

**Human resource management and business objectives and strategies in small
and medium sized business**

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Abstract

There is growing evidence of the importance of co-operation between managers and workers for improving industrial performance. One manifestation of this is the growing use of human resource management (HRM) strategies to increase the involvement of employees. The survey of small and medium sized businesses revealed that a substantial majority of small and medium sized firms used HRM methods and many more than one. The employment of HRM was positively associated with a commitment to non-price competition, longer term business objectives, the intensity of training, innovation, external collaboration and partnerships and the use and effectiveness of externally provided business services and advice. Whilst no causal relation can be necessarily implied from these statistical associations, it is instructive that a significant larger proportion of firms that used HRM practices, particularly in combination and together with training, innovation and external partnership and collaboration, traded in the more fiercely competitive overseas markets and were growing.

JEL Codes: J5, L1, L2

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1. Introduction

It has been increasingly recognised that co-operation is important for competitive performance. At the technical level this is obvious: relations within and between the units of production are technically interdependent and therefore need to be co-operative for operational efficiency. The sharing of information is also a necessary co-operative activity. This is important in a technical sense to ensure that all participants are equally well informed about the best means of production, and that components are designed and produced in such a way as best to fulfil their productive purpose. Success in production will also depend on access to information on the latest products, processes and forms of organisation. Here, co-operation pays off because of the problem solving benefits of working together, and because the sharing of information increases the pace of diffusion and development of new processes and products and hence the pace of technical progress. In this technical sense, therefore, business performance is importantly determined by the effectiveness of management in securing co-operation from its workforce, suppliers and customers (Wilkinson, 1997).

However, securing necessary technical co-operation has traditionally not been made easy by the often adversarial and low-trust relationships within and between firms. Within firms, low-trust relationships resulted from the imposition of formal rules and close supervision on workers, the managerial co-ordination of workers' tasks, the use to technological and managerial constraints for determining the pace and quality of work and the use of punishment, more rules and tighter supervision if standards were not met. Within this alienating and antagonistic environment industrial relations became premised on a 'behavioural acceptance of divergent purpose' (Fox, 1974, p.29) with workers and management having different ends or values, requiring a precisely balanced exchange in the short term, carefully estimating the costs and

benefits of concessions, restricting information in their own interests, limiting mutual dependence and readily imposing sanctions against ill-will or default on obligations (ibid, p 362). Similarly, inter-firm relations in Britain have been typified as “adversarial dealings between short-horizon contractors, each party seeking out its immediate advantage”; market individualism which has traditionally driven English law of contract (Brownsword, 1997, p.255).

Such adversarial systems proved ill-suited to the *new competition* based on high quality, prompt delivery, improved design, greater variety, and rapid product and process innovation (Best, 1992). This came especially from Japan, Germany, Italy and Sweden, and increasingly from more enlightened American firms, where employers had been more successful in securing the trust, commitment and co-operation of their workers, suppliers and customers. The results have been high levels of operational and dynamic efficiency encouraged by the mobilisation of the skills and knowledge of workers and suppliers in the interests of product, process and the organisational improvement and innovation (Howes, 1991).

Such high levels of competitive performance rest on the ability to build relationships closer to what Fox described as high-trust. The requirements of these include: mutual commitment to the joint productive effort; the recognition of the inappropriateness of close supervision; a co-operative relationship between related work areas rather than standardised, externally imposed co-ordination; the taking for granted that loyalty, support and goodwill are essential for the exercise of high discretion; and the recognition that dispute resolution is a question of problem solving rather than sanctions. Traditionally, in Britain high-trust employment relations tended to be confined to a narrow range of high level managerial and professional jobs, although those of certain craft workers, technicians, clerical workers, lower professionals and supervisory and administrative staff included high-trust elements. The success of the emerging competitively successful productive systems was to extend high-trust relations to include the whole workforce as well as customers and suppliers.

In response to this competitive challenge more British firms have resorted to measures designed to increase the range of tasks individual workers perform, raise their skills, and increase their involvement by making them more responsible for quality control, co-ordination and management (Cully et. al., 1999, especially Chapter 4.) These strategies are broadly defined as *human resource management* (HRM). The development of HRM drew on industrial psychology theories of motivation, behavioural theories of job enlargement and enrichment, and organisational behaviour theories of better communication and employee involvement. The idea is that firms will reap the rewards of greater worker motivation and improved job performance by increasing job satisfaction, enlarging and enriching jobs, providing more challenges and opportunities, developing new skills and engaging workers' interests by designing wage systems that recognise individual contribution and reward employees accordingly (Applebaun and Batt, 1997).

HRM has been defined 'as a set of policies designed to maximise organisational integration, employee commitment, flexibility and the quality of work' (Guest, 1987), and *hard* and *soft* versions have been identified:

"Thus the 'soft' version is seen as a method of releasing untapped reserves of 'human resourcefulness' by increasing employee commitment, participation and involvement. The central thrust of the 'hard' version of HRM, on the other hand, is as a method of maximising the economic return from the labour resource by integrating HRM into business strategy" (Blyton and Turnbull, 1992, p.4).

Quality circles and other forms of worker involvement provide examples of *soft* HRM. Such practices bring together workers and managers to discuss production problems with the intention of securing employee commitment, and to draw upon their accumulated skill and knowledge to improve quality and save costs. Total quality

management (TQM) involves more *hard* HRM. It has a broader engineering base and is strongly oriented towards meeting consumer requirements by greater production flexibility and continuous improvement. TQM usually incorporates quality circles and other such *soft* HRM practices into a more integrated business approach (Appelbaum and Batt, 1994). Competitiveness is enhanced by more effectively meeting consumer demands and cutting costs by reducing product defect rates, wastage and customer complaints, savings in inventory costs by just-in-time production and delivery, and shortening of design to market lags. A pre-requisite for the success of this internal re-organisation is close liaison with suppliers to secure the necessary quality and production scheduling response and to solicit their co-operation in product innovation, and close contact with customers to improve feedback into product and marketing developments. Key objectives are continuous improvement in quality and performance, and this requires worker involvement by such means as quality circles, just-in-time inventory systems, and statistical process control to iron out variation in quality, create consistency in meeting standards, locate inventory savings and eliminate waste.

As the purpose is to develop a pre-emptive rather than a re-active approach to quality control and process development, the requirement is to locate accountability for quality and operation at the shop floor. There, production teams share the responsibility for continuously seeking out and solving problems in the production process. In this, the emphasis is on treating work as a system rather than a set of individual tasks, the decision making autonomy of workers and of the mutuality of interests between employers and employees. "TQM, then, has been characterised as a form of organisation in which the employees can be trusted and empowered to take on more responsibility in a context of HRM practices which ensure a homogeneity of values" (Sewell and Wilkinson, 1992). Such *empowerment* requires the necessary resources, and particularly, effective training and personnel policies. Therefore, high performance firms tend to be more selective in hiring, and to invest more substantially in training in quality, group process, and job skills than

conventionally managed companies, and are more likely to relate pay to performance (Applebaum and Batt, 1994).

There is now an extensive debate on HRM: what it means, what its effects are, how extensive its introduction has been, how successful it is, whether it really constitutes a fundamental departure in employment practices, what it means for industrial relations, and so on.¹ There is also a considerable body of literature suggesting a positive link between the use of HRM practices and productivity, particularly when such methods as flexible work assignments, work teams, skill training, effective communications, and incentive pay schemes are used in combination (Ichniowski et al, 1997). What Cully et. al. describe as high commitment management has also been shown to be positively associated with R&D expenditure and innovation. (Michie and Sheehan, 1999). And, Cosh, Hughes and Weeks (1999) found that the growth of training only had a significant impact on business performance, measured by employment growth, when associated with HRM practices.

These studies raise important questions of how forms of work organisation and industrial relations practice relate to other business strategies and to business objectives and performance; but detailed studies of how are lacking. There is also little information about HRM methods in small and medium sized firms, beyond the fact they are less extensively used than in larger businesses (Cully et. al., 1999). An opportunity for a broader based analysis targeted at smaller companies was provided by the insertion of questions about HRM practices in the 1997 CBR survey of 2520 small and medium sized, independent, manufacturing and business service firms². This paper uses this information to explore the associations between HRM, the pressures SMEs are under, and other aspects of their business activities. The second section of this paper reports on the use of HRM practices in SMEs; the third relates HRM practices to what firms see as the source of their competitive advantage, their business objectives and the constraints under which they operate; the fourth maps the associations between the use of HRM and a range of business

strategies, including training, innovation, external collaboration and the use of external advice and service; the fifth section explores the multiple use of different types of HRM practices and other strategies, and the final section uses the revealed associations to present in stylised form a firm-centred, high performance productive system (Wilkinson, 1984), and links this to competences and other theories of the firm.

2. Use of human resource management methods in small and medium sized enterprises

The employment of HRM by SMEs was explored by asking the firms whether they used total quality management, quality circles, job rotation/multi-skilling and performance related pay to improve their competitiveness. This revealed that 35% of the respondents used job rotation/multi-skilling, 31.9% used performance related pay, 29.6% used total quality management and 13.1% used quality circles. Further investigation revealed 5% of the firms used only quality circles and 8% used them in conjunction with total quality management. It was therefore decided to construct a composite variable, labelled *quality management*, which includes: the use of quality circles alone (5.2% of firms), the use of total quality management alone (21.5% of firms) and use of both together (8.0% of firms). Quality management, as defined here, was used by 34.7% firms of the firms. The pattern of usage of HRM methods among different categories of firms is shown in Table 1, and reveals that HRM practice increased with the size of firms and was more frequent amongst growing and innovating firms. Moreover, the use of HRM had been increasing. Between 1994 and 1997 around 60% of the firms practising quality management had increased its use, as had 50% of users of performance related pay and job rotation and multi-skilling. Larger firms, growing firms and firms that innovated took the lead in increasing the use of HRM (Kitson and Wilkinson, 1998, Table 2.9).

3. Human resource strategies, sources of competitive advantage, business objectives and constraints

In increasingly buyers' markets customers have become more demanding in terms of price, quality, design, variety and promptness of delivery. These pressures are reflected in Table 3, which shows the ranking given by SMEs to factors which they see as giving them competitive advantage. Personal attention to clients' needs, product quality, established reputation and specialist expertise or products were ranked highest, and speed of service, range of expertise or products, product design and flair and creativity were also given prominence. Relative to these non-price dimensions of competitiveness, cost advantage and price are seen as giving less advantage, as is, perhaps more surprisingly, marketing and promotion skills.

It is perhaps not surprising to find from Table 2 that firms which had adopted quality management, and strategies designed to build continuous quality control and improvement into production processes and service provision, give higher rankings than firms which do not to non-price factors which give competitive advantage. However, they also give more weight to cost advantage, although not to price. These differences are generally small but are statistically significant at at least the 10% level. The greatest difference between users and non-users of quality management is for speed of service, design and marketing, and promotion skills. When compared with quality management, the differences between the users and non-users of job rotation and multi-skilling in the ratings of the various possible sources of competitive advantage are smaller, and fewer are statistically significant. Nevertheless, the differences that exist reflect the greater priority given to non-price competitive strategies. This tendency can also be detected amongst the firms which link pay to performance. Here the only significant positive difference between users and non-users is for design, flair and creativity, and marketing and promotion skills. However, unlike the employers of other HRM strategies, the ranking they give to price and cost advantage is

significantly less than that given by the firms which do not relate pay to performance.

Lying behind their drive to secure competitive advantage lies the growth and business objectives of firms. Overall, around 81% of the SMEs surveyed by the CBR intended to grow (58% moderately and 23% substantially) while 17% wanted to remain the same size (Keeble, 1998). Table 3 differentiates between the firms with different growth objectives on the basis of their use or non-use of the different types of HRM methods. This reveals that, compared with non-users, HRM firms tended to be more ambitious. Around a third fewer of the HRM users wanted to stay the same size or decline, while around a third more wanted to grow considerably. Although similar proportions of the users of the different types of HRM growth objectives, a higher proportion of those using performance related pay wanted to grow substantially.

Significant differences are also observable in the importance HRM users give to a range of business objectives shown in Table 4. Systematically, firms using HRM gave significantly more importance to each of the business objectives than non-users. But this difference was greater for particular objectives, and for the users of quality management. The difference was small for profit margins on sales and growth in sales. However, firms employing quality management rated market shares in the UK and overseas, and growth in exports, more than 20% higher than did non-users, and profit rates on assets and growth in employment 15% higher. The differences between the users and non-users of job rotation and multi skilling and performance related pay were smaller, but nevertheless, they followed a similar pattern to quality management, and were statistically significant at the 5% level. Thus, HRM firms gave greater importance than non-HRM firms to the growth of, and profits on, sales, but even greater importance to business objectives which went beyond these immediate considerations and which incorporated foreign markets.

Broadly speaking, then, HRM users are more orientated towards growth and give greater importance to a wide range of business objectives than do non-HRM users, particularly those with a longer term perspective. But they also perceive themselves as facing greater limitations on meeting those objectives (see Table 5). Capital market (the availability and costs of finance) and product market (competition and the slow growth of demand) conditions are perceived by firms as important limitations on their ability to meet their business objectives. Skilled labour and marketing, sales and management skills were also important constraints whilst the acquisition, and difficulties in implementation, of technology, availability of suitable premises and access to overseas markets were less crucial. With the exceptions of the availability and cost of finance, for which there was little difference between the two, HRM firms rated the importance of limitations on business objectives higher than non-users. For many of these, the differences were small (less than 10%) but statistically significant at the 5% level. However, the rating of the limitations on meeting business objectives posed by management skills, skilled labour, difficulties in implementing new technology and access to overseas markets was 10% higher for HRM users than for non-users. The gap was especially wide with respect to management skills for firms using performance related pay.

The positive associations between the growth and related business objectives, and HRM, and between HRM and non-price competitive strategies, are not difficult to explain. Firms looking to grow, expand their market share and increase the rate of return on assets in highly competitive conditions, can be expected to adopt non-price competitive policies, and to support these by HRM strategies geared to: involving their employees more in reducing costs, improving quality and productive performance; increasing their skill and flexibility to make this possible; and linking their pay to performance to reward their effort. In this sense, product market and HRM strategies are complementary and pro-active means of securing the firms objectives in a hard competitive environment. But this does not explain the positive association between the use of HRM and the

importance of the limitations on firms' ability to pursue their growth and business objectives. One reason might be that HRM practices are a reaction to limitations faced by firms in the pursuit of their objectives. Alternatively, or additionally, the success of the pro-active use of HRM could press firms more closely against their external and internal constraints. And these pro-active and re-active motives for using HRM may interrelate as dynamic firms innovate, technically, socially and organisationally, to remove obstacles created by their own dynamism. But whatever the motive for using them, the strong suggestion is that HRM practices can be thought of as part of a clustering of complementary strategies, which can be pro-active and/or re-active, which firms target at their objectives and the constraints to them. These possibilities will be explored in the next section.

4. Human resource management, training, innovation, collaboration, and external advice and services

As might be expected, HRM-using firms dedicated a higher proportion of their total labour costs to formal training than did non-HRM-using firms. Table 6 shows that, compared with non-users, half as many firms practising quality management had no formal training, and twice as many spent more than 2% of their total labour costs on formal training³. The training differences were less dramatic between the users and non-users of job rotation, and multi skilling and performance related pay, nevertheless, many fewer of the users provided no formal training, and many more spent 2% or more of total labour costs on, formal training.

HRM-using firms were also more innovative (see Table 7). Three quarters or more of the users of each of the HRM practices innovated, around 20 percentage points more than the non-users, differences that were similar for both product and process innovation. As the most important reasons given by firms for innovating were extending product range, improving product quality and gaining market share (Cosh and Wood, 1998), the use of HRM can be seen as associated

with a broad business strategy designed to improve performance in increasingly demanding product markets. Another way of achieving these objectives is to network with other firms, and around a third of the SMEs surveyed had formal or informal collaborative or partnership arrangements with other organisations. These included suppliers, customers, firms in the same line of business and, less frequently, higher education institutions. The most important reasons given for collaborating were to expand the range of expertise (75% of the collaborators); to assist in the development of specialist services or services required by customers (70% of the collaborators); to provide access to UK markets (54% of collaborators); and to provide access to overseas firms (45% of the collaborators) (Kitson and Wilkinson, 1998). As is shown by Table 7, a significantly larger proportion of firms which used HRM practices also formed collaborative arrangements with other organisations.

The firms we surveyed also sought to improve their performance by drawing upon the services and advice of other firms, agencies and external consultants in ways outlined in Table 8. Again HRM firms were the most active. In percentage terms, the difference in the proportions of users and non-users of HRM seeking external advice and services was widest for staff recruitment, staff training and development, market research, marketing, business strategy, management organisation, and product and service design. This pattern is observable for each type of HRM practice, but is more pronounced for quality management and least for performance related pay.

Not only did the users of HRM make more use of services and advice from outside, but judging by the impact they reported that this external provision had on meeting business objectives, they made more effective use of them (see Table 9). The differences between users and non-users in rating the impact of external advice and services on meeting business objectives was most significant for quality management, and least for performance related pay.

5. The multiple use of HRM, innovation, exporting and the growth of employment

Ichniowski, et al, 1997 showed that HRM practices enhance performance when used in combinations. To explore this possibility the use of various combinations of HRM practices was related to innovation to explore whether more technically dynamic firms were also more innovative in the use of employment practices. The intensity of use of HRM was also related to exporting, as a measure of the intensity of competition firms faced, and to the growth of their employment. The results are shown in Table 10. For Table 10, firms have been classified by whether they were using none, one, any two or all three HRM methods. A separate category of *high performance firm* has also been created. To qualify for this category, a firm needed to: use quality management (whether or not in combination with other HRM practices), spend 2% or more of total labour costs on training, innovate, and have external collaboration and partnership arrangements.

Table 10 shows that firms using job rotation and multi-skilling only were more likely to innovate and less likely to export and grow than firms which only practiced quality management and performance related pay, whilst a relatively high proportion of the firms only using performance related pay were increasing employment. But the most striking feature of Table 10 is general tendency for the proportion of firms innovating, exporting and growing to increase with the widening of the range of HRM practices adopted. This is summarised in Table 11. Comparing firms using all three HRM methods with those using none: 80% more innovated, 124% more exported and 77% more increased employment.

The last two rows of Table 10 allows a comparison between firms using all the HRM practices and high performance firms. Innovation is one of the defining characteristics of high performance firms and this explains why 100% of firms in this category innovate. In terms of proportion of firms exporting and increasing employment, the two

types of firms were virtually identical. The importance of this finding is that it suggests that HRM, and particularly the more radical quality management, works in association with other strategies in influencing performance. We will return to this issue in the conclusions. But prior to that, we will consider the possible links between HRM practice and labour turnover, one measure that has been used as an indicator of the quality of industrial relations outcome of HRM (Guest, 1992)

The firms were asked “In the last year what, approximately, was your percentage labour turnover in each occupational group”, and they were asked to choose between the classes 0%, 1 –10%, 11- 30%, 31- 50% and over 50% labour turnover. The levels of labour turnover reported by the firms were generally low. The highest rates were for semi-skilled and unskilled manual workers, and the lowest rates for managers. For semi-skilled and unskilled manual workers 76% of firms had an annual labour turnover of between 0 and 10% and only 9% had labour turnover in excess of 30%; for managers these proportions were 94% and 3% (Kitson and Wilkinson, 1998). The indices in Table 12 summarise the rates of labour turnover for each category of worker, and by the firms’ use of HRM. To construct the indices the classes from 0% to over 50% used in the questionnaire were coded 0 to 4. These were then weighted by the number of observations in each class and divided by the sum of the weights. This gives an index of from 0 to 4. The lower the score the lower is rate of labour turnover.

There was little difference between the labour turnover of firms using only quality management or job rotation and multi skilling, and those not using HRM, except for lower turnover amongst technologists and higher professionals for the former. However, for firms using only performance related pay there was a higher rate of labour turnover in each occupational category except skilled labour. Again, compared with firms using no HRM, firms using two methods generally had higher rates of labour turnover, except in the higher and lower technical and professional categories where the rate of labour turnover was lower. This pattern repeats itself when firms using all three HRM

practices are compared with the non-HRM users, except in this case labour turnover was only lower for the technologists and higher professionals. Thus, the more intensive use of HRM is associated with an increase in labour turnover except in key technical and professional grades. This can possibly be explained by the faster rate of growth of HRM-using firms which have a higher proportion of short service workers, amongst whom voluntary labour turnover is generally high. This could explain why firms using only performance related pay, a high proportion of which were growing, had high rates of labour turnover (see Table 12). An alternative explanation is that innovation is saving labour, and the intensive use of HRM may also lead to job shedding, except in the higher skilled technical grades. It is also possible that both of these labour turnover effects are operating together as firms both restructure their workforce and grow. However, it cannot be ruled out that HRM had a direct effect on the rate of voluntary quitting, in line with what has been found in other studies (Beaumont and Hunter, 1992)

6. Productive systems, competences, social relations and competitive performance

The broad findings of the analysis of the use of quality management, job rotation and multi-skilling and performance related pay by small and medium sized businesses is that 39% employed none, 30% used one only, 23% used two and 9% used all three of these HRM practices. The employment of HRM, and especially that of the more broadly based quality management, was positively associated with a commitment to non-price competition, longer term business objectives, the importance of limitations on meeting those objectives, the intensity of training, innovation, external collaboration and partnerships, and the use and effectiveness of externally provided business services and advice. Whilst no causal relation can be implied from these statistical associations, it is instructive that a significantly larger proportion of firms that used HRM practices, particularly in combination and together with training, innovation and external partnership and collaboration, traded in the more fiercely competitive

overseas markets and were growing. This suggests a possible interaction between work related and non-work related strategies operating both inside and outside the firm in determining how businesses perform.

A stylised version of such a strategy clustering and how it may relate to the firm's environment and its performance is presented in Figure 1. In Figure 1 firms are shown pursuing their objectives subject to external opportunities and limitations. These stem from the markets for the firm's products and supplies; public and private sector provision of education and training, business advice and services; and the availability of technical marketing and other forms of knowledge and information. To improve their performance firms engage in partnership and collaboration, both outside and inside firm. The external network may include suppliers, customers, public and private sector research institutions, training organisations and business advice and service providers. Internal co-operation is pursued by means of HRM practices supported by training. Essentially, the internal and external spheres of collaboration and co-operation inter-relate in determining the technological, marketing and sales capabilities of the firm, and therefore how it performs. From this perspective, the determination of the firm's competitive success is systemic and importantly rests on its ability to construct the necessary internal and external framework for co-operation.

The firm's success or otherwise feeds back into its objectives, its external opportunities and limitations and its possibilities of maintaining the viability of its internal and external organisation. The ability of the firm to maintain and possibly build the trust and commitment of its internal and external co-operators will depend on its success in meeting its objectives and generating the resources and confidence in the future to meet their expectations. However, success may tighten the external constraints by, for example, increasing the firm's demand for additional finance and its need for extended markets. The downstream effects of this would increase the pressure on its production capabilities and supply networks, intensifying the

need for internal and external co-operation. And, in responding to these tensions the firm could be pro-active in attempting to shape its environment, by, for example, extending its external networks and building new markets, and/or re-active in accommodating pressure from its environment by retrenching.

These dynamic processes, which involve economic, social and organisational change, are captured by *competence* theories of the firm.⁴ Competences are what organisations ‘can do well’ and ‘core competencies’ what they can do ‘better than the others’ (Prahalad and Hamel, 1990). The constituent elements of organisations’ competences include the mastery of technologies and production, applicability and effectiveness of problem solving procedures, understanding of demand and users requirements include the ability to access, incorporate and use externally derived information and knowledge, and capabilities to learn and generate knowledge and information internally (Dosi and Malerba, 1997). Competences are the underlying determinants of competitive performance that extend along external networks and encompass employees within organisations. They are gained and reinforced by productive activity, by interaction within and between firms, and are enhanced by learning by doing (Rumelt, 1994).

The basis of competences is the shared knowledge organisations hold, which is embodied in the routines and procedures which co-ordinate the joint activities of members, and enable them effectively to communicate and work with each other. The ‘dynamic’ capabilities of organisations are their ability to raise business performance by improving their competences and developing new ones by incorporating new information into the knowledge base. Knowledge, which forms the basis for competence, is either codifiable (and therefore readily transferred) or tacit (and therefore not readily transferable beyond the context in which it is embedded). Tacit knowledge, importantly, is specific to a firm and its organisational network. Learning processes, which absorb information and generate and diffuse knowledge (of both sorts), are collective activities that

form part of the background and experience of each organisation. Their effectiveness depends in part on the quality of social interaction and lines of communication. These are enhanced by a shared social environment from which develops common routines, norms and standards, which depend upon, and foster, trust and the willingness to co-operate. The ability to form and maintain effective social relations is therefore a key competence.

These dynamic processes have become more and more urgent because intensifying competition and the pace and direction of technical change has increased the centrality of learning, and therefore the need for co-operation within and between firms, and between business and knowledge institutions. This has given further impetus for the sharing of tacit knowledge to facilitate more co-operative forms of work organisation and technological and business networking. Therefore, and perhaps paradoxically, the intensified competition which drives and is driven by consumer demands, and technical and organisational change, requires greater co-operation within and between firms. The ability of firms to adapt to these pressures is conditioned by the strength of ties within and between organisations. It is also influenced by prevailing managerial and operational cultures and conventions, which may or may not encourage the re-evaluation of past and existing practices in the light of new developments. HRM and particularly total quality management, with its broad technical base and its linking of customers requirements and supplier capabilities with internal work organisation, can be regarded as a crucial tool for this adaptation. Nevertheless, whether or not it can achieve these objectives extends the analysis beyond the scope of competence theory by requiring the consideration of a wider range of economic, socio-legal issues than those usually covered by the theory.

Nooteboom (1999) has emphasised that firms are made up of assets, competences and positional advantage. And, while tangible assets are owned and contracted for, competences and positional advantage are not. Competences refer to technical and organisational capability of a firm, and positional advantage to its market situation, as determined by

such factors as its monopoly power, reputation, and the benefits it draws from the networks of firms and institutions within which it operates. Firm specific competences and positional advantage means, that contracts are necessarily incomplete, creating problems for monitoring performance and for the distribution of rent (Deakin and Slinger, 1997). Moreover, the trust and co-operation between contracting parties, necessary for the developing and maintaining competences, may importantly depend on how possible conflicts both within and between firms over terms, conditions and contractual performance (both explicit and implicit) are resolved. A firm's competences, and consequently its competitive performance, may therefore crucially depend upon the contractual environment in which it operates (Deakin, Lane and Wilkinson ?).

Crucially, the importance to its competitive performance of the way the firm exploits its positional advantage extends to its relationships with its workforce. The ability of the firm to create and maintain high performance work organisations may depend on whether or not it honours what has been described as the *psychological* contract. The psychological contract refers to the *implicit* commitments made between workers and their employers, which the latter may modify as they change work organisation, or as other aspects of the firm's activity impinges on workers' perceptions of work and what it offers in both pecuniary and non-pecuniary terms. An important role of the psychological contract is securing co-operation at work, the willingness by employees to be adaptable to changing technical and performance requirements, and the discouragement of quitting despite the opportunities which might exist elsewhere. In return for their loyalty, hard work and commitment, workers expect employers to honour their side of the 'bargain' by maintaining such conditions as income and employment security and supportive employment relations (Greenhalgh and Rosenblatt, 1984 and Hartley, et.al., 1992). Recent research has shown that improvements to job content may have a positive effect on the psychological contract, thereby increasing the individual's morale and motivation level. However, if HRM practices remove important social support systems within the

workplace, or are perceived by workers as devices for downsizing and intensifying work, the resulting employment and job insecurity could negatively impact on the psychological contract (Burchell, et. al., 1999).

Returning to Figure 1, the discussion in this section suggests two separate dimensions to the intra- and inter-firm relationships. The first are the technical relations required for co-ordinating and developing the productive capabilities of the firm, the quality of which determine the capacity of the firm to perform competitively and to sustain that performance in rapidly changing technical and market environments. The second are the social relations which form the social network within which technical relations are formed, the quality of which play a central role in determining the effectiveness of technical co-operation and hence operational and dynamic efficiencies of the firm's productive system. (Biracree, Konzelmann and Wilkinson, 1998). The ability to sustain the quality of social relations necessary to maintain and improve the firm's competences can be expected to depend on its ability to build, maintain and develop the rules, norms and institutions by which disputes can be resolved, job and employment insecurity countered, and effective representation of stakeholder interests secured.

Notes

- ¹ Blyton and Turnball (1994), Towers (1996) and Applebaum and Batt (1994) provide introductions to these debates. Cully et. al. (1999) report on the use of HRM practices in Britain, as do Wood and Menezes (1998).
- ² For details of the survey design, response rates and bias and sample characteristics, see Bullock and Hughes, 1998.
- ³ To put this in perspective, assuming a firm operates 50 weeks a year, 2% of total labour costs is equivalent to one week of training for each employee at full cost.
- ⁴ For a discussion of competence theories in the context of networking see, for example, Amin and Wilkinson (1999) and the articles in the special issue of the *Cambridge Journal of Economics* to which it is the introduction.

TABLES AND FIGURE

Table 1: Use of human resource management methods to improve competitiveness by size, growth and innovation

% of firms using:	Quality management	Job rotation and multi-skilling	Performance related pay	No. of firms
All firms	34.7	35.0	31.9	2398
<i>a. By firm size</i>				
Micro firms:	20.0 ^{abc}	22.9 ^{abc}	20.9 ^{abc}	1023
Small firms	42.8	42.0	37.5	1075
Medium firms	58.9	54.6	52.7	275
<i>b. Growth rate</i>				
Stable/declining	28.0 ^{ef}	23.8 ^{efg}	23.1 ^{ef}	736
Medium growth	43.9	45.8	41.3	487
Fast growth	41.2	38.3	41.1	514
<i>c. Innovation activity</i>				
Non-innovators	22.3 ^{**}	21.6 ^{**}	22.5 ^{**}	828
Innovators	41.8	43.4	37.2	1485

Note:

- a. significant difference at 5% between micro and small;
- b. significant difference at 5% between micro and medium;
- c. significant difference at 5% between small and medium;
- d. significant difference at 5% between stable or declining and medium growth;
- e. significant difference at 5% between stable or declining and medium growth;
- f. significant difference at 5% between stable or declining and fast growth;
- g. significant difference at 5% between medium growth and fast growth;
- ** Significant difference at 5%.

1. The definitions for the categories of firm are given in Appendix 1.

Table 2: Main sources of competitive advantage and the use of human resource management methods

Mean scores: ¹	Quality management		Using job rotation and multi- skilling		Using performance related pay	
	No	Yes	No	Yes	No	Yes
Personal attention to clients' needs	4.29**	4.39	4.30	4.36	4.33	4.32
Product quality	4.05**	4.22	4.07*	4.17	4.10	4.13
Established reputation	3.95*	4.04	3.98	4.00	3.99	3.97
Specialist expertise or products	3.95*	4.06	3.97	4.04	3.97	4.04
Speed of service	3.68**	3.92	3.70**	3.90	3.78	3.74
Range of expertise or products	3.51**	3.65	3.49**	3.67	3.55	3.58
Product design	3.26**	3.47	3.26**	3.46	3.27**	3.46
Flair and creativity	3.22**	3.35	3.21**	3.35	3.21**	3.35
Cost advantage	2.88**	3.00	2.89	2.98	2.96**	2.83
Price	2.83	2.86	2.83	2.84	2.90**	2.71
Marketing and promotion skills	2.46**	2.69	2.51**	2.60	2.44**	2.76

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns. ** = significant at the 5% level or better, * = significant at the 10% level .

1. Scored on a scale of one to five, from insignificant advantage to crucial advantage.

Table 3: Growth objectives and human resource management methods

% of firms:	Using quality management		Using job rotation and multi-skilling		Using performance related pay	
	No	Yes	No	Yes	No	Yes
Growth objective						
Become smaller	2.8**	1.2	2.6**	1.6	2.8**	0.9
Stay the same size	19.9	10.0	19.2	11.4	18.5	12.0
Grow moderately	58.1	58.6	57.7	59.2	60.4	53.6
Grow substantially	19.3	30.2	20.5	27.8	18.3	33.4

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns. ** = significant at the 5% level or better, * = significant at the 10% level .

Table 4. The importance of business objectives and human resource management methods

Mean scores: ¹	Quality management		Using job rotation and multi-skilling		Using performance related pay	
	No	Yes	No	Yes	No	Yes
Profit margin on sales	3.91**	4.09	3.93**	4.05	3.94**	4.05
Growth in sales	3.77**	3.90	3.79*	3.87	3.78**	3.89
Market share in UK	2.38**	2.92	2.43**	2.82	2.46**	2.79
Profit rate on assets	2.15**	2.50	2.16**	2.47	2.21**	2.39
Growth in exports	1.90**	2.33	1.95**	2.24	1.94**	2.28
Growth in employment	1.75**	2.02	1.80**	1.92	1.80**	1.95
Market shares overseas	1.68**	2.15	1.73**	2.04	1.73**	2.07

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns. ** = significant at the 5% level or better, * = significant at the 10% level .

1. Scored on a scale of one to five from insignificant objective to crucial objective

Table 5: The importance of limitations on the ability to meet business objectives and human resource management methods

Mean scores: ¹	Quality management		Using job rotation and multi-skilling		Using performance related pay	
	No	Yes	No	Yes	No	Yes
Increasing competition	2.61**	2.82	2.60**	2.82	2.63**	2.78
Availability and cost of finance for expansion	2.62	2.65	2.63	2.62	2.66	2.56
Marketing and sales skills	2.49**	2.60	2.47**	2.63	2.49**	2.62
Availability and cost of overdraft finance	2.37	2.38	2.38	2.37	2.44**	2.25
Overall growth of market demand	2.30**	2.45	2.28**	2.49	2.29**	2.48
Management skills	2.24**	2.46	2.22**	2.50	2.18**	2.61
Skilled labour	2.17**	2.42	2.18**	2.41	2.16**	2.48
Acquisition of technology	1.91**	2.01	1.88**	2.06	1.94	1.97
Difficulties in implementing new technology	1.83**	1.95	1.79**	2.01	1.81**	2.00
Availability of appropriate premises and sites	1.70**	1.84	1.69**	1.85	1.71**	1.82
Access to overseas markets	1.51**	1.76	1.52**	1.74	1.52**	1.77

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns. ** = significant at the 5% level or better, * = significant at the 10% level.

¹ Scored on a scale of one to five, from insignificant limitation to crucial limitation.

Table 6: Expenditure on formal training and human resource management methods.

Expenditure on formal training: % of total labour costs:	Using quality management		Using job rotation and multi-skilling		Using performance related pay	
	No	Yes	No	Yes	No	Yes
None	55.3**	26.1	54.6**	28.2	51.5**	31.7
From 0 to 2%	22.8	30.6	23.3	29.5	24.7	27.3
From 2% to 4%	14.1	28.6	13.0	30.2	15.0	28.1
4% or more	7.8	14.7	9.1	12.1	8.9	12.9

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns.
** = significant at the 5% level or better, * = significant at the 10% level .

Table 7: Innovation and partnership arrangements and the use of human resource management methods

% of firms	Quality management		Using job rotation and multi-skilling		Using performance related pay	
	No	Yes	No	Yes	No	Yes
All innovations	57.3**	77.0	56.4**	78.2	59.2**	74.8
Product innovation	51.1**	70.5	50.8**	70.4	53.6**	67.0
Process innovation	40.9**	61.5	39.7**	62.8	43.4**	58.1
Collaborative or partnership arrangements	27.9**	42.4	29.8**	38.8	28.3**	43.0

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns.
** = significant at the 5% level or better, * = significant at the 10% level .

Table 8. The use of external advice and services and human resource management methods.

% of firms using:	Quality management.		Job rotation and multi-skilling		Performance related pay	
	No	Yes	No	Yes	No	Yes
Taxation and financial management	53.6**	62.7	54.0**	61.9	53.5**	63.8
Computer services	50.3**	63.5	50.4**	63.2	49.5**	66.2
Advertising	43.3**	53.1	43.8**	52.1	45.2**	50.0
Staff training and development	36.3**	63.4	38.0**	60.0	39.4**	59.0
New technology	31.4**	41.8	31.5**	41.6	32.1**	41.4
Staff recruitment	29.2**	45.3	30.9**	42.1	30.1**	44.9
Marketing	26.2**	38.1	26.8**	36.9	28.1**	35.1
Business strategy	23.0**	37.0	23.6**	35.7	24.4**	35.2
Product and service design	17.3**	25.1	17.1**	25.4	18.1**	24.2
Market research	14.2**	27.1	15.5**	24.5	15.4**	25.7
Management organisation	13.7**	27.5	13.7**	27.2	15.7**	24.3
Public relations	13.3**	23.9	14.6**	21.4	14.0**	23.3

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns.
 ** = significant at the 5% level or better, * = significant at the 10% level .

Table 9: Human resource management methods and the impact of external advice and services on meeting business objectives

Mean scores: ¹	Quality management		Job rotation and multi-skilling		Performance related pay	
	No	Yes	No	Yes	No	Yes
Taxation and financial management	2.96**	3.11	2.97*	3.10	2.98*	3.10
Computer services	3.14**	3.26	3.15	3.24	3.16	3.23
Advertising	2.54*	2.66	2.56	2.64	2.52**	2.71
Staff training and development	2.83**	3.19	2.93**	3.10	2.94**	3.09
New technology	3.25	3.33	3.27	3.31	3.25	3.33
Staff recruitment	2.53**	2.77	2.58	2.71	2.53**	2.79
Marketing	2.61**	2.94	2.73	2.79	2.71	2.82
Business strategy	2.80**	3.03	2.83*	3.01	2.83*	3.01
Product and service design	3.08*	3.27	3.04**	3.32	3.16	3.17
Market research	2.55**	2.78	2.62	2.71	2.63	2.72
Management organisation	2.82**	3.07	2.84*	3.04	2.86*	3.06
Public relations	2.82	2.81	2.82	2.80	2.73	2.91

Note: Asterisks in the first column of a group indicate statistically significant differences between the columns.
 ** = significant at the 5% level or better, * = significant at the 10% level .

1. Scored on a scale of one to five, from no impact to crucial impact.

Table 10. Intensity of human resource management activity, innovation, exporting performance and employment growth

	% of firms innovating	% of firms exporting	% of firms with growing employment	No. of firms
All firms	64	43	58	2399
<i>Firms using:</i>				
No HRM practices	50	29	43	932
Quality management only	65	46	62	241
Job rotation and multi skilling only	68	38	57	210
Performance related pay only	62	47	71	256
Quality management and job rotation and multi skilling	81	50	65	252
Quality management and performance related pay	77	60	67	130
Job rotation and multi skilling and performance related pay	77	52	67	168
All three HRM practices	87	65	76	210
High performance firms	100 ¹	64	76	156

1. Innovation is one of the qualifying conditions for inclusion in the high performance firm category.

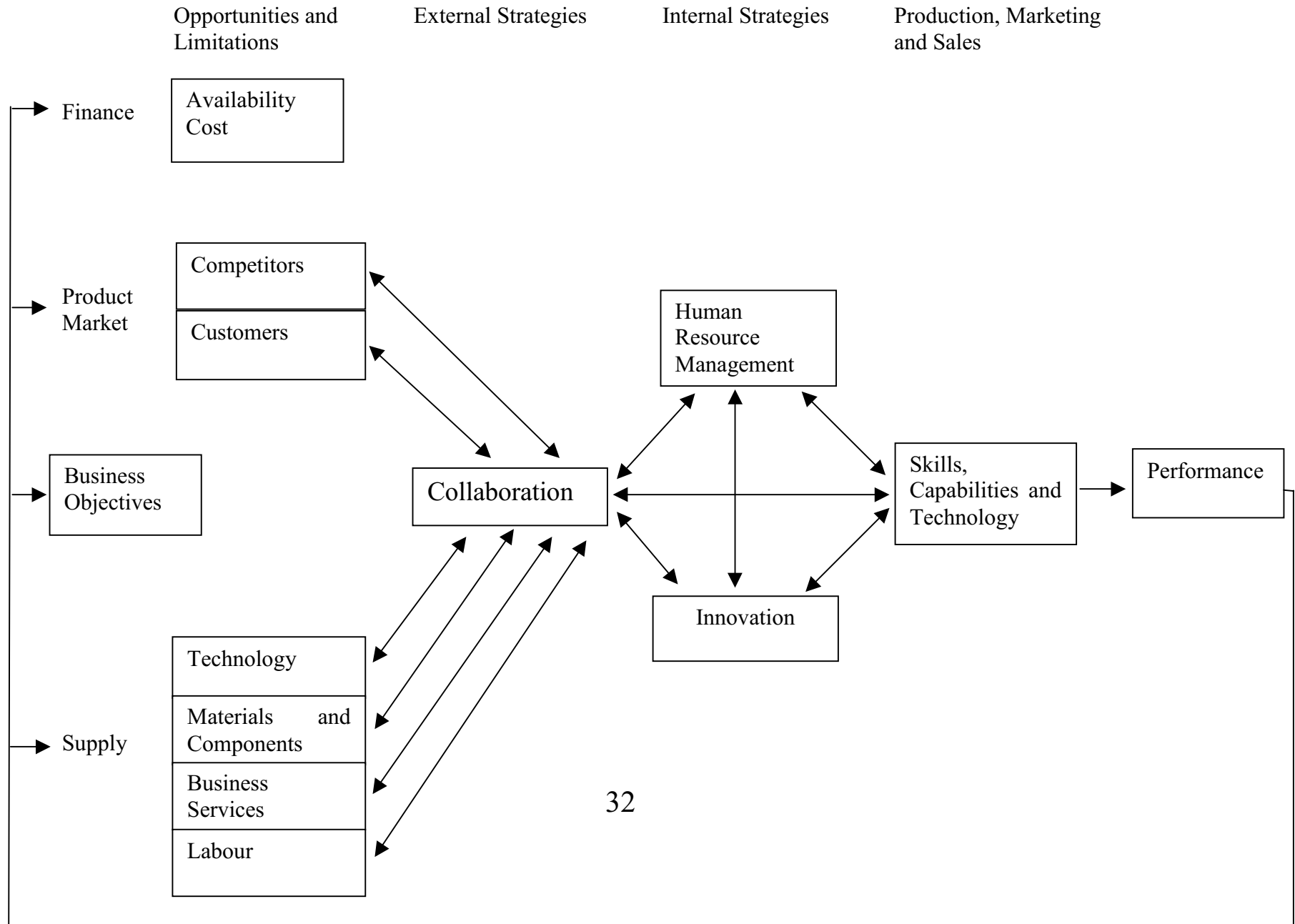
Table 11. Intensity of use of human resource management, innovation, exporting and growth.

Use of HRM	% of firms innovating	% of firms exporting	% of firms with growing employment
None	50	29	43
One	65	44	63
Two	78	54	66
Three	90	65	76

Table 12. Use of human resource management and indices of labour turnover.

	Unskilled and semi-skilled manual	Skilled manual	Clerical and admin.	Technicians and lower professionals	Technologists and higher professionals	Managerial
Use of human resource management methods						
None	0.97	0.75	0.52	0.68	0.70	0.27
Quality management only	0.92	0.78	0.54	0.74	0.49	0.26
Job rotation and multi skilling only	0.94	0.76	0.46	0.50	0.47	0.29
Performance related pay only	1.09	0.73	0.76	0.85	0.92	0.39
Quality management and job rotation and multi skilling	1.07	0.82	0.71	0.58	0.49	0.27
Quality management and performance related pay	1.32	1.03	0.81	0.68	0.58	0.38
Job rotation and multi skilling and performance related pay	1.15	0.86	0.68	0.60	0.56	0.41
Use all three	1.15	0.81	0.78	0.80	0.58	0.44
<i>All firms</i>	1.03	0.79	0.62	0.69	0.63	0.32

Figure 1. Productive Systems and Competitive Performance



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APPENDIX

Appendix 1.

Types of Business

Micro	Businesses with less than 10 employees in 1996/97
Small	Businesses with between 10 and 99 employees in 1996/97
Medium	Businesses with between 100 and 499 employees in 1996/97.
Stable/declining	Businesses with zero or negative employment growth in the period 1994-97
Medium growth	Businesses with employment growth greater than 0% and less than 40% in the period 1994-97.
Fast growth	Businesses with employment growth of 40% or greater in the period 1994-97.
Innovators	Businesses which introduced a product or process innovation.
Non-innovators	Businesses which did not introduce any innovation.