Knowledge work and new organisational forms: the HRM challenge

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Introduction

Within knowledge intensive industries the networked organization (Dyer and Nobeoka, 2000) has become a prominent means of operating (Ahuja, 2000; Dyer, 1996; Dyer & Singh, 1998). That is to say, knowledge intensive firms (KIF) work closely with their clients and other stakeholders in the network in both loosely and tightly coupled ways (Seely Brown, 2002) to deliver knowledge rich products and/or services. This organisational form facilitates knowledge creation and flow and allows several organisations within the network to benefit from joint knowledge development. However, within this context the boundaries between firms begin to blur and it would be naïve to assume freedom of strategic HR choice within the KIF. The organisation of knowledge work is therefore influenced by client pressures as well as prominent employment practices within the network.

This paper carefully considers the impact of external pressures (client demands and influences) and internal pressures (employment mode of core knowledge workers, employee expectations, knowledge ownership) on the management of knowledge workers. We do so by paying attention to the nature of the network within which the firm operates and we consider the influence that wider professional networks have on the choice of HR systems. Here we look beyond the boundaries of the firm to

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understand how different knowledge configurations (Lepak & Snell, 1999) are managed.

We begin our argument by reviewing the nature of knowledge work and develop an understanding of the prominence of the networked organisation. Here we consider how both the structure of the knowledge network and the dynamic nature of the relationships within the network impact on the strategic nature of HR practices. Hereafter we use empirical data to illustrate how two medium-sized software organisations addressed the HR challenges of the networked organisation.

We argue that successful organisations gain human resource advantage (Boxall and Purcell, 2003) at the firm and network level where the choice of employment models (Lepak and Snell 1999) becomes critical, especially the distinction between an acquisition mode where the dominant HR configuration is essentially market based, and an internal development mode where the HR configuration is commitment based. The former may be expected where there is high mobility of software professionals, yet these firms, one with success, the other less so, opted for a commitment based approach while encouraging network activities expected to increase the software engineers external market value.

The nature of knowledge work and knowledge workers:
The purpose of knowledge work is to provide knowledge rich solutions or services (Tsoukas, 1996) to clients through a process of innovation and knowledge creation. Hence, knowledge intensive firms mainly engage in business-to-business relationships with their clients (Swart & Kinnie, 2003). It is often the case that a small-to-medium sized knowledge intensive firm is dependant upon a small number of relatively large clients. These client relationships are of critical importance to the firm and will often be nurtured at any cost. This puts the knowledge intensive firm in a vulnerable position and requires the firm to respond to client demands as well as external pressures on employment practices such as the level of skill scarcity in the labour market and legislative requirements.
One of the key ways in which the client influence impacts on the KIF is through the organisation of knowledge work. That is, clients can demand that certain employees work on their projects and therefore have an impact on resource allocation (Alvesson, 2000). The dominant form of work organisation is the project team and knowledge workers then work within project teams which centre on a product, service or a client. In these situations they often work closely with knowledge workers from other organisations (including the client organisation). This is one of the key vehicles for the diffusion of management practices between knowledge intensive firms.

The organisation and management of knowledge work is therefore not only influenced by client pressures but the demands of knowledge workers themselves play an important role in the adoption of management practices. To understand the nature of this internal pressure on employment practices we briefly review the literature on the characteristics of knowledge workers.

The notion of identifying a particular group of employees as knowledge workers can be problematic (Alvesson, 1995). There are often strong variations between professional service in high tech companies on the one hand, and more routinised service and industry companies on the other (Alvesson, 2000: 1103). The key characteristic that differentiates the professional service group of knowledge workers is that their work requires high levels of knowledge input in a non-routinised manner, i.e. bespoke designs and the subsequent output results in a product/service within which their knowledge is embedded.

Knowledge workers tend to work exceptionally long hours, where commitment is related more to the nature of the work (designing an exceptional system) than to the organisation. They have a strong sense of intrinsic motivation and are mostly interested in challenging work (Swart, Kinnie, & Purcell, 2003). They also tend to identify with other high-tech professionals rather than the organisation for which they work (von Gilnow, 1988) and therefore develop strong interpersonal networks that span organisational boundaries.
In most employment situations the management of the knowledge workers will be loosely structured with fluid project teams, rotation of leadership positions and low degrees of monitoring and control being present in the employing organisation. This fits with the professional need for autonomy and self-directed development. That is to say that the knowledge workers are often in control of the networks that they develop and the skills that they acquire.

The networked organisation
The conduct and performance of firms can be more fully understood by examining the network of relationships in which they are embedded (Gulati, et al., 2000, p. 203). This approach is more widely referred to as the relational approach and is often contrasted with the atomistic approach, which focus mainly on 'within firm variables' to explain various outcomes. The relational approach considers the social context within which firms operate in order to understand between-firm-differences. This approach is highly relevant to firms that have fewer and more long-term B2B relationships. Here we need to consider how suppliers, partners, clients and customers influence the way in which people are managed in the focal firm\(^2\). In other words how the network influences the strategic choice of HR practices (Uzzi, 1997; Wetsphal et al., 2001; Powell, et al, 1996).

Research into inter-firm networks originated from joint-venture studies but has developed considerably during the last decade, with attention being paid to learning and knowledge sharing (Dyer & Nobeoka, 2000, Powell, et al., 1996), the pooling of resources (Oliver, 1997), imitation and innovation (Brusoni, et al., 2001). Considerably less research is conducted into the constraints placed upon individual firms who operate in the network.

Within knowledge intensive industries the networked organization (Dyer and Nobeoka, 2000) has become a prominent means of operating (Ahuja, 2000; Dyer, 1996; Dyer & Singh, 1998), however, literature on the impact of this organizational form on HR practices is undeveloped. These organisations are often faced with several challenges which serve to constrain their choice of HR system. That is, they

\(^2\) The focal firm is the firm in the network that we had access to and researched in.
need to respond to pressures from clients when acquiring and managing contracts whilst retaining and developing their key employees in the context of an often competitive labour market. In order to understand how these network relationships impact on employment practices we review the literature on the structure (how the network looks) and dynamic relationships (how the network operates). This develops a framework for analysing two case studies in the latter half of the paper.

[Insert Table 1 here]

**Network structure:**

Previous research indicates that inter-organizational networks often provide the advantage of a shared division of labour where various firms specialize in the value-creation activity supported by their particular skill-set (Park, 1996). Here the **purpose of establishment of the network** is the advantage that stems from complimentary skill-sets within the network.

This may, however, not always be the case. Literature often overlooks outsourcing arrangements brought about by delayering and cost saving drives. For instance, firms may outsource activities previously conducted by them. In these instances the network is more characteristic of a re-configuration of skills, or ‘farming out of skills’ (Park, 1996) than a true integration of complimentary skill-sets (Dyer & Nobeoka, 2000; Powell, et al., 1996). We differentiate between two extreme purposes of establishment: the first being the farming out model, where skills previously developed internally is outsourced to save costs and the second is the innovation model where investment is made in combining unique skill-sets in order to gain competitive advantage as a network.

Although complementary skill-sets within the network are central to the innovation model, a focal firm may also naturally be in an advantageous position due to the distribution of expertise in the network. This refers to shared professional expertise in the network, often expressed through a shared language. For example, a life science research organization that employed mainly PhD chemists worked closely with universities and pharmaceutical organizations that were staffed by similar
professionals (all chemists but working in different specialisms). The competence of these employees were governed by professional associations and a high degree of respect and shared language or 'one of us' was evident across the various organizations (Swart et al., 2003). Where professional skills are dispersed among several firms there tends to be less interference with the management of employees in the focal firm and therefore a higher degree of strategic choice that can be enacted by the firm.

The purpose of establishment will be directly related to the membership of the network. If a network is created with a focus on innovation it will attract firms with diverse skill-sets and will engage in knowledge sharing and collaborative product and process development. In this context membership will also have an important influence on the competitive ability of the focal firm. For instance, Afuah (2000) found that the suppliers’ capabilities influence the performance of the focal firm to a great extent. A resource-rich partner therefore enables the focal firm to be more successful. If a key firm, such as Tesco in the retail industry, is part of the focal firm’s network then all the firms may benefit from the key firm’s knowledge (Powell, et al., 1997), operational processes and customer base.

These dominant firms may also have a high degree of power over smaller firms in the network and may severely constrain intra-firm relationships (with employees) as well as strategic choice. In a similar way the effect of non-membership or exit of a major firm (Oliver & Ebers, 1998) may cause negative effects to ripple through the network and may even lead to the destruction of some of the smaller firms. The existing choices of partner firms can therefore both restrict and enlarge the opportunity set of future relationships available to the focal firm (Gulati, 1995). In summary, network membership can influence strongly what each of the members can and cannot do as well as how successful they will be.

Research in the auto industry (Dyer & Nobeoka, 2000) in particular show that networks are often dominated by a resource-rich firm, such as Toyota, which have highly specified demands and partners with firms with well developed but not necessarily unique skills. Here the dominant firm has the opportunity to influence the management of human capital within some of the member firms. This is often
accomplished through consulting teams, voluntary learning teams, inter-firm employee transfers and the supplier association known as kyohokai that has three stated purposes

(i) information exchange between member companies
(ii) mutual development and training among members
(iii) socializing events (Dyer & Nobeoka, 2000, p. 352).

This joint management of human capital is often seen in a positive light and related to network learning and knowledge sharing that leads to innovation and high quality production. We argue, however, that these 'positive influences' often result in severe constraints over strategic choice and smaller members of the network have to 'put up with' the dominant influence of the resource-rich organization in order to firstly, remain part of the network and secondly, given themselves the opportunity to eventually occupy a more central position in the network.

These characteristics represent a snapshot of how the network looks and we view this as a fundamental building block in understanding how the network functions. The following set of characteristics that we review is the network relationships because these are at the heart of the network processes (Powell & Brantley, 1992).

**Network relationships**

Literature on network structures often couple the concepts of structure and social capital in order to explain how cohesive ties foster cooperation and innovation (Gargiulo & Benassi, 2000). Social capital in this context relates to network resources (Gulati, et al., 2000) and is defined as the sum of the resources that accrue to [a group] by virtue of possessing a durable network (Bourdieu & Wacquant, 1992, p. 119). Van Deth (2003) provides a useful framework for the analysis of social capital and identifies two key dimensions of social capital, i.e. structural and cultural. The former refers to the relationship configuration (structural density and structural holes) whilst the latter informs the nature of these links and includes variables such as trust, shared values and norms. We do recognize that many other frameworks exist for analyzing the nature of relationships but feel that the Van Deth model is particularly useful in this context because it captures the configurations of relationships across boundaries.
In the section that follows we firstly look at the structural aspects of relationships in the network.

Relationship configuration comprises both structural density as well as structural holes, which refer to the extent to which individuals and groups in and across firms are connected in the network. According to the structural density view, tight social ties facilitate the establishment of social norms, sanctions and trust. This may, however, be associated with coercive relationships and attempts by the dominant firm to control (and constrain) the free choice of the focal firm. Structural holes (Burt, 1992) are seen as loosely coupled relationships which allow for innovation but could also lead to fewer shared norms and less likely to be governed by trust. These relationships are often used to analyze the innovative process in Silicon Valley where mutual information exchange and purely economic relational transactions were dominant.

As firms enter and become part of a network they develop sets of institutionalized rules and norms through their interaction with other organisations in the network. The nature of these relationships (cultural aspect of social capital) is often influenced by the structural network characteristics. For example the position of the firm in the network as well as its brokerage opportunities created by its skill-set may influence the degree of power it has over other firms or whether truly cooperative relationships are fostered. We refer to the nature of the inter-firm relationship as **tie modality** and are mindful of both cooperative and coercive relationships.

The modality of the ties that a firm creates and maintains, whether cooperative or opportunistic, strong or weak, multiplex or single, has clear implications for a firm’s strategic behaviour and performance (Gulati, et al., 2000, p. 208). The majority of research indicates that strong ties in supplier networks can benefit both the dominant firm and the member firms in the network. It is also the nature of the relationship that is regarded as the unique advantage of the network, i.e. inimitable resources. However, overly strong ties may put strain on the focal firm as they are restricted in their strategic choice. Uzzi (1997) warns of the implication of overly embedded networks for stifling economic action and releasing intense negative emotions (p. 59).
Similarly, Dore (1983) found that embedded actors will focus more on exploiting dependency to cultivate long-term cooperative ties than maximizing rents for resources.

Both inter-and intra-firm relationships have informal/personal (Oliver, 1997) as well as formal/contractual dimensions to them. Research conducted in the Japanese auto and Italian knitwear industries (Uzzi, 1997) indicates that relationships in these networks are mainly governed by trust and personal ties rather than explicit contracts. Here 'thick information exchange' and the flow of tacit knowledge are facilitated by the strong ties in social communities that cut across various firm boundaries (Dyer & Nobeoka, 2000).

When considering tie modality it is important to classify the various relationships in the network. Here we differentiate between the suppliers, customers, clients, the parent organization and the employees. Previous research considers mainly the nature of the relationships between firms in the network but we consider it important to include intra-firm relationships when we analyse tie modality. This links directly to the management of human capital and specifies how network relationships influence employment relationships. In the section that follows we apply the framework developed here of the networked organization to analyse the network influences on employment practices in two medium-sized software firms.

**Method**

The qualitative and quantitative data that we present here were gathered between 2001 and 2002 in six small-to-medium knowledge intensive firms where the emphasis is on the provision of professional services to other businesses (clients) where task ambiguity is high (Thompson, 1967) and product and labour markets are fluid (Swart, Kinnie and Purcell 2003). We use the case examples of two medium-sized software development firms (Marlborough Stirling and ait) who operate within financial service networks to illustrate the importance of understanding the effect of network influences on the strategic choice of HR practices. In each firm we interviewed a

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1 This research was part of two research projects that explored the links between people management and business performance. Both these projects were sponsored by the CIPD.
random sample of professional employees using a carefully designed employee attitude survey designed to explore levels of satisfaction with aspects of HR policy and practice, effective organisation commitment, job satisfaction and the quality of line management in leadership and people management. Control questions based on the WERS98 questionnaire were also used.

The cases:
Ait provides software products and services for around 20 clients in the financial services sector. It was established in 1986 and at the time of the research employed around 400 people. This firm’s competitive advantage derives from the firm’s expertise at managing its relations with its clients and with its employees. Ait offer their clients a mix of software services and products. The services involve the development of bespoke software especially for clients who are looking to integrate existing data bases. This involves a high level of customised work to fit the client’s needs. Contracts vary in length, size and value. Some may be relatively short (just a few weeks) small (a handful of employees) and of low value whereas others are longer (up to 2 years) involves a large team (20) and are of high value. Recently at have been developing a more standardised product which they can sell to clients and then gain a licence income. This move was because the services work produced income which was unpredictable and variable. This meant that close relationships had to be formed with clients although, by choice, employee time spent on clients’ sites was minimised and was much lower for example than in Marlborough Stirling. For at products provide a smoother income stream, less time on client’s site and less attention is given to the precise demands of individual clients.

Competition in the marketplace is intense with alternatives provided by in house specialists and other software houses. As Figure 1 shows the network has various members. Aside from existing clients the most important member of the network is a large management consultancy organisation with whom ait have a strategic alliance. This firm provides new business opportunities by passing on contacts or sub-contracting work. Other ways of getting new business include extending work for existing clients or responding to a formal Invitation to Tender. These invitations and more informal approaches often arise because ait is well known for its expertise in the
relevant industry networks. This is established not only by word-of-mouth but also by its networking activities such as making presentations of its research findings and hosting seminars.

This mix of products and services has an impact on the internal structures. There are a series of client based project teams and a separate product team. These project teams vary in size depending on the client needs and the stage of the project. The boundaries between these teams are weak and there is an emphasis on knowledge sharing across the organisation. In addition ait has a number of other teams or communities to facilitate knowledge sharing. The vocational teams are comprised of employees doing the same job (for example testers) and they are designed to share best practice throughout the company. There are also non-hierarchical committees which are used for the communication of information vertically and horizontally within the company. Extensive efforts are made to communicate information by technical and non-technical means.

The multiple teams and multiple role structure are designed not only to share knowledge, but also to develop a high level of organisational commitment. Indeed, ait is very conscious of the need to manage relationships with clients and to manage relationships with employees. This is summed up by their stated intention to be ‘the best company in the world to work with and the best company in the world to work for.’ They are relatively successful in doing this. Employees in ait showed the highest level of organisational commitment (mean 2.04, sd .817 on a 5 point scale 1 highest, 5 lowest levels of commitment) of any of the companies we studied (see Table 3 for descriptive statistics of both cases). Team spirit is also strong (mean 2.00, sd .1.121). In 2001 they were voted the 5th best company in the UK to work for in the Sunday Times survey.

This emphasis on commitment to the organisation is also reflected in various HR practices and the role of HR specialists in decision making in the organisation. New employees are recruited principally directly from University. The selection criteria emphasise the fit with the organisation’s culture rather than technical expertise.
Training for new employees lasts for three months and is designed to develop generic rather than client specific skills.

Employees are also appraised not only on their contribution to a particular client project but also more generally on the extent to which they have developed their skills. Similarly the reward strategy is not linked just to individual contribution to projects but is based on an overall appraisal of their contribution to the organisation as well as their place in the salary structure.

The overall emphasis in this company is the creation of dynamic intra-organisational networks to facilitate integration and knowledge sharing. The HR Director (whose title is Director of Intellectual Capital) and her two subordinates (Knowledge Sharing Managers) pay particular attention to recruitment, selection and induction of fresh staff straight from university wherever possible. Crucially it is the HR team which allocate staff to teams in order to encourage learning and cross fertilisation. As each staff member belongs to at least three teams (project, professional and social/consultative) with little overlapping membership significant levels of social capital are created. Professionals are strongly encouraged to develop and utilise external professional networks and share learning (for example over lunch in ‘brown bag’ seminars) and the office layout facilitates exchange ‘around the water cooler’ — or in this case kitchens/coffee bars. This sense of integration is reinforced first by the avoidance of contract staff from temporary work agencies (TWA) as far as possible and second by keeping knowledge workers on site. Customer relations are managed by more senior staff like project leaders. This means there is a conscious preference to build intra-organisational networks while excluding external clients from being able to exert undue influence on resource allocation within it.

**Marlborough Stirling** provides software products and services to the mortgage, life, pensions and investment sectors of the financial services industry. It concentrates on products which form part of the clients’ IT platforms that support core business processes. It therefore tries to lock itself into the network by contributing to the clients’ core business processes. Established in 1987 it employed around 500 people
at the time of the research and its turnover had increased by 58% between 1998 and 2000 to reach £50m. It gains its competitive advantage from paying very close attention to client needs and by developing expertise over time about client products and IT systems.

This firm has developed a diverse set of products and services and offers these to clients in a variety of combinations. A combination of insourcing, outsourcing, third party administration, managed services and application series provision are made available. As Figure 2 suggests Marlborough Stirling operates in a complex network. Aside from clients, with whom it may operate joint ventures, other members of the network include informal relationships with companies regarded as being influencers in the industry. This might include management consultants and consulting actuaries with whom knowledge is shared, company development discussed and mutual opportunities discussed. This is clearly an important way of winning business (aside from formal invitations to tender) since Marlborough Stirling is recommended by word-of-mouth and via the use of reference sites. A third important group is the ‘Net’ group of companies who work with Microsoft. The final group in the network is the local educational providers who have co-operated with Marlborough Stirling to provide courses which are well suited to the company’s skill requirements.

Competition for business in the industry is very tough. The alternatives are in-house providers and other software houses. These market conditions combined with the nature of the product and services offered mean that potential clients can specify their demands to possible providers quite precisely. The contracts with major clients are large, long and high value and typically involve multiple releases of software within the same product dedicated to a client. Teams of employees often work closely with clients on their own sites over long periods. Marlborough Stirling staff are on the client’s site and face the client’s operational pressures for the release of a piece of software by an agreed date. Clients retain a lot of power throughout the life of the product. As one respondent said, ‘the client is King.’ This emphasis on products has an impact on the internal structure of the company. Marlborough Stirling is structured around three major products and within there are then various project teams linked to particular clients.
The firm is organised in a traditional manner according to functional specialisms, e.g. finance, HR, legal, sales, marketing, training, research and development. There is a high level of fragmentation, specialism and hierarchy within the firm. These functional departments and the project team structure contributed to what one respondent referred to as a 'silo mentality.' The HR department, although large, is separated from mainstream decision making within the business. It is also separated from the training activity (known as The Academy) which is responsible for the extensive induction training. Apart from this initial training there is little formal training for existing employees and most emphasis is placed on on-the-job training.

Although line managers are supposed to carry out an important role in HR they do not always do this in practice. For example performance appraisals are not always carried out and there is not always a clear link between this and reward. There is a strong philosophy of 'work them hard' and promotion tends to take the form of 'up or out.' This is reflected in employees' relatively low levels of satisfaction with performance appraisal (mean 2.47, sd 1.172) and career opportunities (mean 2.44, sd 1.294). More generally this is shown in the satisfaction which employees have with their relationship with their line manager which was one of the lowest of the companies studied (mean 2.86, sd .805).

Senior managers and directors retain a high degree of control over the running of the company and employees expressed low levels of satisfaction with their involvement in decision making (mean 2.83, sd .702) and with communications (mean 2.53, sd .623). There is a clear feeling that the management style is one which is more suited to a small company, in fact one respondent argued that there was a clear intention to run Marlborough Stirling as if it were a series of small companies.

This 'series of small companies' within the larger firm was symptomatic of the fragmented nature of the company with each product area, and project team managing its own relationships in the network and solving its own problems in a reactive way. Labour shortages were dealt with by working with TWAs and recruiting urgently to fill vacancies. There was no sense of an internal labour market and no attempt at making strategic choices in the people management area. As a result the firm was
exposed to its network of clients unable to constrain client demands for on-site working for example.

**Discussion and analysis**

Our presentation of the two case study organizations here reflects very different network conditions and equally different HR responses to these network influences. Before analyzing these differences it is important to note the similarities between the two firms. Both firms are medium-sized and operate in the same industry (software development). They compete in the same client market (financial services) and were subject to the same market pressures (technology crash of 2000, tight labour market and internal pressure from professional knowledge workers). It is just these similarities that make for a fascinating study of the varying employment modes adopted in response to network influences (see Table 2).

The network structures of the two firms vary slightly, whilst Ait functions in a mainly innovative network model where they are seen as thought leaders by their clients, Marlborough Stirling engages in both innovative and ‘farming out’ models. Ait gets business because it is seen to offer a unique solution to problems putting them in a strong position in the marketplace. This places more emphasis on the business analysis skills of their employees — skills which are in short supply and need to be addressed by HR policies. These projects involve a high level of integration and close working with the client. However, the ait works hard to minimize the time spent on client’s sites because they want maintain good relations with their employees and to protect their organisational culture.

The lower level of unique skills in the Marlborough Stirling network is particularly evident in their third party administration (TPA) arrangements. Due to this particular network arrangement Marlborough Stirling creates more fluid boundaries between themselves and their clients which allows for a free flow of expertise across network partners. However, when firms outsource activities (which were previously housed in the firm) they tend to want more control over which staff work on their projects and over the quality of the end-product. This close working relationship, which often included extended working periods on the client site, lead to a fragmentation within
Marlborough Stirling's culture and a higher degree of identification with the client than the organization.

Although there is a low level of uniqueness at the start of a contract Marlborough Stirling employees build up an expertise over the life of the project. They gain an intimate knowledge of the client's products and IT systems by spending a lot of time on the client's site. This client dedicated knowledge also creates barriers to entry for competitors and ensures that the client and Marlborough Stirling project team become closely intertwined. This approach produces a strong sense of teamworking among employees (mean 1.78, sd .850) but a much weaker commitment to Marlborough Stirling as a whole (mean 2.53, sd .577).

This strong emphasis on the relationship between the team and the client and weak attachment to the organisation affects the distribution of expertise inside the Marlborough Stirling. Expertise is not well distributed within Marlborough Stirling and there are strong barriers to knowledge sharing between the project teams. This is because individuals are seldom rotated between project teams and there are very solid boundaries between various project teams with very little knowledge flow between core teams.

The nature of relationships at the network level was rather different for these two firms. Ait valued their relationships with clients but always tried to 'let the client in' at the most senior level whilst maintaining their strong organizational culture. Here we see a case of structurally dense relationships which impact only at the senior levels in the organization. In the case of Marlborough Stirling there are very strong relationships at all levels in the network wherein employees work at various company sites (insourcing and outsourcing). In this case the client has a very direct influence on the day-to-day management of Marlborough Stirling employees.

It was not only the structure of the relationships that varied but their nature could be contrasted as well. Because Ait had unique skill sets in the network and was seen as thought leaders, they did not only have less client pressure on employment practices but engaged in more cooperative relationships. This aided innovation and knowledge
creation at the network level. Whereas Marlborough Stirling had mainly cooperative relationships but given the sector of the market they serviced, they were exposed to some regulated and formally governed relationships (e.g. TPA of pension funds). This often stilted the development of new solutions to client problems. Furthermore employees identified strongly with the client and would prefer to offer solutions that did not require change on behalf of the client. That is, their skill development was more client directed than innovation driven.

Within the context of varying network structures and relationships the two firms were faced with different external constraints on the strategic choice of HR practices and responded with the adoption of different employment models.

The boundaries between ait and the other members of the network were less fluid than in the case of Marlborough Stirling. One could argue that Marlborough Stirling chose to allow a greater degree of client influence in order to retain key clients. This did however have an impact on the strategic focus of the firm and the freedom of choice over how people are managed. In ait the focus was on the internal organisation and the development of a strong organisational culture and generic skills which are valuable to the employee and the organisation rather than just concentrating on the needs of individual projects. Marlborough Stirling’s focus was external and the formation of the organizational culture as well as individual skills was client led. In our interviews we found that different (large) teams within the firm had very different perceptions of what the culture was and spoke freely of a fragmented culture. There was also an internal competition to work on a ‘good client’ team. We would argue that ait had taken a conscious and strategic decision on people management closely linked to their service and client strategies. Marlborough Stirling had evolved its HR piecemeal and senior management were unaware of choices that could have been made or of the consequences of not making them in the sense of awareness of alternatives.

The degree of external constraint over HR choice is also evident in the level of representation of HR within the firm. Within ait the Human Capital Director is closely integrated into strategic decision making. She has a position on the board and so is
able to influence major corporate decisions and also has a key role to play in allocating staff to client projects. The concern here is to ensure that the allocation of staff takes account of both the needs of the client and the need for employee development, which are not always compatible. However Marlborough Stirling has split HR and Development functions with no representation at board level. Resource allocation and skill development are largely functions of client relationships.

Line management responsibility for the implementation of HR practices also very across the two firms. In at line managers have a clear responsibility for carrying our HR policy and they are monitored to check that they are carrying this out. For example they are responsible for conducting performance appraisals of their staff and the HR department will monitor this process. This emphasis is shown in the high level of satisfaction which employees have with their line manager relationships (mean 2.02, sd .589). Line managers in Marlborough Stirling are under a high degree of pressure to deliver to the client on time and a low priority is given to the importance of HR and people management issues.

**Conclusion and implications**

In at the nature of the competitive advantage is derived from the relationship between the organisation and its clients. Here the network has an innovation focus and is structurally dense at senior levels in the organisation, creating structural holes which stimulate innovation and knowledge creation. The aim is to develop expertise within the organisation which has value to a variety of clients. This is supported by the sophisticated internal structures which are designed to maximise knowledge sharing. This is reflected in the approach to managing HR which is aimed at maintaining a strong organisational culture and developing a set of skills HR polices and practices which support and maintain the achievement of this. However in Marlborough Stirling the network shows facets of both innovation and 'farming out' models. In this network the structurally dense relationships at all levels impacts directly on HR practices: that is, clients place demands on the composition of teams and the length of time spent on the client site. Here the Marlborough Stirling employees become accustomed to the culture and practices of the client organisation, which in turn leads to greater fragmentation when the employees return to Marlborough Stirling. The HR
structure, policy and practice reflects the conditions which exist within the network. The competitive advantage of the organisation is based upon developing expertise over the products and services of the client over time and then producing the software releases which the client wants on time. The success of the firm is centred on the client relationship. This highly specialised, fragmented and segmented approach is reflected in the reactive approach taken to managing employees and the internal organisation of the firm which is based on hierarchy and specialisation with close monitoring of performance from the top.

In essence our two case studies draw our attention to the degree of external constant placed upon the strategic HR choice. In contrast, Lepak and Snell’s (1999) model of HR architecture is premised on both rational choice and the relative freedom of senior management to make choices. This is problematic since, as we have seen in the networked organisation the ability to choose is constrained by clients, which are usually bigger and resource rich, and by professional networks allowing employees high degree of choice.

The presumption that firms have functional strategies, in this case in HR, linked to wider business strategies is also questionable. In one sense the use in one of our firms of different forms of contracting would lead us to suppose the use of an acquisition employment mode predicted by Lepak and Snell where firms require workers with high levels of generic skills available in the sector or the wider economy as a whole. This, they suggest, is likely to be associated with an acquisition mode of HR strategy. Thus the nature of the network especially in employment would lead, it is predicted, to a fluid form of HR contracting leading to the use of independent contractors or freelance professionals, TWAs and short term contracts. To a degree the experience of Malborough Stirling matched this type of employment pattern with full-time open contract professional knowledge workers having high degrees of turnover. It was not, as we have indicated, a considered policy choice and there was little evidence of strategic thinking. The employment mode was reactive and mixed such that other aspects of the network such as working on client sites and professional networks (Microsoft) dominated. Ait, in contrast, consciously took a decision when the firm began to grow from its small owner-manager base above a shop to build strong
internal cohesion and integration both by careful recruitment of young graduates and through multiple team structures, integrated reward systems and job allocation models based on personal development and skill enhancement. This is clearly a high commitment employment mode. As in the Lepak and Snell model here there is a mixture of high levels of human capital applicable across the sector and thus mobile, and unique human capital built through the acquisition of firm specific idiosyncratic knowledge including operating procedures which becomes a resource mobility barrier (Mueller 1996). In a sense ai consciously choose to keep the centrifugal pressures emanating from the network – the client and professional career opportunities – at bay through the creation of particularly powerful centripetal forces maximizing knowledge workers' commitment to the firm and engendering a sense that professional career building was best achieved by staying with ai.

The danger for networked organizations is that they can loose internal cohesion especially if they are dependent on a few, powerful clients in a highly competitive product and service market, and where the labour market favours the mobility of knowledge workers. These pressures are particularly evident when firms have less unique skill offerings and overemphasize client relationships through structurally dense networks. In these case examples knowledge workers tend to identify more strongly with their client and their profession, which over time, fragments the knowledge organisations. The development of conscious HR strategies emphasizing integration and organisational identity may be a more sensible option in the networked organisation.
References


### Table 1  Network characteristics

<table>
<thead>
<tr>
<th>Network structure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose of the network</strong></td>
<td>Is it about ‘farming out skills’ or ‘combining different skill sets, i.e. innovation’</td>
</tr>
<tr>
<td></td>
<td>Degree of uniqueness of the focal firm’s skill</td>
</tr>
<tr>
<td></td>
<td>Skill specificity: how different and specialized are the focal firm’s skill sets</td>
</tr>
<tr>
<td><strong>Network membership</strong></td>
<td>Composition of the network</td>
</tr>
<tr>
<td></td>
<td>Who are the members</td>
</tr>
<tr>
<td></td>
<td>Is there a dominant firm that is resource-rich</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network relationships</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social capital: structural dimension</strong></td>
<td>Structural density and structural holes (what is the pattern of relationships)</td>
</tr>
<tr>
<td><strong>Structural capital: cultural dimension</strong></td>
<td>Tie modality: Cooperative or opportunistic, strong or weak, multiplex or single.</td>
</tr>
</tbody>
</table>
Table 2  Network characteristics and employment mode of the two case studies

<table>
<thead>
<tr>
<th>Network structure</th>
<th>AIT</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of the network: Farming out or innovation Degree of uniqueness of skill</td>
<td>Mainly unique – seen as thought leaders with client demands less specified</td>
<td>Some degree of farming out (third party administration) Unique in software development relationship with firms</td>
</tr>
<tr>
<td>Network membership: Composition Who are the members Dominant resource-rich firm</td>
<td>Alliance with large management consultancy Clients tend to be larger than ait Often dominant and resource rich</td>
<td>Spread of clients over several subsections of financial services Links with educational bodies and tries to influence labour market upstream Build relationships with regulating bodies Accreditation of management development</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network relationships</th>
<th>AIT</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social capital - structural dimension: Structural density and structural holes</td>
<td>Structurally dense relationships but only at senior levels in the organization Structural holes at creative levels leave room for innovation Very little work on client sites Structural holes appear upstream in labour market</td>
<td>Structurally dense at all levels—work on client site Multiple contractual relationships (TPA, software development and servicing) Density across all stakeholders—labour market, regulators, accrediting bodies</td>
</tr>
<tr>
<td>Structural capital - cultural dimension: Tie modality: Cooperative or opportunistic, strong or weak, multiple or single.</td>
<td>Strong cooperative links Minimum external pressure on HR practices Strong internal pressure on adoption of HR practices</td>
<td>Strong – varies between cooperative and coercive (especially in TPA) More evidence of external pressure on HR practices Less internal pressure on adoption of HR practices</td>
</tr>
<tr>
<td>Employment mode</td>
<td>Deliberate commitment based HR</td>
<td>Reactive, mixed approach</td>
</tr>
<tr>
<td>Indicators</td>
<td>HR at board level Line management responsibility for implementation of practices (plus monitoring) Training and development Appraisal focused on client service and development High commitment scores Deliberate integration</td>
<td>Split between HR and development — no representation at board level Variation between line management practice of HR Appraisal is client focused Fragmented organization culture Lower commitment scores Little attempt at integration</td>
</tr>
</tbody>
</table>
Table 1: Employee attitudes in Ait and Marlborough Stirling

<table>
<thead>
<tr>
<th>Company</th>
<th>Communication</th>
<th>Commitment</th>
<th>Satisfaction</th>
<th>Relationship with managers</th>
<th>Rewards and recognition</th>
<th>Performance Appraisal</th>
<th>Level of training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ait</td>
<td>Mean</td>
<td>2.3070</td>
<td>2.0439</td>
<td>2.1184</td>
<td>2.0268</td>
<td>2.3377</td>
<td>2.32</td>
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<tr>
<td></td>
<td>Std Dev</td>
<td>.71610</td>
<td>.81713</td>
<td>.64945</td>
<td>.58938</td>
<td>.97529</td>
<td>.973</td>
</tr>
<tr>
<td>Marlborough Stirling</td>
<td>Mean</td>
<td>2.5333</td>
<td>2.5333</td>
<td>2.2533</td>
<td>2.8640</td>
<td>2.6867</td>
<td>2.47</td>
</tr>
<tr>
<td></td>
<td>Std Dev</td>
<td>.62361</td>
<td>.57735</td>
<td>.74087</td>
<td>.80565</td>
<td>.97814</td>
<td>1.172</td>
</tr>
<tr>
<td>Company</td>
<td>Career opportunities</td>
<td>Sense of team working</td>
<td>Work life balance</td>
<td>Involve ment</td>
<td>Open ness</td>
<td>Job securit y</td>
<td>Job challenge</td>
</tr>
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<tr>
<td>Ait</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>2.14</td>
<td>.948</td>
<td>2.24</td>
<td>2.83</td>
<td>1.59</td>
<td>1.87</td>
<td>1.82</td>
</tr>
<tr>
<td>Marlborough Stirling</td>
<td>Mean</td>
<td>Std Dev</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2.44</td>
<td>1.294</td>
<td>2.24</td>
<td>2.83</td>
<td>1.87</td>
<td>2.16</td>
<td>2.21</td>
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</table>

Ait – N=38, Marlborough Stirling – N=25
Scale: 1 - strongly agree/very good/very satisfied, 2 – agree/good/satisfied, 3 – neither agree nor disagree, 4 – disagree/poor/dissatisfied, 5 – strongly disagree/very poor/very dissatisfied
Figure 1 – The network of Ait

P = Project teams with fluid boundaries

Figure 2 – The network of Marlborough Stirling
P = Project teams with solid boundaries
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<tr>
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