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HIGH INVOLVEMENT WORK SYSTEMS: THE ONLY OPTION FOR UK HIGH SKILL SECTORS?

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Editor's Foreword

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Abstract

The UK government is emphasising modern employee relations practices and partnership as central elements to a competitive strategy based on high skills. A key issue, therefore, is whether existing high skill industries in the UK are utilising these types of practices. This paper provides evidence from research carried out in the UK that the take-up of high involvement work systems has been limited in two high skills sectors - pharmaceuticals and civil aerospace. Following an examination of the reasons for such results, it is argued that government policy needs to address a broader range of issues, in particular the low levels of investment in research and development, job insecurity and the activities of multinational companies.

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Introduction

The 'knowledge economy' has become a common term to encompass what are perceived to be all embracing changes in the nature of competition and production. As a result of the widespread use of information and communication technologies, knowledge is now claimed to be the most important productive resource (eg. Seltzer and Bentley 1999; Giddens 2000:67). Arising from the flexible specialisation and post-Fordist literature, this general approach has been taken up with enthusiasm by a wide range of policy makers and their advisors, including the OECD and the European Commission (OECD 1996, EC 2000). The UK Labour government has also been strongly influenced, culminating in the economic strategy document *Building the Knowledge Driven Economy*.

> In the increasingly global economy of today, we cannot compete in the old way… British business must compete by exploiting capabilities which its competitors cannot easily match or imitate… They must be knowledge, skills and creativity, which help create high productivity business processes and high value goods and services. (DTI 1998a:1.5)

Faced with an analysis of competitive advantage based on the skills and knowledge of employees (rather than simply their cost), policy makers have been forced to confront the UK's poor record on training and development, the lack of employee involvement in decision-making and the low trust nature of the employment relationship. As a result, there has been some recognition that employers may have to make changes to the way in which employees are managed and work is organised.

> Modern employee relations practices, built on a spirit of partnership in the workplace, are an essential asset. (DTI 1998b: 4:35)

One of the main mechanisms to encourage changes in employers' behaviour is the DTI's 'partnership at work' initiative, which includes a fund for developing 'joint approaches to solving business problems'. Consultation and involvement of employees, team working, training and development, and effective communication are seen as essential elements of a strategy to succeed in the current and future competitive environment (DTI 1999a). This type of approach is based upon evidence from a growing academic (and practitioner) literature on the sort of human resource management practices which can deliver high levels of company performance. High commitment, high performance or high involvement management (from here on described as high involvement work systems (HIWS)), although varying in definition,

tend to include semi-autonomous team working, devolved responsibility, employee involvement, quality circles, appraisal and high levels of training and development.

The UK government is placing a partnership model with modern management practices as central to business strategy for competing within the new knowledge economy. This paper assesses whether this model is in fact crucial to the success of the sort of high value-added, high skill workplaces which currently exist within the UK. Drawing on research undertaken within the UK pharmaceutical and civil aerospace industries over a two year period, the paper explores the take up of HIWS and the implications for government policy.

High involvement and high performance

There has been a steady rise in interest in HIWS since the end of the 1980s. Argued to represent the essential human resources strategy for the new globalised economy, it offers the prospect of high levels of performance for companies that participate, while those that do not will be unable to 'rise to the challenge of the more stringent competitive standards if they continue to use old-fashioned methods to organise and manage the work process' (Appelbaum et al 2000:3). Globalisation, new technology and customer demands for innovation, quality and flexibility provide the basis for new forms of work organisation and relationships between management and employees (e.g. Dyer and Reeves 1995; Becker and Gerhart 1996; Osterman 1998; Appelbaum et al 2000).

There is a growing body of research which provides evidence of the links between HIWS and company or plant performance (see Richardson and Thompson 1999; Wood 1999 for reviews of the literature). One of the main debates has been whether HIWS represents a universal best practice that all firms should adopt, or whether performance outcomes depend upon the 'fit' with other elements of a firm's business strategy (Purcell 1999). It could be argued that the UK government is pursuing a best practice view in emphasising that all firms can benefit from modern employment practices and partnership. In contrast, proponents of the 'best fit' model tend to follow the approach of Schuler and Jackson (1987), that HIWS are more likely to be effective in firms that emphasise either innovation or quality enhancement strategies, rather than cost reduction approaches (eg. Pil and MacDuffie 1996; Cappelli 1999; Mason 1999; Appelbaum et al 2000; Boxall and Purcell 2000). In either case, those pharmaceutical and aerospace firms involved in research and

development are likely to have the relevant business strategy which in theory would make HIWS a 'good fit'. The only evidence to support any implementation in these two sectors is a survey undertaken of UK aerospace establishments. This found that only 20% were using high performance, HR practices to a significant degree (Thompson 2000).

Before considering why diffusion has been limited, not just in the UK aerospace sector but more broadly, it is important to recognise that there is no clear agreement on what is meant by HIWS. This is not just a question of which practices are included and which are excluded (see for example the survey by Becker and Gerhart 1996), but a fundamental difference in perspective. Edwards and Wright (2000) argue that there are at least two very different models of HIWS. The Anglo-Saxon version emphasises performance management (see Wood 1999) and the link with lean production or total quality management, and may include only limited employee autonomy and decision making. The second is based on the earlier Scandinavian socio-technical system, where employees have broader job descriptions, greater decision making and where improving the work process is the central aim of employee involvement. These two models and the variety which lie in between, make the outcomes of practices difficult to compare and provide radically different interpretations of terms such as employee involvement and partnership.

Research in this area has tended to emphasise the testing of relationships between policies and outcomes rather than on **how** practices lead to improved performance. A number of assumptions (untested) are made about the impact on intermediary factors, such as employee commitment, motivation and skills. Improvements in these areas are then assumed to lead to workers behaving in one or more of the following ways: exerting more effort, being more flexible, working smarter and focusing on organisational goals (Arthur 1994; Pils and MacDuffie 1996; Guest 1997). To some this is about working smarter (Appelbaum et al 2000), to others it could also be about working harder, i.e. intensification (Edwards and Wright 2000). The balance may depend on the type of HIWS being introduced, with the lean model stressing performance elements and changes in the production process, as opposed to broader skills and greater levels of decision-making under the socio-technical system. With the UK government's emphasis on partnership, communication and involvement, we might expect the social technical system to be more influential. However, with less evidence available on the benefits of socio-

technical systems, alongside UK managers' traditional hostility to such approaches (Geary 1994), it would seem more likely that the Anglo-Saxon model would find greater favour.

The issue that is increasingly being raised about all forms of HIWS is, that despite all the evidence of their positive impact, diffusion has been very limited (eg. Cappelli 1999). Nevertheless, there has been little discussion as to why some organisations use them and other do not. Pil and MacDuffie (1999:82) argue that changing to HIWS 'is hard [and] successful change is rare', while the benefits of HIWS may take time to appear and new practices can initially be 'competence destroying' (Pil and MacDuffie 1996). Returns on investment in such practices are not immediately apparent, providing a strong disincentive for the many managers who operate under short-term financial reporting systems. Alongside the limited short-run benefits, there may be difficulties in the implementation process, if for example there is a lack of employment security, poor skills provision and a resistance from trade unions (e.g. Brown et al 1993; Kochan 1997; Whitfield and Poole 1997; Appelbaum et al 2000).

Some empirical studies include job security as one of the many elements of a HIWS (e.g. Delery and Doty 1996; Ichniowski et al 1997), placing it on a similar level of importance as the use of quality circles or appraisal schemes. Others are more emphatic (Brown and Reich 1997; Appelbaum et al 2000), arguing that job security is central to the successful implementation of HIWS. In particular, the absence of employment security is believed to undermine employee involvement and cooperation with change (Brown et al 1993). Similarly the ability to gain union cooperation in introducing HIWS could be vital to its likely success (Pils and MacDuffie 1996; Appelbaum et al 2000). As has been argued elsewhere (see Richardson and Thompson 1999), the process of implementation of new practices can have an important impact on outcomes.

Evidence from a survey of ten European countries found that works councils and union representatives were in most cases ''agents of change', rather than barriers to the development of the more intensive practice of direct participation', i.e. giving employees influence over their immediate work situation (Gill and Krieger 1999:587). Stronger forms of employee representation were also associated with higher levels of participation. However, for the UK, Wood and de Menezes (1998) found a lack of relationship between high commitment management and union recognition. In

addition Heckscher and Schurman (1997:326) have argued that labour-management cooperation should not be assumed to always offer solutions, as 'partnerships at the level of the firm constantly run into pressures from outside that make it impossible for any deal to hold'.

These types of arguments have led to an increasing interest in the question of external fit with wider institutional and economic features. Kochan (1998) argues that in order for firms in the US to effectively compete on skills, there needs to be a reconstruction of the social contract between employers and the workforce that will encourage employee representation and participation. Flexible labour markets, large supplies of low skilled workers, limited institutional role for trade unions and poor general skills make alternative strategies more attractive (Brown and Reich 1997). As Hillard and McIntyre stress that 'without a supportive industrial relations framework in place HPWO [high performance work organisation] has only succeeded in a limited number of places. Most capitalist employers seem happy to stick to Taylorist top-down work systems' (1998:31). This may not just be the case within the US. Evidence from Germany, the usual example of a regulatory regime which encourages the 'high road', found employers claiming that the 'pendulum was swinging back towards Taylorist work concepts' (Sisson 1999).

Transferring the ideas of HIWS to Europe faces a very different socio-institutional framework and sets of constraints and incentives (see Whitfield and Poole 1997; Godard and Delaney 2000). Not only are there different forms of state regulation, public policy, training systems and worker organisation but there is a wide range of interpretations about the benefits or otherwise of these new practices (see Sisson 1999). The examples of HIWS used in research have been largely drawn from companies using semi-skilled manual workers operating under Taylorist work systems. It is unclear how or if such approaches can be integrated into workplaces which have higher levels of skills and are organised on a different basis. An example from the German pump industry found that a highly skilled manual workforce hindered the adoption of multifunctional work teams. It was argued that alternative production models to the US lean variety need to be developed to reflect the existing strengths of German industry (Finegold and Wagner 1998).

The UK potentially offers a closer match to the US model than other European economies, with its similarities in levels of regulation and workplace skills. Many companies in the UK pharmaceutical and aerospace sectors base their business

strategies on quality and innovation, indicating that a HIWS would 'internally fit'. However, given similar institutional features to the US, HIWS may be constrained by external fit, i.e. short-termism, inadequate investment in training and development, lack of strong employee voice and job insecurity. The paper evaluates the extent to which these two sectors provide successful examples of the implementation of HIWS. What barriers are there to such changes, especially in relation to job security and training? Are there alternative models of competitiveness which exist within these two sectors? Over-riding these questions is whether it is realistic for government competitiveness policy to be based upon a 'best practice' model of HIWS within a partnership framework.

Two high skill sectors

Pharmaceuticals and aerospace are frequently cited as exceptions to the UK's failure to compete in high skill, high-value added areas of manufacturing (Auerbach 1989; DTI 1998a:1.9; Crouch et al. 1999; Finegold 1999:63; Keep 1999). Despite their apparent success, both sectors have experienced upheavals during the 1990s. In pharmaceuticals, the squeeze on health expenditure and the growth in the costs of developing new drugs have undermined the long post-war period of high profits, steady growth and stable employment (see Ballance et al. 1992). Mergers, acquisitions and specialisation in pharmaceuticals are now the key dynamic, as major economies of scale are obtained in merging sales and research groups and rationalising production and administration. These changes have left the UK without a wholly owned major pharmaceutical company, for example Zeneca has merged with Sweden's Astra and GlaxoWellcome is merging with US-dominated Smithkline Beecham. Employment has declined from a high of 74,000 in 1992 to around 60,000, as many employees experienced redundancy programmes for the first time. Although a number of companies are still enjoying high profit levels and European employment remains stable, UK employment continues to decline (EFPIA 2000).

The early 1990s saw the aerospace industry hit by 'one of the worst recessions ever seen' as the civil aerospace industry swung into cyclical decline, coinciding with the downturn in military expenditure with the end of the Cold War. Employment fell by 40% between 1990 and 1995 as orders dried up. With the subsequent upturn in the industry, there has been a corresponding rapid increase in employment (around 36%), so that by 1999 approximately 150,000 people worked directly in UK aerospace,

making it the largest in Europe (SBAC 2000). In contrast to the pharmaceutical sector where ownership is now predominantly overseas, UK aerospace has remained largely British owned, with many UK companies such as BAe Systems, Rolls Royce, Smiths Aerospace and GKN Westland. However, several companies are engaged in joint ventures, such as Airbus and Eurofighter and mergers (previously predominantly within a country) are increasingly cross national, such as the recent merger of Matra-Aerospatiale, Daimler Chrysler Aerospace and Construcciones Aeronáuticas to form the European Aerospace Defence and Space Company.

The OECD has defined both these sectors as being high technology industries, on the criteria that they have high levels of investment in research and development. Aerospace and pharmaceuticals account for 41% of manufacturing research and development in the UK. For the pharmaceutical industry, the figures are high in comparison with key competitors, representing 15% of sales in 1994 (the US 12%, France and Germany 10% each) (DTI 1999b:25). In contrast the UK aerospace industry was investing only 60% of the G5 average (DTI 1997:12).

It is estimated that around one third of employees in aerospace hold a university degree or equivalent (SBAC 2000) and a recent survey of the UK pharmaceutical industry found that over 40% held a degree (Jagger and Aston 2000). This reflects large numbers of researchers and sales reps in pharmaceuticals and engineers in aerospace. Employees in both sectors, therefore, are considerably better qualified than the UK workforce as a whole, where only 20% had at least degree level qualifications (DfEE 2000:62). Nevertheless, according to OECD figures, there still remains around 40% in both sectors in low skill jobs, similar to the overall levels across manufacturing (OECD 1998). Manual workers account for over half of aerospace employees with around half of these in skilled, apprenticeship-based jobs. In pharmaceuticals less than one third are manual workers, the majority of whom are semi-skilled production line workers along with a minority of skilled chemical operators.

The research which forms the basis for this paper was carried out between 1996 and 1998 and consisted of interviews in 22 pharmaceutical and civil aerospace divisions or companies (shown in Table 1). These companies were chosen on the basis that they employed relatively large numbers of employees, in principle over 1000, within the relevant sector in the UK. Four pharmaceutical companies and two aerospace companies, identified as relevant to the study, declined to participate.

Interviews were initially undertaken with a senior person responsible for HR issues, normally HR directors or managers at corporate or divisional level. In some companies more than one interview was undertaken. Discussions also took place with national union officers and representatives from employers associations. At three companies case studies were undertaken (A10, P10 and P11), allowing a more detailed evaluation of the changes that were taking place.

Table 1: Summaries of UK pharmaceutical and aerospace companies research sites

Company[1]	Employees[2]	Size of parent company[3]	Ownership	Recent changes (1992-98)	Union recognition	Number of interviews
A1	2000	3	UK		yes	2
A2	4600	3*	UK		yes	1
A3	4700	3*	UK		yes	3
A4	1500	3*	UK		yes	2
A5	180	1	UK	sold-off	one site only	2
A6	320	2	UK		shopfloor only	1
A7	2100	4	UK		yes	1
A8	1000	1	UK		none	1
A9	1350	2	UK	sold-off	yes	1
A10	2800	3	UK	taken-over	derecognised	>30
A11	2000	3	UK	taken-over	yes	5
P1	1800	3	US		one site only	1
P2	1000	1	UK	sold-off	yes	1
P3	980	3	European/US	merged	derecognised	1
P4	500	4	European	merged	yes	2
P5	13,000	4	UK	merged	yes	1
P6	5000	2	UK	sold-off	yes	1
P7	2300	4	European		yes	1
P8	1240	3	US		shopfloor only	1
P9	2800	3	US		derecognised	1
P10	2350	3	European/US	taken-over	shopfloor only derecognised staff	>80
P11	1350	4	US		none	>30

[1] A aerospace
P pharmaceuticals

[2] aerospace: employees in relevant aerospace division/ company in UK; pharmaceuticals: all pharmaceutical employees in UK

[3] The size categories are: 1= below 5000, 2=5000-20 000, 3 = 20,000-50,000, 4= over 50,000

*same parent company

Civil Aerospace

The eleven workplaces in aerospace were all UK-owned and were either final assemblers or predominantly first tier suppliers producing mainly for the civil aerospace industry. It was clear that these companies chiefly competed on the basis of their technological expertise, design facilities and new products (see Table 2). A few managers mentioned cost as one of their advantages but skill and knowledge were the defining issues. All had research facilities of some sort, although A9 for example was limited to design of new processes as opposed to new products. These companies were, therefore, at the higher end of the product market and of the supply chain and were competing on an international basis for contracts. The companies were in a constant process of bidding for new work, alongside fulfilling old contracts and producing spares (where the highest margins are made).

Table 2: Competition in the aerospace companies

	Competitive Advantage	Competitive Pressures
A1	technology, cost, response	cost reduction
A2	technology, human resources	internationalisation, cost reduction
A3	customer focus, skills, technology	cost pressures
A4	partnership with suppliers, customers, cost	reduce cycle times, cost pressures
A5	niche market, knowledge	new technology, cost reduction
A6	new products, skills	delivery, price
A7	Technology	cut overheads
A8	patents, quality	quality, delivery
A9	broad expertise	low cost competition, politics of purchasing
A10	price, design, development, political relationships	profitability, cost
A11	technology, quality	cost

Note: Response of managers to i) what is the company's/division's main competitive advantage? ii) what are the key competitive pressures currently faced by the company/division?

Despite the upturn in the industry, the pressure on prices was intense as companies sought to fill their order books and their spare capacity. The level of margin depended on the customer (military was normally higher) and where a company was in the supply chain (the lower down and the less design input the

smaller the margin). Firms are operating in complex product markets where there is no simple division between quality improvement and cost reduction strategies. New products are vitally important to future success yet in order to gain contracts prices have to be extremely competitive. With only two major players in the civil industry, Airbus and Boeing, both offering discounts and price reductions to airline companies, the impact was felt on the whole supply chain. As a result, only one company (A8), which was operating in an area where it had a number of patents, did not feel the overwhelming drive to reduce costs. All the others emphasised that cost pressures were extremely severe.

> cost is increasingly important because we sell a service and are asked how much in hourly terms does it cost to make something… currently we are quoting hourly rates in pursuing contracts at what we aspire to rather than what we achieve. (human resources director, A11)

> We are not cash-rich. We are very lean - lean and mean… We are no longer in the days of cost plus contracts and that has made us change our approach to efficiency and budgets and people. (head of human resources, A8)

How have these dual pressures to innovate and reduce prices affected the types of employment practices used in companies? The principal difference in the general level of HR sophistication arose out of size of the aerospace part of the company as opposed to business strategy. The larger aerospace organisations had a number of centralised HR functions and a greater role for the personnel or HR function, normally a board level position (A1, A2, A3, A4, A7, A11). There tended to be some overall HR strategy and resources attached to the HR function and a relatively important role for HR at the workplace. The remaining companies employed fewer aerospace employees (even though some were part of a larger, more diversified parent company) and had either a limited or no HR central function (A5, A6, A8, A9 and A10). Three of these companies also had a very limited HR function at the workplace (A6, A8, A9).

Reflecting the division based on size and the importance of the HR function, similar outcomes are found when looking at the role of trade unions. Those larger organisations, plus A9 which had previously been part of a much larger aerospace company, had relatively strong trade unions, with a history of conflictual relationships, particularly between management and shopfloor workers. All were attempting in some way to redraw these relationships either by pushing for

partnership type approaches or by trying to marginalise the unions. The trade unions in these companies have tended to exert more influence on the development of new management practices and how they are implemented. The other smaller companies or workplaces, were either non-union (A8), had derecognised some or all unions (A5 and A10) or only had some limited recognition of manual workers (A6).

Central to the management of employees in this sector is the history of cyclical movements in employment - mass redundancies and plant closures and later rapid expansion of recruitment. The effect was that virtually all employees had either direct experience of redundancy or had 'survived' previous redundancy processes. All of the companies had undertaken redundancies during the first half of the 1990s, ranging from around 100 in one company to several thousands in the larger workplaces. The result was an industry with a workforce which had very low morale, suffered from continued insecurity despite the subsequent expansion, and had difficult relations between management and employees, particularly manual workers.

> They still feel insecure, we had redundancies last year and there are more on going as we are looking to outsource… It has an impact on every aspect of employment. There has been a break of the old 'psychological contract', we have reneged on the deal. They feel embittered, betrayed, trapped, they are unhappy with their employer. (HR manager, A7)

Alongside these problems was a general concern about the shortage of engineers and the difficulties in providing a career structure and managing within delayered organisations.

Against such a background of widespread job insecurity, it is perhaps not unsurprising that none of the companies had attempted to systematically implement HIWS. Table 3 shows that a number of companies had different elements of what could be called HIWS, but only two companies (A1 and A10) had made wide ranging changes to the way they managed their employees. Originating from a top down senior management commitment to improve performance, A1 had been early adopters of business process reengineering and cellular manufacturing. Following massive redundancies and the need to consolidate and reduce costs, they had introduced changes in working practices, developed a more cooperative relationship with trade unions and introduced many of the elements of HIWS. Managers claimed that these changes worked and improved productivity and performance, although it is difficult to isolate these factors from the effects of rationalisation and cost cutting processes, alongside the subsequent upturn in the industry. There are also questions raised as to

whether such changes in work practices actually led to a more committed workforce. As the employee development manager explained:

> There is a degree of nervousness - but more among the older workforce. Younger people have a more flexible approach to employers - they feel that there is not necessarily a job for life. This also means that they have less nervousness about moving somewhere else.

These new methods of managing employees were also being focused on an ever-declining core group of employees as the company increased the amount of subcontracting and outsourcing. Furthermore, the company has recently announced large-scale redundancies. and the closure of one UK plant, indicating that if elements of HIWS have been successful, it has been at the expense of employment.

Table 3: Extent of HIWS at workplace level in aerospace companies

	Job Security	Team Working	Consultation	Appraisal	Training & Development	Team Briefings	Quality Circles
A1	3	1	1	2	1	1	1
A2	3	3	1	2	1	3	3
A3	3	1	1	3	1	3	3
A4	3	1	1	1	1	2	3
A5	3	3	2	1	1	3	3
A6	2	3	1	3	2	3	3
A7	3	3	2	3	1	3	3
A8	3	3	1	3	2	2	3
A9	3	3	1	3	2	3	3
A10	3	2	1	2	1	1	3
A11	3	2	1	2	2	2	3

Key: Evaluation of use of HIWS type practices based on interviews and documentation

1 widespread use
2 patchy or being developed
3 limited or non-existent

At A10 systematic and widespread changes were made to HR policies following the company being taken-over, redundancies and union derecognition. With an explicit policy of union substitution, the company introduced single status

employment, an employee council, team briefings, employee conferences, a training and development strategy and gained Investors in People recognition. The aim was 'to achieve competitive advantage through the people we employ… encourage a high contribution and commitment to the business from all the people who work in it.' Having undertaken further interviews in this company, it was clear that the rhetoric was far from the reality. There was an overall appreciation by employees of team briefings and obtaining more information about company performance but there was a general criticism about the way that changes were introduced. Team working, for example, was brought into the assembly area without consultation leading to an unofficial overtime ban lasting several months. Other initiatives, such as continuous improvement were hindered by the failure of management to implement recommendations and the lack of communication both with workers and lower levels of management.

> When [the new company] took over we thought it would be a radical change in management. Basically it has gone down hill since then. The attitude towards the workforce is terrible…(shopfloor worker)

> I do believe more is needed for line managers to be more aware of decisions and why they are being made. You do as you're told. I should be more respected and understand why a decision is being made… It is just instruction. There is an awful lot of that, you try to be positive, then it is why should I bother, I won't offer it and I won't get involved. (first line manager)

Across the other companies, quality circles, team briefings and appraisal systems were limited, as was semi-autonomous team working. The new HR manager at A4 had introduced some key elements of HIWS, as a result of the implementation of cellular manufacturing and an accompanying overhaul of the HR strategy. However, these changes had only just been introduced and it was too early to assess whether they were effective in involving employees and providing them with systematic training and development.

Training was one area which appeared to be relatively well-resourced, with most companies having apprenticeship schemes, graduate training schemes, some with their own training schools and a number gaining or aiming for Investor in People recognition. However, training was very cyclical and job-related and many companies had stopped apprenticeships during the recession and had closed training schools. Common responses from smaller companies were that 'it was too costly to

train' (during downturns) and with the boom in the industry 'there was not enough time'. Training was largely for initial entry, i.e. at apprentice, technician or graduate-level, while continuous training and managerial development were more limited. The lack of skills among managers was identified as a major problem in virtually all the companies, as one personnel manager admitted, they had just started to train managers, 'it probably didn't really happen at all before'. Others commented on the difficulty of turning technical specialists into managers.

> Our managers are really interested in producing things, they are not very good at secondary issues, like developing people… (Head of Personnel, A11).

Most companies were only introducing ad hoc or piecemeal changes which often lacked resources or managerial commitment to be successfully implemented. At company A11 a step change programme involving continuous improvement and user groups involving company employees was proposed. The obstacle, the personnel manager argued, was the trade unions who wanted a 'no compulsory redundancy' clause and a joint union-management group to look at the causes and solutions to the low morale of the workforce. Although a group was established, they only met a couple of times and managers found that other issues were more of a priority, although continuing to complain about the failure of employees and unions to be involved in their initiatives.

The strong role played by trade unions in a number of companies had led to management being reluctant to use individual employee involvement or communication initiatives. Trade unions were resistant to losing their role as the principle channel of communication between employees and management. One managing director reported that his managers had little direct communication with the shopfloor and were instead working on improving the relationship with trade unions.

> When I came here [1993], it was very adversarial, a very hard style of management - thuggish . We have been on various journeys and worked on changing that relationship. I am not a soft touch but I can't afford to fight… we can communicate directly with the shopfloor but it would destroy the relationship we have worked hard to get. (managing director, A3)

Overall there had been little systematic attempt to introduce HIWS within the aerospace companies investigated. There was also little evidence that employees felt committed to their companies, largely because of the lack of commitment shown by

companies to their workforce. Although turnover, particularly of manual workers, was relatively low, responses of employees to managerial initiatives were often negative. Many of the managers complained about the lack of flexibility of craft workers and resistance to change, while at the same time acknowledging that communications were poor and that jobs could not be guaranteed.

Pharmaceuticals

In contrast to the aerospace companies, the eleven pharmaceutical companies were generally much larger and most were non-UK owned (Table 1). A further difference was the influence of mergers. Four out of the eleven companies (P3, P4, P5, P10) had been through large-scale mergers or acquisitions in the five years prior to the research, involving plant closures and redundancies. A further two (both UK-owned) were concerned about being targets for acquisition (this has since happened to both companies) and the likely threat of job losses this would entail. All companies were producing predominantly prescription drugs, mainly patented but also branded medicines. All had research and development facilities of some kind in the UK, although these were limited at P2, a company relying on existing products and buying branded goods from other pharmaceutical companies. P3 had a small UK research centre which was being closed as a result of merger and rationalisation

Unsurprisingly, most of the managers interviewed felt their competitive advantage lay in research and development (r&d) (Table 4). A couple cited the product area or therapeutic range and a few the sales process or relationship with customers. When discussing competitive pressures, there was an emphasis on the impact of changes in the regulatory environment which were felt to have placed more stringent conditions on new drugs entering the market and were further limiting prices and profit levels. Specifically for the UK, sales and marketing had become more complex, as the reorganisation of the NHS, a result of the 1990 reforms, had led to a proliferation in purchasers and more cost-conscious prescribers.

Despite the changes in the market, pressure on costs was far less severe than in the aerospace industry. Price reduction strategies were largely felt to be unnecessary with prices often being restricted by regulations rather than by competitors. Where products had close rivals, rather than reducing prices, sales and marketing departments tended to emphasise a product's quality and/or the company's reliability and reputation. The loss of patent generally meant a large decline in market share, as

generics replaced the original branded product. With fewer new drugs entering the market, many plants were left with production levels well below capacity. Alongside the increased cost of research and development, this resulted in a much more direct focus on cost reduction throughout the business than had traditionally been the case.

Table 4: Competition in the pharmaceutical companies

	Competitive advantage	Competitive Pressures
P1	culture, relationship with customers, product area	mergers & acquisitions, customer changes, regulation
P2	people, flexible workforce	profit pressure due to acquisition target, cost reduction, regulations
P3	product range, distribution	price pressure from generics
P4	research	Government regulations on prices, prescribing practice and new drugs
P5	r&d, sales and marketing, acquisitions	over-capacity - cost reduction
P6	discovery process, people, quality of service	regulations, cost effective, change to sales and marketing
P7	people, product development, environment	gaining skills, cost reduction
P8	discovery, marketing	costs, reliability, quality
P9	r&d	investing in r&d, research skills
P10	product pipeline, brand	government cuts in health, overcapacity - cost reduction
P11	r&d	regulatory pressure, price pressure

Note: Response of managers to i) what is the company's/division's main competitive advantage? ii) what are the key competitive pressures currently faced by the company/division?

For the pharmaceutical companies, HR policies tended to be more global and corporate than in aerospace, reflecting the single product market of the larger parent companies. Most were principally in pharmaceuticals, with only three parent companies undertaking significant other activities (pharmaceuticals accounted for 60% of sales at P7 and only 20% at P11 and P4). All companies had relatively well-developed HR functions at the UK or plant level. The US companies were generally more centralised, while the European-owned (with the exception of P7) were more decentralised. Part of the lack of central policies may be a reflection of the number of mergers which had taken place, leaving little time for the development of overarching corporate policies.

Of the eleven companies, eight recognised unions in at least one plant for at least one group of employees. Four companies had either undertaken total

derecognition of all relevant unions or selective derecognition over the last few years, particularly of white-collar grades such as scientific and technical workers. This had left a stark contrast between UK and European-owned companies who generally recognised unions and US who did not or did so only to a limited degree. However, even amongst the companies who recognised unions, there was no evidence of a prominent role for unions. As a human resources manager (P5), which still recognised all unions, said:

> We don't have an overly hostile policy. We recognise there are trade unions and we do not derecognise but we have moved to individualise the relationship... It is a recognition that we would rather be in an individual relationship with all staff but where we've got them we will work with them.

Unions were not considered by either management or union officials to be very strong and were largely seen as marginal to policy developments. Overall the unions seemed to exercise much less influence in pharmaceuticals than in the aerospace sector.

In contrast to the aerospace companies, there was also a greater variety in the extent to which there was some sort of security of employment. Virtually all of the companies had historically offered very secure employment.

> The philosophy was that if you work for P4 you have a job for life in any division. (HR manager P4).

> One of the reasons I moved up here was that it was a job for life, provided that you could stick the boredom, that all went out the window. (operator, P10)

With the mergers and rationalisation taking place, four companies had undertaken redundancies, with an on-going threat of closure or further job reductions (P3, P4, P5, P10). In another two companies, employees were concerned about take-over (P2 and P6). The HR manager at P5 explained how things had changed:

> P5 has been a very cosy pharmaceutical company, the business has been seen as a licence to print money… there's been slack management.

With 75% of drugs coming off patent in 2000, 'there's a lot of generic companies coming into the market so aggressively'. Alongside the recent merger this 'has led to a view there's no such thing as a job for life.' In contrast P1, P8, P9 and P11 were very confident about the job security they could offer employees. The manager at P9 explained that employment was quite stable and secure and this had a positive impact

on employees: 'success brings motivations, we're doing well and it's noticeable that the place buzzes all the time.'

Table 5 provides some assessment of the extent to which companies had elements of a HIWS. There appears to have been no systematic attempt to introduce HIWS but a number of different practices had been introduced. In some companies (eg. P3 and P7) there was the rhetoric of wanting a 'high performance culture', but as one manager admitted, 'we haven't decided what that means yet'. Many elements were simply seen as traditional good practice HR, rather than part of any new drive to HIWS. A number of managers described their companies as hierarchical, controlling and insular, suggesting that a significant leap would need to be made to move to employee involvement and self-managed teams.

Table 5: Extent of HIWS at workplace level in pharmaceutical companies

	Job Security	Team Working	Consultation	Appraisal	Training & Development	Team Briefings	Quality Circles
P1	1	1	1	3	2	1	3
P2	2	2	2	3	1	1	3
P3	3	3	3	3	2	1	3
P4	3	3	2	3	2	3	3
P5	3	2	2	3	2	1	2
P6	1	3	1	3	2	1	3
P7	2	3	2	2	2	1	3
P8	1	1	2	1	2	1	3
P9	1	2	3	2	1	1	3
P10	3	3	1	2	2	1	3
P11	1	1	3	1	1	1	2

Key: Evaluation of use of HIWS type practices based on interviews and documentation

1 widespread use
2 patchy or being developed
3 limited or non-existent

Most common of the HIWS practices were team briefings followed by consultation with employee representatives. However, regular consultation at workplace level only took place where the company recognised trade unions. The three companies who did not recognise unions had no processes established to consult

with staff on a regular basis. Other forms of communication, such as team briefings and company newsletters were much more apparent than in the aerospace industry. Despite the use of such practices, most of the managers stated that they had problems communicating with their workforce (P1, P2, P7, P9, P10, P11).

Semi-autonomous team working for production workers was being experimented with in a couple of companies. P1 had introduced self-directed work teams for production workers at its only unionised plant. This was a result of the need to reduce costs and improve the poor state of industrial relations. The director of personnel explained that this process had been long and slow, as they went through three years of 'structural and emotional change'. A number of managerial layers were taken out, teams were introduced, along with extensive individual training, undertaken with the involvement of trade unions. Production had increased by 40%, with 30% fewer people. The main problem the HR director claimed, was management who 'did not want to change', and were also the only ones who were made (voluntarily) redundant.

At P11 they had also been experimenting with new forms of work organisation which had been found to be successful in other areas of the company. In manufacturing, they had taken a small area of production and tried to develop self-directed, high performance work teams. The shopfloor operators became involved in scheduling materials, deciding on the best way to produce the product and the hours required. The role of supervisors was changed into 'more facilitators, coaches and encourages of activity'. Training was focused on them, while a good record on job security made management assurances about no redundancies more believable. Associated with the work teams was a 'high performance training system', which was developed in association with the HR development manager. The changes required considerable investment in training and also a revision of recruitment practices to improve the quality of applicants. The introduction of high performance work teams was felt to be a success, although the plant manager argued that the trial had been in an area of manufacturing where numbers were small and operations less complex. 'It's a challenge to take teams into a more complex manufacturing module, where there are larger numbers of people and far more manufacturing processes and products.'

These two examples were exceptions rather than representative but also show that these type of initiatives require considerable levels of investment and take time to

show any results. The research found that one of the main problems for other initiatives was the failure to effectively involve or consult employees or their representatives. In most organisations, trade unions were relatively weak or non-existent and management were often unwilling or unable to manage effectively the change process. Additionally lack of trust and low morale, a result of job insecurity, meant that employees in a number of companies were reluctant to engage with management initiatives.

> We found that nothing would help more than period of stability and security. (head of personnel, P3)

Regulatory requirements ensured a certain level of training for production operatives in areas such as quality awareness and health and safety but a number of companies were not giving priority to training and development as a whole. Many preferred to buy in the required technical skills or rely on informal or ad hoc training. The human resources director at P7 explained that training was an area of huge need and there had been no proper systems or processes. He had introduced a training and development manager and had recently begun to address these issues. Other managers were concerned about the lack of skills in the area of people management.

Reflecting a similar issue found in aerospace, a major problem was encouraging researchers or functional specialists to take seriously the role of manager. Many of the HR managers' main concern was about middle managers which could also include these functional specialists (e.g. P1, P2, P3, P5, P7, P8 and P10). The delayering taking place in most organisations meant that there were no longer clear career ladders and that it was difficult to move from the shopfloor to supervisory and then managerial positions. This often led to specialists from other departments, such as quality control or development, being moved into line management positions on the shopfloor. In one plant (P10) initiatives to improve performance were being hampered by the lack of skills held by first line managers (called supervisors).

> Supervisors' level of skill is poor, the level of training is poor, the level we've trusted them is poor. Getting them involved in change is difficult… One big problem is incestuousness. A lot [of managers] have seen nothing else but this site. It is difficult to get empowerment and involvement, they have had no experience of that and there is an unwillingness to look outside. They believe we are at the leading edge. (technical manager, P10)

Those plants with the most elements of HIWS were P1, P9, P8 and P11, although the use of practices such as semi-autonomous team working was very limited. These companies were all US-owned and had not been subject to recent major mergers and acquisitions affecting the UK workforce. They have relatively centralised management structures and it could be that such stability, plus practices diffused from the US, are important in explaining their introduction of new management practices and their ability to experiment over the longer-term.

Why diffusion has been so limited

The preceding sections have charted the limited use of HIWS in these two sectors. From the literature we would expect these organisations to be at the forefront of such initiatives as their business strategies are based on innovation and quality products. Why have we found only piecemeal adoption of specific practices rather than widespread change? Given the pressures that were on most of these companies to reduce costs, it is clear that there have been a number of alternative approaches being adopted, which offer returns at a much quicker rate than that proposed by the full-blown HIWS model.

First, in both sectors, it was clear that cost savings were being made by reducing the terms and conditions of 'non-core' workers. Catering, cleaning and security, previously provided by pharmaceutical and aerospace employees, are now contracted out to other organisations. In aerospace this included the outsourcing of less complex parts of the production process, shifting employment to smaller firms where employees received lower levels of pay and benefits than in a large unionised aerospace company. The HR manager, for example, at A7 claimed they had too many overheads - accounts, canteens, personnel - in comparison with US competitors, 'they are not value-added people and they are going to be cut… we need to be lean and mean…' In addition, the use of temporary workers was widespread, partly to reduce costs and to meet changes in demand but also to avoid the use of redundancies. Although this was claimed to protect the core workforce, it generally had a negative impact on workforce morale and on the local reputation of companies.

Second, new technology could be used to reduce the number of employees and their skill levels. Managers at four different aerospace companies specifically mentioned that they felt skills would actually be reduced as the result of new

technology. With the move to jigless assembly, one manager argued that there would be no more need for tool makers.

> One option - which I have been uneasy with - is that a range of jobs done by our 600 skilled people do not require that level of skill. We could dilute the jobs and put in semi-skilled and train them for tasks. (Administrative director, A9)

A11 had already begun this process with the new composite materials, which are cooked rather than welded and bolted, as a personnel director argued:

> we don't need a skilled fitter to do that. The unions see it as down-skilling. It is changing skill mix to take account of the change in work.

In one plant they had recruited women to fill semi-skilled positions in a job which had previously been undertaken by male craftworkers. Given the costs and length of time involved in training apprenticed craft workers and for a group considered to be inflexible, deskilling provided a solution to a number of problems. A further development which was becoming very popular was the use of lean manufacturing as a way of standardising the work process and operations, ensuring faster throughput and the opportunity to rethink the production process and the required skills.

Third, for many companies the provision of relatively high pay and benefits, rather than policies of employee involvement and participation, was viewed as a central mechanism for recruiting, motivating and retaining employees. For professional engineers, career prospects, pay, working on new projects and broad job experiences were seen as the type of inducements required to keep them interested. In pharmaceutical companies, similar approaches were taken for research and development staff, while complex performance related pay systems were directed at the salesforces. For other employees paying above the market rate, overtime and shift payments, alongside fringe benefits, were seen as the key elements to managing employees.

Fourth, mergers and acquisitions are a central competitive strategy in pharmaceuticals and increasingly so in aerospace, aimed at taking over competitors, buying in new products, increasing economies of scale and gaining access to new markets. Savings in pharmaceuticals were predominantly taking place through closures and rationalisations and, for example, through realigning the research process. Concentrating on specific therapeutic areas, being 'commercially rather than research-driven' and no longer undertaking 'blue sky' research were examples cited.

At P5, having taken over another company, an HR director claimed, 'we were quite unabashed in reducing [the acquired company's] terms and conditions'. 7000 jobs were to be lost worldwide and a number of manufacturing plants would be closed as many plants were working at only 30-40% capacity.

The impact for the workforce in the UK will depend on where MNCs decide to reduce or close plants, headquarters and research centres. Two managers (P3, P4) argued that the closure of UK plants in their companies was not about efficiency.

> The decision will be based on politics. Our cost and quality is excellent… we cannot do much more. (head of personnel, P3)

Similarly, P10's parent company has recently merged with another large European pharmaceutical company and it has been reported that various commitments were being made to avoid job losses in the two host countries. There appeared to be no guarantees concerning the future of UK plants. The survival of particular plants in the UK are, therefore, likely to depend on a variety of factors of which lower costs or HIWS are only two.

It is not just that there are other ways of improving competitiveness, there are also a number of factors which makes HIWS unattractive. One of the main issues is the important question of job security and the need for trust in order for these types of policies to operate (see Pils and MacDuffie 1996). A key feature of the aerospace industry is the endemic job insecurity which has produced an environment where trust and commitment amongst production workers has been extremely limited. Similarly in pharmaceuticals many companies are currently in the process of merger or take-over, leading to redundancy and job insecurity. It is difficult to see how policies designed to improve employee commitment and motivation can be effective when employees have a justifiable fear for their own jobs (see Heery and Salmon 2000 for a discussion).

Security alone, however, does not necessarily lead to the development of HIWS. Many pharmaceutical companies over a number of years have had stability yet this has not led to innovative new practices. In one sense this raises a very real paradox. With stability and lack of competitive pressures to cut costs, there is little incentive to change work processes that have always 'produced the goods'. Complacency, insularity and the ability to hire new employees because of offering a 'good package', alongside a limited union voice or power, provides little encouragement to seek new ways of working. In contrast changes in the competitive

environment and the need to cut costs and rationalise have placed short-term efficiency gains as the central imperative, thereby limiting the prospect of any manager implementing HR policies which can only produce longer-term results. It is not surprising that in this context, new technology or the rationalisation of production may be seen as offering greater returns within a shorter time frame.

To provide incentives for developing new approaches, there is little prospect that demands from trade unions will encourage partnership. With weak unions in pharmaceuticals and poor existing relations in aerospace, the evidence suggests that management have been more interested in marginalisation than in partnership. Without the active involvement of unions, any moves to adopt these types of practices may face resistance from employees and unions. The literature often implies that these changes offer benefits for employees, yet many of the HIWS practices are very individualistic in orientation and can be directly or indirectly a mechanism for union marginalisation. Individual appraisal, merit pay, team briefing, quality circles and team working plus individual forms of employee involvement can operate in competition with union forms of communication and representation. These approaches may be used to support a partnership type approach as part of a non-union agenda (Bacon and Storey 2000), which reflects the more Anglo-Saxon version of HIWS described earlier. The alternative socio-technical system, which involves active commitment and broader decision making and job roles, is unlikely to be developed without union participation (see also Ferner and Hyman 1998). As a result, employees may feel (and justifiably so) that they have little to gain from such changes in work practices.

A further important issue from the research was the lack of managerial skills in these companies. The resourcing and training and development of managers, particularly middle and line managers, are essential if these policies are to be successful. There was, however, little evidence that most line and middle managers were able to effectively deal with the employee involvement initiatives which were being introduced. The emphasis on short-term results has driven a particular pattern of behaviour which limits the amount to which they have access to training and development but also on their ability and resources to manage their own employees. Within two sectors with large numbers of functional specialists, engineers and research scientists, many were reluctant to take on managerial roles. The result was dissatisfaction with the job and a failure to undertake managerial responsibilities

effectively. If large companies such as these have problems undertaking managerial training and development, then the difficulties facing small- and medium-sized firms are likely to be immense (see Bosworth 1999).

A combination of factors can, therefore, help explain why these companies had not introduced HIWS. Some of these issues relate to what Pils and MacDuffie (1996) identify as the lack of short-term benefits from major changes in methods of working. Others arise from the existence of alternative competitive models which, even with high quality, skilled workforce, have been effective in the short- and medium-term.

Conclusion

Policy makers in the UK are emphasising modern employment practices as the one way to compete in the new knowledge economy. This involves encouraging firms to adopt partnership models with trade unions and/or employees and the use of HIWS. This paper has addressed how far this is the case for a group of companies operating in arguably the most successful areas of British manufacturing. The evidence does not provide much optimism as it would appear that in the short term there are unlikely to be major advancements in HIWS. In a similar way to the US (Brown and Reich 1997) the lack of a supportive institutional framework in the UK may be limiting the use of such managerial practices. The main features are the lack of institutionalised workers' voice, job insecurity and short-term financial constraints.

This research also shows that there are much bigger issues than specific HR practices in explaining the competitiveness of these two sectors. The pre-eminence given to HR practices fails to give enough consideration to other determinants of company success (see also Purcell 1999) and to the nature of both internal and external constraints. Mergers and acquisitions, economies of scales, relationships with government and politics, levels of investment and research and development are major determinants of competitive success. MNCs are key players in the pharmaceutical industry and the rationalisation process, which plant to close and where to locate new products, is based on a much broader range of factors, than plant efficiency. The UK's laissez-faire attitude to MNC relocation decisions, alongside limited employment regulations, makes it easier for MNCs to delocate. We may be seeing what Ferner (1998) describes as 'reverse delocation' from the UK, partly as a result of lower costs in closing UK plants and investment in other European countries

being ‘locked in’ through more regulations. Additionally the local political climate may make it less likely that UK managers fight as hard for the survival of UK plants (see Lloyd 1999).

In aerospace, the UK’s recent success may be more to do with its supplier base being less fragmented than in France and Germany and because of its close ties to the US market, where it has clear advantages over other European producers (SBAC:1998). Lower labour costs and the ability to match labour to production through hire and fire policies, alongside widespread subcontracting, help keep prices low. Whether these types of approaches can guarantee productivity increases in the long-run is questionable. For first tier suppliers, competitive advantage is principally a result of technological superiority, which may be threatened by the UK’s lower levels of investment in research and development.

It is, therefore, essential to view the workplace within its broader context, which must include the wider corporation, the nature of the product market, the dynamics of competition within the sector, alongside the power relations and interest groups operating within the firm. Policy makers cannot expect companies to simply introduce modern employee relations practices and partnership because the evidence shows and the government argues that it is beneficial. This assumes a high element of strategic choice available to managers and an ability to plan and take decisions over the long-term. Any policy on HIWS has to recognise the realities of British workplaces and must address issues of investment, research and development and other areas of industrial policy, which threaten to undermine those companies operating at the high-value end of the market.

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