.2 Skill-enabling performance improvements

Importantly, many benefits from the outsourcing arrangement resulted not from the new expertise brought by the IT supplier, but from the continuity of skill and tacit knowledge among transferred staff. In all our interviews with IT supplier managers, we were informed that the practice of staff transfer provided the bulk of skills and capabilities needed by the IT supplier to meet the conditions and standards set out in the contract with the client organisation. The transferred IT staff took with them the industry, firm-specific and customer knowledge required to provide the contracted IT services.

> There are two reasons [why the skills of transferred staff are important]. The first one is that some of those key people are the managers, … they can [carry] the motivation of those people, during the transformation process. That's one very important reason because being outsourced can cause uncertainty amongst … people. … And the second reason is if one particular employee has customer specific knowledge, … this is knowledge that you need to achieve … good customer satisfaction after the transition. (General interview, IT supplier, Germany)

> [The contract cannot operate without staff transfer] because it needs to have the skills from the data centre, all the jobs and all the applications, in which order they are to be done, and so on … the whole operation. (Case 13, IT supplier, Germany)

The practice of staff transfer provides a number of direct benefits for the IT supplier: it does not face the pressures of large-scale recruitment to meet new business needs (a major problem in a tight IT labour market); it saves on training costs since staff already have accumulated knowledge of IT and of the client organisation; it deepens its own pool of knowledge and skills in dealing with a range of customer firms. However, whether or not these apparent benefits feed into performance improvements for both the client and the supplier depends on other factors.

First, while IT suppliers may benefit from retaining transferred staff on the account for their former employer (the client) – since they have all the tacit knowledge of the key contact staff, procedures and business practices – this practice may conflict with the aspirations of the transferred staff who may expect to develop new, broader career paths in IT with their new employer. Secondly, where the client is relatively weak in monitoring the quality of IT services provided (a weak 'smart client effect'), the IT supplier may seek to redeploy 'high fliers' to other areas of the business to improve its own performance at the expense of that of the client organisation. Thirdly, transferred workers may resist the change of employer, especially in cases where client and supplier organisations have

radically different reputations as employers (for example, unionised vs non-unionised, or public vs private sectors). Such resistance may shape worker attitudes post-transfer, undermining efforts by the IT supplier to improve performance by implementing universal corporate policy and practice across the different contracts. Finally, an IT supplier may not wish to invest in skill development among its employees on those contracts where there is a high risk of it switching to a competing supplier. Repeat contracting may therefore be expected to encourage peaks and troughs in patterns of IT skills investment.

10 Tensions between client organisations and IT suppliers

10.1 Minimising costs vs maximising revenue

All 13 contracts were initially signed on the agreement that there would be significant cost savings in the provision of base-line services (chapter 6). For the client organisation, this fits with a goal of maximising unit provision of IT services per unit cost. For the IT supplier, however, the promise of cost savings per unit provision has to be harmonised with a somewhat different goal, that is, to maximise revenue.

In many of the cases we were informed that the IT supplier had made a bid for base-line services provision with very tight profit margins, with the aim of achieving greater profits through the sale of additional services. The goal of IT suppliers is thus to expand sales through marketing new products and systems to client organisations – in other words, to exploit a potentially captive market. For example, the manager at the IT supplier in Case 9 confidently expected to grow the contract by 'at least' 50%:

> Otherwise it doesn't make any sense [for us]. … In the market, in general, all those contracts are calculated very keenly and for sure one big advantage of having such a type of contract is to do the additional business – to be the preferred vendor for any additional services, which in general would be more profitable than the base contract is. (Case 9, IT supplier, Germany)

In some cases there was a happy marriage of goals. Where the client organisation was expanding in size we identified fewer problems of conflict since the expansion brought an automatic increase in revenue to the IT supplier. For example, in Case 8 a string of acquisitions by the client organisation was welcomed by the IT supplier – 'Good news for us, we can't help [doing more] business' (Case 8, IT supplier, Germany).

However, in most cases the client was strongly focused on cost restraint, which limited the ability of the IT supplier to generate revenue from selling additional services. While client managers in both countries identified the need for cost restraint, only in Germany did our interviews with IT supplier managers corroborate the constraining impact of clients' cost pressures. This reflects the stronger expertise of client managers in negotiating and managing contracts (chapter 8). For example, in Case 12 (Germany) the client negotiated annual price reductions of 5–8%. Despite this, and perhaps reflecting the German corporatist spirit, the client organisation did not wish to exploit the IT supplier. The following quotes are illustrative of the different positions:

> I cannot offer [an additional] service with higher quality and additional cost. I can forget this at the moment. Their goal is to decrease the cost, decrease the cost. … There is only one partner that is winning here. And that is [the client organisation] – they have a very good deal. (Case 12, IT supplier, Germany)

> We say [to the IT supplier in the annual price negotiations], 'We don't want to kill you by decreasing and capping costs and expecting the lowest price ... possible. … We will pay you a price that is competitive, that is fair, and that will help you to survive. … We see that you also have to earn money'. (Case 12, client organisation, Germany)

10.2 Cost pressures vs innovation

A second potential tension revolved around the cost-based nature of the contract and the flexibility and freedom required for innovation. In particular, clients and suppliers often experienced difficulties in agreeing to upgrading of services and capabilities.

> If you want to bring new technology into an environment it will cost you some money which somebody has to pay, and if the contract is not calculated that comfortably that it brings that money, you cannot do that, you have to run it on the old machines until they are paid off. (Case 9, IT supplier, Germany)

Also, the IT supplier typically favours upgrading and innovations which are relatively standardised, whereas the client favours retaining an element of customisation; the chosen form of innovation thus has differing impacts upon the cost base of the two organisations. In some cases, there was evidence of IT suppliers seeking to develop the contract through providing standardised products and processes, often against the client's interests.

From our small sample of case studies in the two countries, it would appear that client organisations in Germany were more likely to be in control of their innovation development compared to clients in the UK. In one case, the client organisation retained the application development and had recently set up a new formal post of innovation manager, with a team of five staff, responsible for co-ordinating innovation across divisions and challenging external providers to integrate these issues.

> Should we implement voice-over IT instead of old telephony? … New forms of storage and back-up systems – intelligence based, to reduce costs and to improve performance? … And, also, with regard to monitoring and end-to-end performance measurement, how to implement this? And this is done in the form of initiatives by our innovation management committee. (Case 12, client organisation, Germany)

Indeed, some IT suppliers in Germany readily admitted that clients were more innovative than the IT supplier (reflecting their retention of IT capabilities, see chapter 8) in terms of being better informed of new market developments in IT. From the IT supplier side we identified frustration in both Germany and the UK that IT suppliers were not more innovative.

> Frankly I must say sometimes the customer is more innovative than we are. And the customer tells us, 'listen, the strategy of the market is in this and … we are expecting from you the same innovation'. … Most of the time the innovation is coming from the customer and we are running after that. (Case 9, IT supplier, Germany)

> Before outsourcing we thought that maybe [the IT supplier] would always want innovations and that we would have a problem to follow – that they would always want to have the newest version. … [But the supplier] is very passive, like a normal [in-

> house] IT operation. … Because IT operation people don't like to change; because … it's running fine. … So [it takes] a lot of effort and [energy] from our side to get innovation, to push them. (Case 9, client organisation, Germany)

10.3 Restructuring pressures

Finally, both client and supplier organisations are subject to wider pressures for restructuring, leading to contraction or expansion of business activities, which impact upon the nature and scope of the IT outsourcing deal.

In Germany, many of the client organisations had to deal with a rapidly expanding IT supplier as the joint venture shifted in form to an outsourcing deal with a global player. For example, the IT supplier in Case 12 expanded (from a local joint venture to a global firm servicing third-party clients) and the client organisation quickly experienced problems related to the loss of exclusivity of service provision. Within a short space of time, however, it had changed the service level agreements to introduce rules that prevented prioritisation problems (Case 12, client organisation, Germany). In other cases, problems associated with corporate restructuring remained. For example, in Case 9 the IT supplier relocated its network system management business to Hungary as part of a corporate level objective to deliver economies of scale across broad geographical regions. At the contract level, however, both client and IT supplier managers complained of problems of co-ordination and a lack of commitment among staff in Hungary to the needs of the German client.

> So somebody in Hungary says, 'Okay, who is [the client organisation]? Maybe the freight liner is lying in the port for one day longer – so what! My work is finished now. I've tried [twice] to get somebody on the phone. He wasn't there so I went home'. This would never happen in [the German city]. [Here,] they work until the problem is solved. (Case 9, IT supplier, Germany)

In general, our cases illuminated more examples of failure to resolve tensions in the UK compared to Germany. Importantly, however, resolution of differences did not always mean a win–win scenario for all interested parties. For example, in the German case where we identified the strongest restructuring pressures on the client organisation to reduce costs (Case 12), the IT supplier was keen to collaborate with the client in new ways of restructuring IT services provision. It had already outsourced its applications development (for example, SAP) to Spain and planned to explore options of outsourcing certain activities to a firm in India, despite the potentially negative impact on its ability to co-ordinate network services provision:

> We are in discussion with [a client organisation] to work for [another firm] in India. But you must find a business case. On the one hand, we have less employee costs. But on the other side, you must look to the costs for the wider area network. … [The clients] are looking for possibilities to decrease costs. You must help them. (Case 12, IT supplier, Germany)

In both countries, therefore, the context of the contracting relationship transforms over time reflecting changing pressures on both the client and the supplier sides (business restructuring, new acquisitions, global consolidation, and so on). These external and

corporate-wide pressures continuously generate new tensions between supplier and client, especially regarding the ability of IT suppliers to generate higher margins from sales of additional services. Although far from representative of country dynamics, our selected case studies do suggest that 'smart' clients in Germany are better positioned to manage these tensions proficiently and are more likely to retain a partnership approach despite having to constrain expected revenue streams to the IT supplier. In the UK, by contrast, our evidence suggests that tensions and conflicts are less easy to resolve, reflecting problems of weak technical knowledge among clients and opportunism among IT suppliers.

11 Conclusions and policy implications

11.1 Conclusions

Growth in IT outsourcing represents an important feature of high-tech business services and, as such, plays a potentially important role in strengthening and progressing a country's path of economic development. Germany and the UK are at the top of the European league in the IT outsourcing market. The evidence presented in this report shows that although the IT outsourcing market in Germany developed later than in the UK, by the year 2000 it had reached a similar size, estimated at around €11 billion in each country. Moreover, in both countries there is an increasing concentration among IT suppliers, a strong role of US-owned multinational IT firms and a growing trend towards 'mega-deals' in IT outsourcing arrangements.

The case studies of 13 IT outsourcing contracts presented in this report suggest that our understanding of how developments in IT contribute to wider economic growth and innovation requires detailed knowledge of the character of organisational forms which provide the institutional architecture for the contracting arrangement between client and IT supplier. The provision of IT in an outsourcing arrangement cannot be characterised as a simple market transaction. In both Germany and the UK, IT outsourcing agreements were characterised by use of formalised contracts, informal trusting relations and, crucially, the transfer of IT staff to retain tacit skills. IT outsourcing was generally expected to enhance performance and innovation through economies of scale and production efficiencies, but, quite unexpectedly, this demanded a great deal of active management input (from both client and supplier) and client investment in retaining relevant expertise. Tensions between conflicting goals of client and supplier (costs vs upgrading, or standardisation vs customisation) also brought into question the sustainability of innovation, and the practice of recurrent contracting raised the risk that neither client nor supplier would take responsibility for investment in skills among IT workers.

Inter-country comparison revealed significant qualitative differences in the implications of the expanding IT outsourcing market. First, IT outsourcing followed two quite different trajectories of organisational forms in each country, with greater use of joint ventures – at least in the short-term – in Germany than in the UK. The stronger degree of ownership integration between client and supplier in Germany enabled client organisations to control access to tacit skills and knowledge more effectively than clients in the UK. Also, in the context of stronger employee information and consultation rights, joint ventures made possible a more stable and co-operative transfer of staff from the client to the supplier.

Secondly, managers in Germany benefited from strong institutionalised norms of technical standards and technical skill. 'Smart' client organisations in Germany were able to exploit the market incentives of multi-supplier contracts, as well as to design and manage the contract for services provision more proficiently. In contrast, client organisations in the UK tended to rely solely on trusting, 'partnership' relations, which

were associated with a high risk of conflict and opportunistic behaviour, reflecting problems of low technical knowledge among contract managers. Being 'smart' enables clients to monitor the quality of IT services provision, as well as to chart future directions in a way that is compatible with in-house business strategy.

11.2 Policy implications

Our research findings raise implications for the central policy actors – employers and employer associations, trade unions and government – in three areas of policy: innovation policy, employment policy and industrial policy.

The issue for innovation policy is how best to ensure that IT services provided by external, often multinational, suppliers are both suitable for the business needs of client organisations (in manufacturing, private and public services) and complementary to the institutions of the national innovation system. Our research findings highlight the need, especially in the UK, to improve the effectiveness of contracting relations between computer service providers and their clients. What is required is a strengthening of contract management, technical and business expertise, thus improving the ability of clients to benefit from, and control, knowledge transfer from suppliers. This yields implications for management strategy (especially knowledge management) and for policy (in terms of support for client firms). Our evidence suggests that the UK can learn policy (national and inter-organisational) lessons from Germany regarding the important role of the wider institutional conditions, such as stronger trade associations and the more clearly defined technical standards shared by IT firms and client organisations.

Employment policy needs to address two issues: how to ensure long-term investment in IT skills and how to improve industrial relations in a context of unstable market-based contracting arrangements for outsourced IT services. Staff transfer is a critical component of IT outsourcing deals; IT firms that win the bid to provide IT services depend on transferring staff for their firm-specific skills (knowledge of the way IT interacts with the client's production process) and their informal, collegial relations with staff in the client organisation. However, in both Germany and the UK we encountered a great deal of confusion and conflict regarding the staff transfer process and conflicts between client and supplier regarding the financing of skill development. Policy action between employer associations and unions therefore needs to address the problem of how to reproduce IT skills and under what circumstances these ought to be jointly financed by client and supplier, and to provide guidance on how to manage staffing arrangements at the end of contract periods. Again, there are lessons for the UK from Germany. The stronger role of Works Councils in Germany sometimes slowed the process of outsourcing but also added a greater degree of transparency in relation to employment rights. Works Council representatives played an active role in investigating the track records of competing IT firms and thus encouraged a 'best fit' with the client organisation's existing human resource policy. In the UK, employee voice mechanisms were largely absent, leading to a higher risk of industrial relations disputes and workforce divisions.

Industrial policy must focus principally on the characteristics of the market structure of the supply base for IT services. The extent to which IT outsourcing can provide a foundation for improved innovations in IT products and processes depends partly upon

this feature. Both countries are characterised by a strong (and increasing) concentration of the supply base for IT services and this raises questions regarding the relative power of supplier and client. Increasing concentration among IT suppliers makes it more difficult for client organisations to switch suppliers and raises the risk that they will become locked into large outsourcing deals with a single supplier. These issues were equally apparent in Germany and the UK, although the effects were mitigated somewhat in Germany by the 'smart client' effect. Policy action is thus needed to restore a more even market structure, which would improve the ability of client organisations to strike arrangements that enable developments in innovation to be managed in line with their business capabilities. Policy to encourage multi-supplier contracting and subsidies for arrangements with smaller organisations (especially localised joint ventures) may be useful in this regard.

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Appendix

The project involved a collaboration between a team at the Manchester School of Management, UMIST, UK (Dr Damian Grimshaw, Dr Marcela Miozzo and Dr Paulina Ramirez) and at the Institut Arbeit und Technik, Gelsenkirchen, Germany (Dr Matthias Knuth and Thorsten Kalina). The method of primary research involved the collection of qualitative interview data through case-study investigation. We selected 13 case studies of IT outsourcing contracts, six in Germany and seven in the UK, and in each case data were collected through semi-structured, detailed interviews with at least one senior manager responsible for the contract in both the IT firm and the client organisation. Each case study thus consists of two organisations. In addition, documentary information was collected for each case and a background interview was carried out with a senior manager with general responsibilities at each IT firm.

The original intention was to select a mix of US-, UK- and German-owned IT firms and to compare and contrast IT outsourcing arrangements in the UK and Germany. To some extent, our data sample allows us to control for 'country-of-origin effects' since we have investigated the IT outsourcing contracts of two multinational IT suppliers in both countries. Also, our selection of client organisations reflects the national data on the different markets for IT outsourcing with a stronger representation of manufacturing firms among the German sample and inclusion of public sector contracts in the UK. In more detail, our selection of client organisations covers the following sectors of economic activity:

- Manufacturing (3 in the UK, 3 in Germany)
  - (of which, Chemicals (2 in the UK, 1 in Germany))
- Transport (1 in the UK, 1 in Germany)
- Banking (1 in Germany)
- Telecommunications (1 in the UK, 1 in Germany)
- Public sector (2 in the UK)

The IT outsourcing contracts investigated varied by country coverage, with three covering more than 40 countries. Also, many of the contracts have been renewed at least once (Table A1).

Importantly, the 13 cases were also characterised by differences in the type of IT services provision covered by the outsourcing arrangement. Five cases involved infrastructure outsourcing, which generally includes the outsourcing of data centres (staff and infrastructure), desktop outsourcing (including help desk and software distribution) and other features such as print services, ATM services and storage. The other cases all involved some elements of applications outsourcing, which includes activities such as processing services (such as SAP, CAD/CAM, payroll, billing, and so on) and development of these applications. Four cases were characterised as 'complete' IT outsourcing since they involved the outsourcing of the client organisation's infrastructure and application management (data centre, operating systems and software development).

Table A1
13 case studies of IT outsourcing in Germany and the UK

IT supplier	Client organisation	Country coverage (co-ordination)	Contract initial value	Duration (start date)	Staff transfer
IBM	Hapag Lloyd	70 countries worldwide (Germany)	€100 million €60 million	5 (1998) 5 (2002)	20–30
IBM	Deutsche Bank	8 European countries (Germany)	€35 million €2 500 million	5 (1999) 10 (2002)	900
IBM	Continental[1]	40 countries worldwide (Germany)	€75 million	10 (1994–95)	280
Logica	Becks (Interbrew)	Germany	€54 million	5	28
T-Systems	Henkel	Germany	€100 million €25 million	7 (1996) 3 (2001)	55
T-Systems	Deutsche Telekom[1]	Germany	n.a.	n.a.	Approx. 12 000
IBM	AstraZeneca[1]	45 countries worldwide (UK)	£1 150 million	7 (2001)	420
IBM	Cable&Wireless[1]	UK	£3 500 million	10 (1998)	1 600
EDS[2]	Dept of Work & Pensions[1]	UK	>£2 000 million	10 (2000)	3 000
EDS	Inland Revenue	UK	£1 600 million	10 (1994)	2 300
EDS[3]	Rolls Royce	UK	£1 400 million	10 (1997)	1 190
Logica	Britannia Airways	UK	£27 million	7 (2000)	30
Logica	British Petroleum	UK	£24 million	5	20

Source: *Financial Times* (various issues); management interviews; company documentation.
Note:
1. We were unable to arrange an interview with a representative from the client organisation.
2. This cost estimate is based on public information which states that prior to signing the contract the Department of Work and Pensions spent over £200 million annually on IT services. Also, while EDS is the lead supplier, it operates on this contract jointly with IBM and Price Waterhouse Coopers.
3. This contract is jointly with AT Kearney (an EDS firm).