CHAPTER 6

6 DISCUSSION

6.1 Introduction

The findings presented in this thesis report on the difficulties of deploying an intranet for knowledge sharing are not atypical of knowledge management implementations in large, distributed, information-intensive organisations. For example, a case study of the knowledge management implementation at Cap Gemini in the Netherlands conducted around the same time as this research revealed similar findings (Huysman & De Wit, 2002, pp. 76-82) (see Table 4 below).

Table 4: Comparison of Cap Gemini Netherlands and KPMG UK knowledge management implementations 2001

	Cap Gemini Netherlands	**KPMG UK**
Intranets	Global (Galaxy); national (CapCom)	Global (KWorld); national (UKnow)
Age of national intranet at time of study	4 years	5 years
Anticipated role of national intranet	Facilitate knowledge sharing	Facilitate knowledge sharing
Primary role of national intranet in practice	Information store	Information store
Control of national intranet content	Decentralised	Decentralised
Search facilities	Poor	Poor
Knowledge Managers appointed from	1997	1998
Staff interest in knowledge sharing	Low	Low
Staff priorities	Clients and revenue	Clients and revenue

Huysman and de Wit (2002), writing from an organisational studies perspective, use this case (amongst others) (1) to identify how companies inadvertently implement sub-optimal knowledge management initiatives and (2) to suggest means of avoiding such practice. Earlier work completed by Orlikowski (1996) "widely believed to be a regional Price Waterhouse office" (Kling, 1996, p. 115) revealed numerous difficulties of introducing new technologies into large, decentralised firms, not least that of changing established work practices related to knowledge sharing. Her results have several parallels with this study. Those managing the process had high expectations that the technology would be adopted by employees as a tool for knowledge sharing. However, the professional staff in the firm were preoccupied with billable client work to earn revenue and reluctant to share information that could be used as a currency for future career success (Orlikowski, 1996). The two case studies examined by Kling and Scacchi in their 1982 work also show how the operation and enhancement of computer implementations are compromised by the complexities of shifting technical and social relationships (Kling & Scacchi, 1982). This is not to say that that the systems considered in these studies are "failures". As is the case with the intranet at KPMG as described in this thesis report, they can be viewed from within and outside the organisations concerned as successful implementations that are both useful and used. Rather, these studies show that it is not uncommon for computer systems to fail to deliver exactly what is expected of them.

As a sociotechnical analysis, this research looks beyond the knowledge-sharing practice within the case study organisation to uncover the underlying *explanations* for such practice, and to determine the role of the intranet in knowledge sharing. In this chapter the research findings are reframed as a set of episodes in the life-span of the UK knowledge management implementation actor-network. Following this analysis the role of the intranet is articulated. This approach permits grounded explanation of the data analysed from the interviews with distributed knowledge management staff, the review of company documentation, and meetings with members of KPMG's UK Knowledge Management Directorate.

The analysis of the knowledge management implementation actor-network draws attention to three episodes in the time frame of KPMG UK's knowledge management implementation. These are summarised in Table 5. Each episode is analysed to make sense of the actions and decision-making that led to its outcomes.

Table 5: Three episodes of the KPMG UK knowledge management implementation

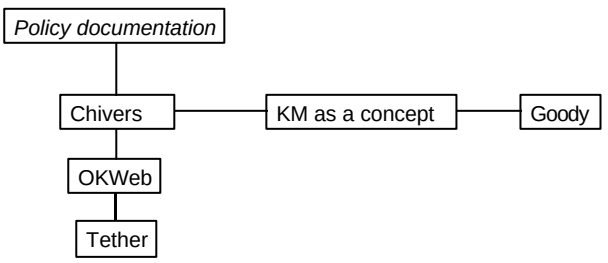
Episode	Outcome	Time period
1	UK intranet adoption	1995-1996
2	Establishment of KMG and distributed knowledge management staff roles	1998
3	Disillusion with the UK knowledge management implementation	2001

6.2 Episodes in the KPMG UK knowledge management implementation actor-network

6.2.1 Episode 1: UK intranet adoption 1995-1996

The topology of the knowledge management implementation actor-network in 1995/6 in shown in Figure 3 below.

Figure 3: Knowledge management implementation actor-network 1995



The main actors in Episode 1 were Chivers, Tether and the UK intranet, which, until 1996, was known as OK-Web. At this time both Chivers and Tether had a high degree of credibility as innovators within the firm. Chivers' standing was based on a successful career in audit, information management and strategic management, and on his position as a partner. It was regarded as highly appropriate that he should lead the knowledge management initiative.

Tether's reputation of academic brilliance combined with technical foresight placed him in a strong position to enrol others to share his vision of a national intranet at a time when the firm did not have a coherent view of its technological future. The intranet's role as actor in this period demonstrates the most significant power shift. Its role began as little more than an idea of Tether's in 1995 and soon developed into a personal project of a small group of interested staff. By the end of this episode in 1996 it had become the cornerstone of the knowledge management implementation at KPMG UK, and held this role throughout the whole period of investigation for this research through to the end of 2001.

In 1995/1996, Chivers and Tether were able to build up internal commitment to resource their ideas through convincing senior management of the potential offered by a knowledge management strategy based around intranet development. Their key problematisation argument took the form of creating expectations about the performance and utility of the future technologies as tools for increasing KPMG UK's profitability. This was expressed formally in the *Intranet trial and conclusions* document (KPMG, 1996, June). The work that led to the publication of this manifesto also served to mobilise interest in intranet development in three business areas through the active participation of their staff in the trial of the prototype system. At this point the knowledge management implementation was a small, organic, scalable project that sought to attend to some real problems.

Although the concepts of knowledge management and intranet were not universally well-known at this time, some staff with related interests, such as Goody as Head of Research, clearly recognised the benefit of becoming associated with the local developments being led by Chivers. She actively sought a position within the growing network. Her enrolment was made visible in the efforts to promote commercial online services to the desktop via the intranet. This illustrates how an individual's career interests can impact the development of a technical resource (Kling & Scacchi, 1982, p. 65). Goody's early integration into the work of the new knowledge management function facilitated her emergence as a key actor in the knowledge management implementation actor-network at later stages of its development. Just as Goody sought gains from the network, the network was advantaged in securing Goody as an ally. She worked closely with a group of staff who, following her lead, were keen supporters of an implementation that had the potential to enhance the use of information services in the firm, and the reputation of those who delivered such services. These staff may also have envisaged new career opportunities in knowledge management and/or intranet development. The recruitment of Goody was thus a quick win for widening the network's membership base.

Even at this early stage, where optimism regarding the knowledge management implementation was high, the key actors were forced to make compromises to their plans. These were made either to guarantee future support for the implementation, or as a result of the changes to the composition of the network based around the implementation. For example, the original scope of Chivers' new knowledge management function in 1995 had been to investigate collaborative tools for both internal processes and for work with clients, indicating its potential role as a standardised form boundary object (Star & Griesemer, 1989, p. 411). Tether's contribution was

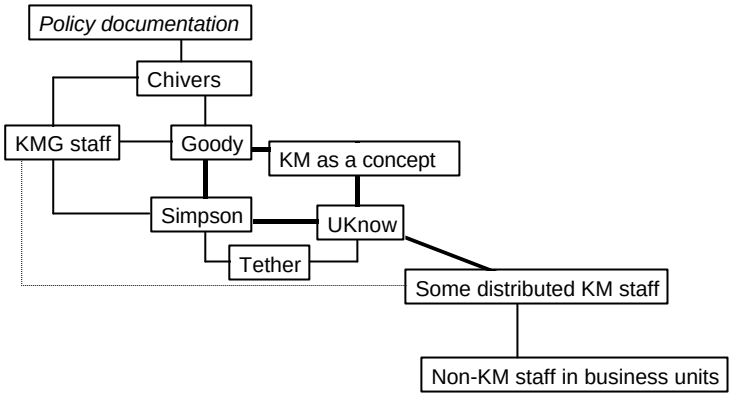
to explore how an intranet could support these initiatives. By 1996, however, the codification of information had become a priority, and the intranet was set to become the artefactual embodiment of knowledge management developments at the firm. Several factors account for this shift of emphasis: Tether's dominant role, his line of report to the partner responsible for IT, ICT's ownership of web content development, the results of the intranet trial, and the recruitment to the knowledge management implementation actor-network of codification experts who worked alongside Goody.

The progress in the knowledge management implementation over this short period demonstrates that "artefacts typically emerge through a complex process of action and interaction between… heterogeneous players, rather than being determined by any one player (Williams, 1997, p. 3). Although Tether might be revered as the father of the intranet at KPMG, it is clear that he cannot be treated as the sole explanatory concept of its technological development. Its nature was determined by a number of social factors in its early history. This analysis provides further explanation why the intranet became a powerful actor in the knowledge management implementation at KPMG. By 1996 several parties had staked an interest in its future, and its role at the core of the knowledge management implementation reached a level of stability that was to be maintained throughout the period of this research. In contrast, the concept of knowledge management was a much weaker player. The decision to underpin the knowledge management implementation with the intranet meant that any knowledge management developments were dependent on the health of the intranet. It is also evident that the reach of knowledge management was confined to a smaller group of players within the network. At this time knowledge management "belonged" to Chivers' new function and had attracted some support from some other parties such as Goody, but it had not touched the consciousness of an adequate number of players to generate support in its own right.

6.2.2 Episode 2: Establishment of the UK Knowledge Management Group (1998)

Figure 4 below presents a representation of the knowledge management implementation actor-network in 1998.

Figure 4: Knowledge management implementation actor-network 1998



The building of the new KMG and the appointment of knowledge management staff to the business units in 1998 aligned a more diverse set of actors and interests than those involved in Episode 1 into new relationships and networks around the knowledge management implementation. As the key actors involved in recruitment in Episode 2, Goody, Simpson and the intranet (now known as UKnow) translated the concerns of those enrolled so that they matched the interests of the network joined. All three main actors enjoyed significant political influence in this period. Goody's career was in the ascendant. Her power-base extended as the Information Resources staff combined with the existing research team to form the Research and Information Services group. Her promotion gave her more freedom for internal networking within the firm across established corporate networks, thus presenting further opportunities for building more extensive alliances for the promotion of the knowledge management implementation. Simpson was hired to head and manage the UKnow team. He was able to capitalise on his standing as an external expert brought in to develop this new role. UKnow continued to command high status in the knowledge management implementation actor-network on the basis of its position as the privileged artefact of the knowledge management implementation. Its credibility was also strengthened by another actor set: increased intranet usage statistics. Simpson benefited with his direct association with the intranet and the future potential anticipated from its full deployment.

Knowledge management as a concept established greater importance in the actor-network in this period. By the end of 1998 the term "knowledge management" was no longer a minor player in the firm's IT operations. There was now an enlarged knowledge management function headed by a Partner for Knowledge Management who reported directly to the Chief Operating Officer for the UK firm. Operational changes, such as the switch in responsibility for web content development from ICT to the UKnow team, indicated that knowledge management required the specialist attention of content experts, rather than mere technical competence of generalists. Here it was recognised that computer-based service provision is specialised (Kling & Scacchi, 1982, pp. 26-29).

Although Chivers maintained his position as Chief Knowledge Officer in 1998, and directed the changes that led to the formation of the new KMG and the heightened profile of knowledge management, it is suspected that his influence in the day-to-day operations of the network diminished as he delegated activity to the heads of the new sections. It is clear, however, that the power of the other key actor of Episode 1 diminished significantly. By this time the intranet could no longer be Tether's (or any single individual's) personal project. Tether's withdrawal as the main driver of intranet developments is indicated in the redesignation of his role as Information Architect towards the end of 1998. It was Simpson, as the Intranet Manager, who took control of UKnow from this point onwards. In the hands of a different team it was inevitable that the original intranet implementation would be adapted and reinvented. As Kling and Scacchi (1982) note: "computer systems are dynamic, rather than fixed entities" (p. 65).

There was significant enrolment to the actor-network surrounding the knowledge management implementation in 1998. First, membership of KMG grew both through staff transfers into the group from other parts of the business, and as a result of external recruitment. Second, efforts were made to act on the recommendations of the *Knowledge centres briefing pack* (UK Knowledge Management Group, 1998, October) to ensure that there was staffing for knowledge management throughout the functions and lines of business. Once in post these distributed staff were expected to evangelise knowledge management across the KPMG UK. If successful, the drive would extend the strength of the knowledge management implementation actor-network from the centre to the extremities of the UK firm.

Those working on alliance-building persuaded potential recruits to join the network on the basis of more immediate benefits than those suggested in Episode 1. For example, it was argued that in supporting UKnow as a centralised resource the business would cut intranet development costs and speed the migration of material previously held in multiple formats to a single platform. In addition, the *Knowledge centres briefing pack* (UK Knowledge Management Group, 1998, October) presented proposed a number of benefits to the creation of knowledge centres within the firm, the focus of these being operational, short-term wins such as efficiency savings. The briefing pack might also be considered as a translation tool, as might the protocols devised by the UKnow team, in that they made it possible for those recruited to practical roles within the actor-network to put into action the plans for both the knowledge management and intranet implementations.

Campaigns to recruit to the actor-network were strengthened by the increased profile of knowledge management in general. It was now known as both a priority for the firm, as argued by Chivers and reported in the trade press (for example, Black, 1998, June 4), and for its clients, as evident in the work towards the publication of the KPMG *Knowledge management research report* (KPMG, 1999). Knowledge management was also receiving interest within the business press, for example, as a consequence of the publication of key titles on intellectual capital in 1997 (Edvinsson, 1997; Edvinsson & Malone, 1997; Sveiby, 1997). This attention enhanced the significance and status of knowledge management within the eyes of KPMG employees and provided further incentive for individuals and groups to become associated with the knowledge

management implementation within the firm. The allure was particularly strong to those who eventually took on distributed knowledge management staff positions. With members of KMG, they believed that their roles would be to drive innovation to match the needs of a market that they were helping to construct in the business units. Such a conviction amongst these "appropriation intermediaries", who formed a bridge between the development and use of systems (Williams, 2000, p. 257), strengthened the potential longevity of the implementation (McLoughlin, 1999, p. 95).

In this period of optimism a set of heterogeneous actors appears to have been successfully converged. The diverse elements were strongly co-ordinated through multiple, and co-dependant, ties in which the actors had high hopes for successful future working relationships. The knowledge management implementation actor-network achieved a strong degree of stability, particularly in the relationships forged between KMG and the distributed knowledge management staff where "untying" their bonds would be detrimental to both parties, as well as to the jointly owned knowledge management implementation. With an increased budget allocation for KMG in 1999/2000 (Chivers, 2001, June), and plans for further recruitment of knowledge management staff, the medium-term outlook for the knowledge management implementation and the network that had formed around it appeared secure.

However, the failure to address some issues, as well as a number compromises made in this period, were later to undermine the stability of the actor-network associated with the knowledge management implementation. First it is worth examining the reach of the network. It is clear that the key actors had been successful in converting their own contacts to the cause of the knowledge management implementation, for example in the evidence of the conviction of distributed knowledge management staff of knowledge management's value and the provision of translation tools such as the documented protocols. However, at its extremes, the actor-network was highly reliant on a number of staff whose primary roles were defined by their priorities of competing networks based around their home business units, rather than KMG, to continue the recruitment drive. As the ambitions for knowledge management and the intranet were scaled up, outsiders to the knowledge management implementation actor-network were likely to perceive the work of knowledge management staff as imposing from a bureaucratic centre a rigid set of new rules that did not take into account everyday working practices. For example, as far as knowledge sharing was concerned, there appeared to be the expectation that the intranet implementation was a replacement for existing social behaviour. As actors with a "bit-part" in the knowledge management implementation, the distributed knowledge management staff, particularly the Presence Producers, the majority of whom carried out their roles part-time, lacked the political clout of key players such Chivers, Goody and Simpson, and were thus handicapped in efforts to appropriate support for the knowledge management role. This can be seen in the provision of translation tools: KMG had the resources to create translation tools for the distributed knowledge management staff, but there is no evidence of such provision, or plans for provision, for end-users at this stage of the implementation. In an environment where KMG could not even insist that the business units employ knowledge

management staff, it was not in the position to direct the work of those holding knowledge management roles for which it had no management responsibility. The failure of KMG to insist that distributed knowledge management staff report to the central knowledge management function, rather than to the business units, was a compromise that drove a fault line through the knowledge management implementation actor-network and, as will be seen below, later proved to be a significant threat to its stability.

The deployment of a problematisation strategy to persuade potential new recruits to join the knowledge management implementation actor-network primarily on the basis of immediate operational benefits, as opposed to the long-term gains of knowledge management that went beyond knowledge reuse, highlights the dilemma faced by existing members of the actor-network. They recognised that it was difficult to construct convincing knowledge management scenarios, yet needed to bolster the network's membership by some means. It was an easy compromise to refer to more obvious short-term gains, such as those related to information provision, hence the confusion over information management and knowledge management as discussed in Chapters 4 and 5. This way others *were* recruited to the actor-network, and thus added to the potential for its longevity. However, their understanding of knowledge management was influenced by the nature of the arguments that persuaded them to join the network. The lack of alignment of this understanding with the original intention of those developing knowledge management initiatives in the firm shifted the joint perspective of the actor-network membership and contributed to future difficulties over what knowledge management represented to the firm.

Pragmatic decisions related to the intranet taken at the time that KMG was formed had the potential to weaken the implementation as a whole. Simpson's approach to intranet development, which began with the migration of existing resources to the intranet platform in 1998 confirmed the continuation of the codification strategy. His remit when first appointed – the tailoring of existing resources to the intranet - once again privileged the artefact as actor, in this case, over the end-users of the intranet who had no input into systems design, nor participated in any activity in which they could articulate their need for content or tools. Similarly, the decision to delegate the management of intranet content to the distributed knowledge management staff in the business units may have been to the advantage of KMG in reducing its workload, as well as help distributed knowledge management staff in attempts to enhance their status. However, allowing the growth of a loosely regulated federation of intranet sites was bound to have implications for quality control, especially when the majority of those in the business units did not take responsibility for this.

The actor-network centred around the UK knowledge management implementation was also subject to elements of its macrostructure (Kling & Scacchi, 1982, p. 16). Of significant influence here were knowledge management and intranet developments in Boston. The Office of the Global Chief Knowledge Officer may have been an unwilling actor in the UK knowledge management implementation network, yet the UK implementation was not immune to the effects of actions taken in Boston. The political power of UKnow, some of which derived from the relay of optimistic messages which were not entirely in line with the truth, was such that it could resist

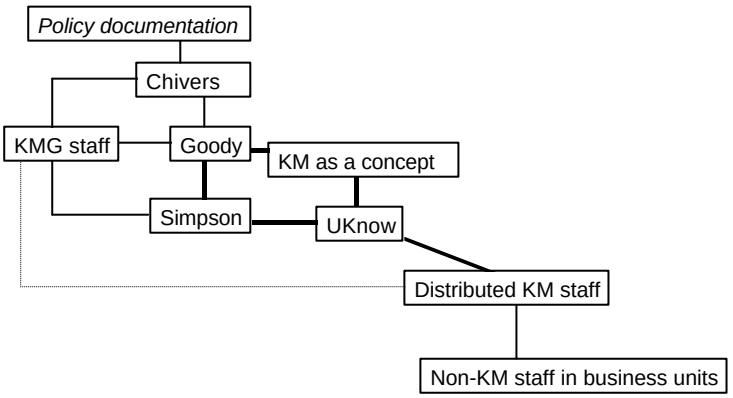
the calls to be closed down in 1998, but the potential for it to be unwittingly associated with KWorld was damaging to its future. This demonstrates how macrostructural patterns influence local computing (Kling & Scacchi, 1982, pp. 32-36).

By 1998 the actor-network that centred around the UK knowledge management implementation had strengthened with a number of new actors, including knowledge management as a concept, playing significant roles. In this time of expansion the outlook for the actor-network was positive. However, concessions made in the process of reaching this stage of development had the potential to endanger the stability of the actor-network in the future.

6.2.3 Episode 3: Disillusion with the UK knowledge management implementation (2001)

The composition of the actor-network in 2001 is given in Figure 5 below. The actor "Policy documentation" included by this point intranet usage statistics, introduced as a component of the monthly knowledge management reports for KMG from July 2000 onwards.

Figure 5: Knowledge management implementation actor-network 2001



Episode 3 is concerned with the state of the knowledge management implementation actor-network in 2001. By this time it was well-established. The main actor group comprised an enlarged KMG headed by Chivers and distributed knowledge management staff working across the UK business units, with UKnow and the concept of knowledge management as the most "visible" inanimate members. End-users of UKnow also emerged as a set of constituents in the actor-network. Despite its enlarged size, however, it is evident from contemporary internal company documentation and interview data that there was a feeling disillusion with the knowledge management implementation within the UK firm amongst many of the actors recruited to its cause. By Spring 2001 the distributed knowledge management staff, on whom the co-option of network members from the business units depended heavily, were most obviously concerned about the lack of support of the knowledge management implementation. To their frustration knowledge management was not embedded in the firm to the degree anticipated. This is clear in the failure to persuade a critical mass to adopt UKnow, the main tool

of the knowledge management implementation. An examination of interactions between members of the knowledge management implementation actor-network in this period help illuminate and explain the problems encountered in Episode 3.

At this point in the implementation's history a number of power shifts had altered the relationships between the key players in the network. Goody and Simpson had widened their power-base within KMG through the execution of the plans made in 1998. As Director of UK Knowledge Management Operations, Goody now had management responsibility for thirty-eight of the forty-five staff based in KMG. With Chivers serving largely as the figurehead of the group, it was Goody who effectively led the knowledge management function in the UK firm. Simpson had built up a team of eight to take care of UKnow. His position was no longer fettered by the presence of staff who had worked under the earlier intranet regime, not least Tether, the acknowledged "father" of the intranet, who had departed the previous year. Goody and Simpson therefore had a strong position of influence within the knowledge management function in the UK.

In contrast to the growing fortunes of Goody and Simpson, UKnow's position in the actor-network was in jeopardy in 2001. Previously it had enjoyed special status, and associated investment, as the "physical" representation of the evolving knowledge management implementation. Good internal public relations ensured that it continued to be acknowledged until as late as July 2001 knowledge management function as a model of good practice by outsiders. However, commitment to UKnow actually weakened locally in 2001 during the period of uncertainty over the future of KWorld and the national practice intranets, especially when it was suggested that UKnow would be subsumed by KWorld. There was reluctance to invest in developments that might later have to be abandoned, and the withholding of infrastructural support impoverished the quality of the service that could be provided. KWorld cast a further shadow over UKnow: end-user frustration at the former, for example with the CVs database, was linked with the latter, even though the two were separate systems. UKnow's supposed raison d'être as a facilitator of knowledge sharing was also losing relevance. Aspects of the UK intranet that were most popular with end-users hinted at their actor power in adapting and reinventing technology, in this case promoting UKnow's usefulness as an information store, rather than a genuine tool of knowledge sharing. It had been adopted as an agent of the subversive knowledge economy at KPMG in that it was employed as a *route to* interpersonal knowledge sharing contact as a pointer tool, rather than as the platform on which knowledge was shared. These factors provide illustration of how the adoption of computerised systems is selective (Kling & Scacchi, 1982, pp. 39-40) and a system evolves through fitting and packaging (Kling & Scacchi, 1982, pp. 36-38). A further demonstration of how UKnow was now subject to the actions of the players in the network, as opposed to the favoured driver of the knowledge management implementation determining its own future, were the changes in its "shape". These were brought about as a result of distributed knowledge management staff working in new actor-networks to merge multiple intranet sites. It can be seen, then, that UKnow's former position as a leading player within the knowledge management implementation actor-network

was being eroded. This was due to the overriding influence of KWorld, and actions of both end-users and the distributed knowledge management staff. These factors had the potential to bring to a halt the enhanced standing enjoyed by those most closely associated with leading the intranet and knowledge management developments in the UK firm, including Simpson and Goody. Similarly, as the supporting infrastructure of the UK firm's knowledge management activity, damage to UKnow was likely to harm knowledge management as a concept's future as a strong player in the actor-network.

On the basis of evidence collected in the interviews with the distributed knowledge management staff, it is clear that by 2001 the documents related to the knowledge management implementation were largely ignored. Indeed, those responsible for implementing the firm's knowledge management policy at the level of the distributed business units in their interviews for this research made no mention of the documentation other than the monthly intranet usage statistics reports. Equally, there is evidence in the archive of company documentation that plans were formulated in meetings without reference to existing formal articulations of policy, and were not subsequently disseminated by any formal means to those responsible for policy implementation in the business units. The lack of acknowledgement by the distributed knowledge management staff of the documents as actors in the knowledge management implementation points to the unravelling of ties between the KMG (as the originator of knowledge management policy) and the business units. The prominence of the usage statistics as a tool to demonstrate the value of UKnow in the knowledge management implementation says more about the relative political power of this single set of documents, than the worth of the statistics themselves. Indeed, it has been shown that the distributed knowledge management staff had strong reservations regarding the usefulness of documents entitled *UK Knowledge Management monthly report*, the purpose of which was solely to present league tables of intranet activity. Some appeared to be prepared to tolerate this regime of truth for the sake of protecting the knowledge management implementation actor-network as a whole.

Another actor set experienced a reduction in power in this period: the distributed knowledge management staff. By 2001, a large number of them had been successfully enrolled to roles to support the cause of the knowledge management implementation across the business. Within the network these staff had conviction in their purpose of realising the centre's knowledge management strategy (as they perceived it). However, in the wider context, the optimism associated with these appointments was beginning to wane, most notably due to failed attempts to widen the knowledge management implementation actor-network by eliciting the support of colleagues in the business units. The plans to carry the recruitment drive into the business units appeared to unwind when left in the hands of the distributed knowledge management staff. Whilst there were a couple of significant enrolment successes, for example, Tax's initiatives to encourage knowledge sharing between students and managers, the dominant message from the evidence examined for this research is of frustration at the failure to garner interest and support. This led to expressions of anxiety over the role definitions. The distributed knowledge management staff exhibited confusion regarding their network power. (It is worth noting that the

concerns of the Presence Producers, rather than the Knowledge Managers, were addressed first with the work on the competency framework and skills matrix. This reflects the status differences between the two inanimate actors in the network: UKnow and knowledge management as a concept.) The connection of the distributed knowledge management staff with KMG no longer implied professional "glamour" as in the early days of KPMG's interest in knowledge management. Rather, it forecast problems within the business units where questions might be raised about the relevance of knowledge management roles. Added to this, by 2001 the links between KMG and the distributed knowledge management were loosening as (1) the distributed knowledge management staff settled into the boxed environments of their business units and (2) some of them fractured the larger knowledge management implementation actor-network to create smaller knowledge management staff groupings. As a result of the weakening of the ties between the knowledge management staff in the centre and those spread across the firm, knowledge management policy appeared to be ignored or reinvented in the individual business units. Meanwhile, messages on the success of the knowledge management implementation and needs for further facilities were not always being fed back to the centre effectively. Factors that contributed to the repositioning of the distributed knowledge management staff included their status in the firm, outcomes of earlier problematisation efforts and a failure to construct the user. Each of these is discussed in further detail below.

Two perceptions of the distributed knowledge management role contributed to the low status of the staff who held such positions, and thus weakened their power to recruit new members to the knowledge management implementation actor-network. First, the majority of distributed knowledge management staff had low visibility across the firm as a whole. The variety (and in some cases confusion over) their job titles and roles contributed to this, as well as made it difficult for the distributed knowledge management staff to mobilise as a single unit. Their opportunities to network under the flag of knowledge management were mainly at a low level with others who did not have extensive contact networks, for example new hires at induction training events. The four Knowledge Managers interviewed who were technically the best networked did not capitalise on their standing to raise the profile of knowledge management, but rather appeared to do the reverse in using knowledge management for their personal career advantage. Three of the four were also quite isolated from the other distributed knowledge management staff, and therefore were unable to share ideas with the rest on how to raise the profile of the implementation across the firm, for example by sharing contacts. (In contrast, in some cases the *local* visibility of the distributed knowledge management staff was too high. This created the problem of colleagues absolving their responsibility for knowledge management practice in the belief that this was the role of members of the local knowledge management team.) The second factor that assigned the distributed knowledge management staff low status was the low level of work in which many of them were involved. For example, they were all classed as K-staff, the Presence Producer role was largely administrative, and some of the Knowledge Managers found themselves covering duties that in other units were assigned to Presence Producers. Interview data pointed to the distributed knowledge management staff deliberately avoiding higher status responsibilities, particularly in relation to content ownership

and editorial control. Given the level of status assigned to them it is not surprising that the distributed knowledge management staff felt inhibited their efforts in promoting the knowledge management implementation in the firm.

The reason why the status of those charged with delivering the knowledge management implementation emerged as a significant factor in this research, and more strongly than in previous accounts of similar studies, merits further discussion. This can be explained by one of two reasons. The first relates to a number of factors of the environment in which the distributed knowledge management staff worked. First, the obvious professional/non-professional divide favoured activities conducted by the client-facing staff. In addition, information and knowledge were treated as by-products of the firm's activities. Thus anyone associated with either or both were of less importance that those involved in the real business of earning revenue for the firm: employees in a knowledge management role lacked actor power relative to the favoured "professional" colleagues. Equally, the broader context of the organisation was important. KPMG is a traditional well-established firm with a structured hierarchy, employing a large number of individuals trained in a traditional, well-established, profession (accountancy). Respect of status is assumed in such environments. However, although these factors explain why status was an important determinant of the success of the knowledge management implementation at KPMG UK, they do not explain why the issue of status is not prominent in studies of knowledge management conducted in similar environments. A more persuasive argument is that this factor revealed itself because the methods employed in the research allowed it to do so. This assertion is explored further in Chapter 7 in the evaluation of the research design for this study.

The actor-network analysis of Episode 3 indicates that the difficulties encountered in the knowledge management implementation at this stage can be explained in part through an examination of the earlier problematisation attempts led by the main players. This takes into account the offerings that the knowledge management implementation proposed to the business at large. Previous recruitment tools, such as the detail presented in the *Knowledge centres briefing pack* (UK Knowledge Management Group, 1998, October), had presented to the business scenarios which had implied that knowledge management would allow KPMG UK to make substantial commercial gains that could not be achieved otherwise. However, the later reality of the implementation did not articulate with the anticipated benefit. For example, Chivers' initial arguments to resource a knowledge management function in 1995 had been based around investigating tools for collaborative working, appeared to have been "forgotten" by 1998 (UK Knowledge Management Group, 1998, October). By 2001 the artefact of the implementation was largely perceived as a system for storing and retrieving generic information, or a set of electronic yellow pages. Equally, KMG had not found a mechanism to demonstrate that the implementation had increased KPMG UK's profitability. Increased intranet usage statistics, although interesting to some (yet discredited by some knowledge management staff, even though they were prepared to use them for the political purpose of showing the "value" of their work to the firm), were not indicative of returns on investment. As early promise had not

been delivered, the knowledge management implementation could easily be viewed as an over-hyped management fad. Evidence such as this hampered recruitment to the cause of knowledge management and UKnow from 2001 onwards. It also led those with knowledge management interests to operate in an unorthodox manner in an attempt to generate further interest in knowledge management or demonstrate that they were working to meet the needs of the users that they served. This explains the decision on sample selection for the proposed survey mentioned in Chapter 4 and the continued support for the inadequate means of reporting "knowledge management" activity through the intranet usage statistics.

The power of established members to convince others of the benefits of joining the knowledge management implementation actor-network - particularly that of the distributed knowledge management staff attempting to attract engagement from their colleagues in the business units - was also hindered by a lack of attention to end-users. As far as addressing the needs of the user-base was concerned, it was a case of too little, too late. It was not until summer 2001 that any real efforts were made to address end-users' expectations of the knowledge management implementation. One of the reasons for this was political expedience. It is suggested that this was because the introduction of facilities that could be employed with clients would be a public relations win for those associated with UKnow. Another factor that contributed to the reluctance to invite opinion on the knowledge management implementation was that any information solicited had the potential to derail established plans. In minimising this risk, however, another emerged. For example, it would appear that those with firm attachment to the knowledge management implementation actor-network, especially those in KMG and surrounded by others with similar levels of commitment, made incorrect assumptions about the degree of interest in knowledge management and intranet developments that already existed, and could be further enhanced, within the UK firm. Already convinced of the utility of knowledge management practice and UKnow, those at the centre of the actor-network underestimated the work ahead for distributed knowledge management staff in carrying this conviction into the business units. Even where user needs were taken into account in the planning process, there is a lack of evidence of their being revisited on a regular basis. That user requirements are constructed, building on earlier templates and "evolving through the use of new artefacts" (Williams, 1997, p. 8) was ignored. As a result, knowledge management "solutions" were imposed on the user-base in that resource design was determined by designers, and information content requirements were established by knowledge management staff in a systems-led implementation. Opportunities to "construct the user" through observing and acting upon user responses to supplier offerings (Williams, 1997, p. 17), or recognise them as ICT "designers in use" in their role as social actors (Lamb & Kling, 2002, para 92) were lost. The label of "too little, too late" applies equally to training initiatives for engaging support for the knowledge management implementation. Prior to 2001 little attention had been paid to training end-users in the business units in knowledge management techniques or the use of UKnow. Efforts mainly focused on new-starts, and prioritised UKnow over knowledge management. The main route for established staff in the business units to be recruited to the knowledge management implementation network was on their own initiative, rather than through any programme devised by their local

knowledge management contacts or a member of KMG. By April 2001 the need for a training campaign to address these issues was identified. With the lack to attention to user needs, and inadequate training to this point, it is not surprising that end-users were not motivated to join the knowledge management implementation actor-network to become good citizens of knowledge management and UKnow. The problem facing knowledge management staff in 2001, especially those based in the remote business units, was how to build up commitment in an environment that was possibly damaged beyond repair.

For the distributed knowledge management staff their work in enrolling members to the knowledge management implementation actor-network was also obstructed by competing networks. The priority of the business units was income generation through client work - and not knowledge management. They did not regard themselves primarily as end-users of computer systems (Lamb & Kling, 2002, para 14). Individuals expected to be attached primarily to the networks of their business units, rather than to one that "belonged" to a function such as KMG. It was also difficult for the distributed knowledge management staff to devise compelling arguments to encourage interest in the knowledge management implementation when it appeared that this would necessitate a change in operations to fit around an artefact, especially at the expense of disrupting revenue-generating client work. The argument that, at a minimum, UKnow was a worthwhile cause in its role as an information resource was of minor interest to well-networked individuals who had other strategies for obtaining information and knowledge. The distributed knowledge management staff's "official" position within the business units, combined with an operational alignment with KMG, had been intended to stretch the knowledge management implementation from the centre out to the business. The analysis given here would suggest that this arrangement was flawed, due to tensions that built up between the divergent networks in which the distributed knowledge management staff held memberships. Consideration of agendas for training efforts provides an illustration of the resulting expectation gaps. While Nevin was encouraging distributed knowledge management staff to focus training on end-user best practice, actual training delivery prioritised the promotion of services offered by knowledge management staff and skills in the use of tools. (This also shows how self-preservation was high on the agenda of knowledge management staff, with UKnow again dominating the knowledge management implementation actor-network's activities.) Attempts had been made to encourage distributed knowledge management staff to play a more active role in their home units, but some felt more comfortable discussing knowledge management issues when grouped together alongside their knowledge management colleagues. This inhibited the efforts to spread the word of benefits of the knowledge management implementation throughout the UK firm.

The weak position of the distributed knowledge management staff as evangelists of the knowledge management implementation is a ramification of the earlier compromise to have their line of report feed into the business units, rather than into KMG. Equally, this compromise bounded the power of the stronger members of the knowledge management implementation actor-network in that they were expected to delegate responsibility for knowledge management

and UKnow, including recruitment to the cause, to the weaker distributed staff. Due to the staffing arrangement, even though Goody and Simpson were powerful members of the knowledge management implementation actor-network as a whole, and eminent in KMG, they had even less influence than the distributed knowledge management staff when it came to dealings with the business units. Their influence, in effect, was only understood locally: it began and ended within KMG. A further unwelcome outcome of distributed knowledge management staff selection in the business units was the quality of personnel employed. Inappropriate appointments diluted the strength of the actor-network as a whole, as did the appearance of the non-contributing "extras" at Knowledge Managers meeting. To the detriment of the knowledge management implementation network, those who recognised this problem were forced to live with the compromise.

Similarly, by 2001 UKnow was feeling the negative effects of earlier decisions. For example, efforts at persuading end-users to try out new improved intranet tools were hindered by perceptions gelled in the past as a consequence of contact with less than ideal prototypes; the compromise of stripping confidential data from intranet content weakened its usefulness. Ironically, slow development in some areas could be attributed to past successes. For example, the earlier enthusiastic uptake of Lotus Notes databases hindered interest in more sophisticated intranet tools for collaborative working. This illustrates how "earlier technological choices constrain later technological decision-making. These 'path-dependencies' can result in 'lock-in' to established solutions and standards" (Williams, 1997, p. 3). Despite international accolades that might indicate otherwise, UKnow's stability was fixed as a somewhat under-used information store serving a largely local user group. The gap between original design intentions and the social application of the technology accounts for this adopted usage. The practical problems of interacting with the resources support Kling and Scacchi's contention that the level of access to a system determines the relationship between it and its intended user base (Kling & Scacchi, 1982, p. 65).

It can be seen that in 2001 the composition of the actor-network based around KPMG UK's knowledge management implementation had altered due to shifts in the power of actors, efforts to enlarge the network's constituency and the influence of competing networks. The concept of knowledge management within the firm was still not fully understood. Knowledge management as implemented at KPMG, for example with the distributed knowledge management staff's training efforts focussed on information handling tools, could be more readily identified as *information* management. Employees, including members of the distributed knowledge management staff, were liable to show their lack of understanding of knowledge management as a concept in mistakenly equating it with the intranet. Confirmation of the tarnishing of knowledge management's 1998 "glamour" emanated from the highest levels in the UK firm, even as the knowledge management staff struggled to attract high level knowledge management sponsorship. The supposed "ownership" of knowledge management by KMG, the distributed knowledge management staff and, it would appear, anyone else who could be recruited to the knowledge management implementation network could be interpreted

generously as an indication of a form of "embeddedness". In practice it was championed by the few and ignored by the majority, and there was even the suggestion amongst the distributed knowledge management staff that the time had come to get rid of the term "knowledge management".

The concerted campaign to attract knowledge management buy-in proposed in April 2001 attempted to address the issue of inadequate support of the knowledge management implementation. It was based on alliance building with high profile members to whom further recruitment could be delegated. It was hoped that interest in the knowledge management implementation would grow, particularly in UKnow, as it became obvious that there was a critical mass of users. These "Network externalities are particularly important… a technology may not be attractive to a potential user if sufficient numbers of other users cannot be convinced to sign up" (Williams, 1997, p. 15). In practice, it can be seen that the problematisation of the needs of others as a means of co-opting support to the knowledge management implementation network was executed at two levels in the period covered by Episode 3. At the farthest reaches of the network the distributed knowledge management staff's main campaign was to attract top level sponsorship to raise the profile of knowledge management in the firm through the identification of knowledge champions in the business units. The sales message to be broadcast was that knowledge management was a key process for winning business. Chivers' lobbying efforts differed in that they were aimed at potential converts to the cause including those who were beyond the "natural" constituency of UK KMG. They referred to the benefits of knowledge management in more abstract terms. Also of interest in Chivers' work is the evidence of his arguing the case of KMG alongside that of the knowledge management implementation. Although the rationale behind this two-pronged attack appeared sound, expectations for its success were tempered by the knowledge of previous failure, as well as the suspicion that it was executed too late in an environment that was suffering the effects of previous mistakes. It was not possible to compensate for inadequate pre-installation planning which failed to recognise that "organizational and social changes are inseparable from… new technology implementation" (Fleck & Howells, 2001, p. 528). In this context Chivers' focus on the value of KMG, an unconscious attempt to protect his position as well as that of his immediate colleagues, may well have been apposite.

6.2.4 The contribution of KWorld 2001

An examination of the fortunes of KWorld in 2001, as seen through the eyes of the UK knowledge management staff, provides a footnote to the analysis of the UK knowledge management implementation. In a short six month period the ambitious plans for the global intranet had been whittled down to portal compromise with country-specific points of entry. Furthermore, eight months later KWorld's "home", the knowledge management function in Boston, was actually closed down. It can be argued that these outcomes resulted from a politically naïve strategy that ignored the social necessities that should accompany the introduction of a technology into an organisation.

From the outset KWorld alienated its potential allies in dismissing the more advanced work already accomplished by the national practices. Later complaints that the firm's national representatives would not liaise with global knowledge management staff, and the absence of assistance when KWorld came under attack, were a consequence of the previous "relationship" where global knowledge management staff had refused to liaise with their overseas counterparts. Essentially KWorld was poor at enrolling support and ignored the power of what were perceived to be "small" local networks. This encouraged others with strong national knowledge management implementation actor-networks, such as the UK, to compete rather than to collaborate for mutual benefit. Thus marginalised, KWorld did not have the strength to survive as a fully-fledged intranet in its own right.

It has already been noted that the UK knowledge management implementation suffered as a result of trade-offs made in order to win backing for plans. This illustrates Kling and Scacchi's contention that "the efficiency of a particular technique depends not only on its own performance… but also on its surrounding technology" (1982, pp. 37-38). At least, however, its physical manifestation in the form in UKnow endured. Intolerant of compromise, those managing the KWorld project focussed too narrowly on a particular technological path, ignoring existing set-ups. The refusal to accommodate non-English language material, and difficulties in reaching agreement with the range of national practices on the exchange of information, show a lack of appreciation of how applications need to be tailored to particular social contexts, and that computer-based service provision is specialised (Kling & Scacchi, 1982, p. 26-29). Equally, there was no recognition of the local nature of knowledge sharing, a conclusion that is evident in the knowledge management literature (see Chapter 2). Had there been recognition that technologies are not universal (Williams, 1997, p. 8) and the wishes of those beyond the US accommodated in the system's design, KWorld may have endured in intranet form, rather than as a simple portal.

It is evident that KWorld as originally conceived did not stabilise. It was disassembled largely as a result of finding itself positioned less advantageously than other parties interested in knowledge management and intranet developments at KPMG. On the basis of the evidence in the UK company archive and the interviews with distributed knowledge management staff, the redesignation of KWorld to the status of portal in 2001 was largely of its own making.

6.3 Conclusions on the analysis of the knowledge management implementation actor-network

The deployment of actor-network theory reframes the knowledge management implementation as the output of a set of social choices of a number of key players, and as a configuration of heterogeneous technical and social components. It shows that UKnow was not presented to the firm as a complete, "finished" solution, and this accounts for its shifting role in knowledge sharing. The social analysis of the three key episodes in the life-time of the knowledge management implementation between 1995 and 2001, as well as the summary comments on KWorld, show that in a precarious and volatile environment the actors did not exist in isolation.

The knowledge management implementation actor-network as a collective required constant support and maintenance. It needed to guard against swings in competing networks, or in the unwelcome operations of significant players, that could endanger its future health. Law explains that "a relatively stable network is one embodied in and performed by a range of durable materials" (Law, 1992, para 29). The degradation in the durability of the actors seriously undermined the stability of the knowledge management implementation actor-network by 2001. The most obvious case of low durability is that of the knowledge management policy documentation. For example, it was not mentioned once by distributed knowledge management staff in the course of their interviews in 2001.

It is also evident that much of the trajectory of the knowledge management and intranet development activity in the UK firm was instigated for the sake of the approval of further work, rather than on technical grounds. Whilst such compromises resulted in some undesirable ramifications, they could be tolerated so long as they were made in the best interests of the survival of the knowledge management implementation actor-network as a whole. This is illustrated in the contrast between the longevity of the UK knowledge management function and the shortened life-span of its equivalent in Boston.

It is recognised that the goal to manage any group behaviour in a large, decentralised organisation is ambitious. In this case, it is clear that the distributed knowledge management staff charged with the task of facilitating knowledge sharing at KPMG found it almost impossible. They lacked adequate status, authority and sponsorship to achieve this, both as individual actors and as representatives of the knowledge management implementation actor-network. Those whose behaviours the distributed knowledge management staff were supposed to influence operated according to priorities other that those of KMPG UK's knowledge management strategy, such as it was articulated. In effect, the daily work of the professional staff was focused on generating income for the firm as players in actor-networks centred around client accounts, and the incentives framework at KPMG was geared to encourage this. Whilst it was generally understood that information and knowledge were important to the execution of roles within the firm, responsibility to knowledge share using the firm's official systems was not. Membership of the actor-networks that competed with that of the UK knowledge management implementation was more attractive to the staff at large because their offerings were greater. In addition to general support of client work, these other actor-networks provided routes to knowledge, as well as outlets for what was known, through their informal contact chains. In these smaller, more distinct and co-dependent social groupings genuine relationships based on shared work interests could be built. Both positive and negative social incentives to knowledge share, such as demands for reciprocity through exchange and the individual's fear of becoming "forked off[1]" free-rider, were relevant and persuasive in these smaller actor-networks. In contrast, the notion of contributing to all-encompassing corporate intranet on the say of support

[1] This is a term from the open systems community. It refers to becoming detached from the main group by following a unique path of (systems) development. The risk is that what is developed by someone who works independently will not fit with the main group effort in the future.

staff was not. By 2001 the distributed knowledge management staff were conscious that their organisational position, the firm's main priorities and the subversive knowledge economy at KPMG mitigated against the original intentions that they should help facilitate knowledge sharing within the firm. For this reason, a number of them had started to redefine their roles to fit with the dominant culture at KPMG UK. Their attempts at role redefinition did not prioritise new initiatives to address the issue of supporting knowledge sharing through the use of the intranet. As was the case across the entire period covered by this research, the activities of the staff most closely associated with the intranet had a significant impact on its role in knowledge sharing, as will be demonstrated below.

6.4 The role of the intranet in knowledge sharing

The rest of Chapter 6 is focused on the main research question that prompted the work described in this thesis: what is the role of the intranet in knowledge sharing? Given the nature of the findings already presented, explanations as to why the intranet in this case study did not fulfil the roles originally anticipated for it are also explored.

It has been established throughout this thesis that the role of the intranet is not a simple determinant of knowledge sharing. It has, in effect, multiple roles. The perceived roles at any given time depend on a number of factors such as the maturity of the implementation, the "knowledge" to be shared, prior expectations of its purposes, and the interests of the actor whose view is interpreted. This research has identified seven main roles of the intranet. It can

(1) furnish individuals and small groups with personal projects;
(2) demonstrate status;
(3) connect people together for the purposes of knowledge sharing;
(4) focus corporate attention on issues related to knowledge sharing;
(5) inhibit knowledge sharing;
(6) provide career direction;
(7) measure engagement with corporate knowledge management initiatives.

None of these match with the intentions of the case study firm, either as articulated in the official company documentation, or in the interviews conducted with the Knowledge Management Directorate staff.

This research has identified that in its early incarnation the case study intranet's role was as a technical interest of a closed group, and a hobby horse of one group member in particular. This organic, scalable, personal project initiated in 1995 became institutionalised from 1996 onwards. There is also evidence from reports of UKnow developments in the professional press, and from external KPMG presentations, in the late 1990s that the UK intranet was flaunted as a corporate status symbol. This was at a time that other large organisations had also started to take interest in intranet technologies (see Chapter 3).

More obvious than the two early interpretations of the intranet's role in furnishing individuals and small groups with a personal project and demonstrating status was KPMG's desire to deploy UKnow as a boundary object (Star & Griesemer, 1989, p. 411). Although not stated in these terms, this designation can be identified directly from policy documentation for the period 1995-2001. With its focus on the intranet to provide space for communication and collaboration in the early planning stages, early policy documentation indicates that the intranet would take the boundary object shape of standardised form. However, by 1998 the publication of the *Knowledge centres briefing pack* (UK Knowledge Management Group, 1998, October) gives a clear indication of the intranet as a repository[2]. (Indeed, some of the resources held on the intranet were known as "knowledge repositories".) There are hints in the data collected for this research that some held expectations that the resources to be built might even go as far as to serve as a proxies for expertise within the firm. Furthermore, according to interviewee comments reported in Chapter 4 on colleagues who were more reluctant to contribute to the intranet resource, it appears that a few KPMG employees also feared this to be the case. Stronger evidence from the analysis of the lines of work of the distributed knowledge management staff, as explored in Chapter 4, show that many of these staff, most notably the Presence Producers, operated as if they had adopted UKnow as a repository boundary object. This is evident in their roles as custodians who managed online information publishing and retrieval processes. The focus of training efforts in the business units on teaching end-users how to use tools that would allow them to submit and reuse information over the intranet – rather than on strategic issues such as transferring good practice - also supports this view. The intranet was assigned this role because those in control of its future, and who oversaw policy decisions at this stage were KMG staff, headed in practice by a codification expert.

However, in the strictest sense, the role of UKnow was not primarily that of a boundary object. This is because - even though it was a repository employed as a common point of reference - it was not used primarily by a set of diverse, equal status actors for the purposes of knowledge creation. Rather, according to the firm's usage statistics, its most popular role was a store of support resources, for example those issues by Human Resources, or for commonly used document templates. It was only in interactions between KPMG and contacts *external to the firm* that the intranet was deployed as a boundary object. This was in the shape of a standardised form when facilities were set up for online collaborative work that could result in knowledge creation with clients (see Chapter 5).

It is therefore not true to say that the role of the intranet was primarily as a boundary *object* in the strictest sense of the term. However, its highly successful role as yellow pages indicates a boundary role. It can be argued that in acting as a source of meta-knowledge, or as a pointer tool, the intranet was able to co-ordinate off-line knowledge sharing and knowledge creation

[2] This was still official policy until August 2001 (Chivers, 2001, August), two months before the interviews were conducted with the distributed knowledge management staff. It was clear that the change in approach had not been well communicated by this time since the overwhelming evidence from the interviews indicated an adherence to the repository boundary object role.

through helping individuals to manage contacts. It was particularly useful for employees who wished to communicate with others with whom they had no existing links. In such activity it can be seen that end-users packaged and fitted the technology made available to them (Kling & Scacchi, 1982, p. 65) to overcome an inefficiency of the "boxed" environment of KPMG by using UKnow as a gateway to new knowledge. This also fitted well with the dominant culture of knowledge sharing at KPMG through personal contacts. Here then, the role of the intranet was that of a boundary spanner. To date this term more readily used with human actors than inanimate objects such as an intranet. The findings of this research thus endow the intranet with a greater "social" (as opposed to "technical") standing than previous studies have done.

Related to the boundary role is the intranet's part in focusing corporate attention on issues related to knowledge sharing. In the same way that the intranet per se was not a site for knowledge sharing, but could prompt people into such activity through matching them with contacts, the simple existence of an intranet labelled as a "knowledge-sharing tool" encouraged employees to consider knowledge-sharing activity in the firm. The intranet could act as a catalyst for knowledge-sharing behaviour even though it did not match the expectations of its labelling as the firm's knowledge-sharing tool itself. This was because it forced people into thinking of better, alternative ways to share knowledge. The problem with the focal point role however, is that an intranet can become too strongly associated with the corporate knowledge management implementation. As a result end-users equate the two. This factor has been identified in Chapter 4 as one of the main going concerns of the staff charged with managing KPMG's knowledge management implementation in the UK.

In contrast with the more positive views of the intranet in knowledge sharing – connecting people and focusing corporate attention on knowledge sharing - is the role of the intranet as an inhibitor of knowledge sharing. Kling and Scacchi argue that the adoption of computer systems is selective (Kling & Scacchi, 1982, pp. 39-40). This proved to be the case for the intranet at KPMG between 1995 and 2001. Indeed, in some quarters it was selective to the point of non-adoption: evidence presented in this thesis report demonstrates that many employees ignored or actively repelled UKnow for the purposes it was meant to achieve. Several reasons account for this. The perceived quality of resources held online, in particular those that had been sanitised, reinforced the view that interpersonal contact was a much more efficient way of accessing knowledge than hunting for an incomplete, or non-existent, document held on the intranet. Obvious non-participation of peers in efforts to build up the intranet resource sanctioned non-compliance with requests made by distributed knowledge management staff for all to become involved. The mere existence of the intranet actually limited *off-line* knowledge sharing because it made visible information risk issues that had previously been dealt with informally. Similarly, the employment of a cohort of staff to manage the intranet implementation, notably those whose job titles included the word "knowledge" and "manager" or "management" encouraged others to believe that responsibility for knowledge sharing was in the hands of these experts, and not a personal concern.

Another role of the intranet discovered in the course of this research is its facility to provide career direction. This has been identified in the analysis of the going concerns of the distributed knowledge management staff related to power in Chapter 4, and confirmed to an extent in material held in the firm's archive of company documentation. This role aligns with Kling and Scacchi's proposition that narrow incentives and opportunities motivate choices (Kling & Scacchi, 1982, pp. 30-31). Three Knowledge Managers demonstrated how they could use the intranet in an opportunistic way to further their careers. As well as providing access upwards, the intranet provided "negative" career direction. Association with the intranet was regarded as a backwards career move by some, as illustrated by comments of two thirds of the Presence Producers interviewed for this research, as well as some of the Knowledge Managers. They had doubts over how working with the intranet prepared them for a more responsible role. Equally, there is evidence that this applied to the professional staff. This can be seen in the comments interviewees made when discussing professional staff priorities, as noted in Chapter 4.

The final role of the intranet identified in this thesis is evident in its deployment for measuring knowledge management activity within the firm. This role definition is interesting because although the intranet provided measures (in the form of usage statistics), in KPMG's case it did not measure what it purported to measure. However, those who noted the measurements were willing to use them alongside conspiring colleagues who were prepared to ignore their inadequacies for the sake of promoting the causes that the statistics could support.

6.5 Conclusion to Chapter 6: Accounting for the role of the intranet in knowledge sharing

It can be seen then that the intranet in this case study had multiple roles. A straightforward explanation is that this was a consequence of UKnow's position as the cornerstone of KPMG's UK knowledge management implementation. Like many computer implementations it was used by numerous individuals who belonged to multiple overlapping networks (Lamb & Kling, 2002, para 64). It was inevitable that the variety of users would lead to a variety of roles. Equally, Kling and Scacchi (1982) note that when the production lattice is spread across several departments and involves many staff it is likely to be compromised (p. 70). In this case the multiplicity of roles, several of which are unconnected to the official purpose of the implementation, represents such a compromise.

Throughout the thesis a close analysis of actor behaviour at the level of incidents in the data gathered for the research accounts for the various roles. For example, it has been argued that end-users were wary of using resources held on UKnow for knowledge sharing because they doubted their quality, and because the introduction of KWorld had a negative impact on promoting UKnow since end-users associated the limitations of the former with the latter. Furthermore, there was confusion over a number of issues: knowledge management and information management, knowledge management and the intranet, whether or not knowledge sharing was officially rewarded in the firm etc.

Taking a broader perspective on the data collected analysed, it can be argued that the main explanatory factor for the roles of UKnow is the nature of power relations within the firm. Of particular importance was the power of the knowledge management staff to persuade the firm at large to take knowledge management seriously so that the intranet would be adopted for its intended purpose – knowledge sharing. This is evident in the recurrent allusions to the difficulties of generating "buy-in" to knowledge management in general, and the intranet and knowledge sharing in particular, throughout the documentation examined and in the interview discussions. It is argued that the main reason for the difficulties in selling these concepts to the firm was that the status of those connected with knowledge management was low. This was due, in part, to factors that were beyond their control. For example, as support staff the distributed knowledge management staff would not become directly involved in the main revenue streams of the firm. However, the way in which the main cohort of distributed knowledge management staff interpreted and adapted their roles lowered their status and power. Thus the difficulties that the distributed knowledge management staff experienced in persuading others of the benefits of buying into knowledge management were a consequence of their weak actor power as low status employees within KPMG. The majority of them did not have sufficient opportunities to translate and problematise the interests of those that they wished to recruit to the knowledge management implementation actor-network. They were minor players battling against the interests of much stronger actor-networks to which potential recruits belonged, notably those associated with the drive to generate revenue through client work. Their lack of power meant that the main message relating to UKnow as a tool for knowledge sharing went unheard and stronger actors and actor-networks had the power to adapt the intranet for the roles that they understood.