Controls of knowledge production, sharing and use in bureaucratised professional service firms

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Abstract

One of the main obstacles to the current bureaucratisation trend in large professional service firms (PSFs) is the organic nature of professional knowledge production, sharing and use. Centralised knowledge management (KM) systems aimed at codifying "best practice" solutions to recurrent client questions for large-scale reuse are a common strategy increasingly employed to overcome this obstacle. Using a socio-ethnographic case study of a business law firm in Paris, this research examines whether the use of centralised KM systems in bureaucratised PSFs contributes to a shift in power from professionals to managers. More specifically are administrative controls over knowledge resources increasing, or do professionals retain power (i.e., some level of social and self-control) over knowledge production, sharing and use? The results of this study indicate that, far from losing ground, professionals' social and self controls have been reinvented and reformed in a bureaucratised context.

Keywords: Professional service firms (PSFs); bureaucratisation; knowledge management (KM) systems; organisational controls; organisational archetypes.

Introduction

After the early debates amongst sociologists about the real or purported distinctiveness of professional work (e.g., Freidson 1986), contemporary views have converged upon a recognition that all professions deal with human-related issues that are unique, complex and have uncertain outcomes (Champy 2009). That being so, it has been suggested that the systematic application of standardised knowledge to solve unique client problems (e.g., legal or medical issues) could be catastrophic. For example, in a healthcare setting, professionals need to take account of

specificities such as a patient's medical history, their current medications and allergies, and the existence of alternative pathologies, before rendering a professional judgment; even the diagnosis of a well-known condition does not automatically lead to the prescription of a single "best practice" treatment. Such decisions necessarily involve uncertainty, risk taking and the adaptation of theoretical knowledge to a particular case, and it is this non-algorithmic quality of professional judgments which has been used to justify professionals' claims for autonomy at work and the appropriateness of self/peer controls rather than enforced regulation.

Established forms of professional governance and practice are, however, being undermined. As Olgiati (2008: 557) notes, recent economic trends have emphasised an alternative approach: "the knowledge-based economic model is rooted in rationalistic and universalistic principles about the existence of a best way. This implies a top down enforcement of best practices as formally, technically, standardised, specialised and certified according to the one-dimensional logic of market imperatives". This philosophy has fuelled the rise of first generation knowledge management (KM) systems[i] which, from the late 1990s onwards, have made the centralisation and control of processes of knowledge production, sharing and use both easy and cheap (Hansen et al. 1999). Professional service firms (PSFs) have been enthusiastic adopters of such systems, not least because "successful professionalisation embodies a system of codification and standardisation of knowledge, which at the same time can be used as a strategy to control professionals [...]. It is in this respect that professionalism and the entrenched expert knowledge system may act as a host for governance practices" (Kuhlmann and Burau 2008: 624).

Yet the knowledge-as-a-commodity vision advocated by the knowledge-based economic model and the first generation of KM systems challenges professionals' long standing claims that their expertise is largely tacit and that quality professional judgement requires experience and acumen rather than the application of standardised solutions to known problems.

Although the use (or non-use) of KM systems as decision support tools by professionals has been studied extensively, their use as managerial control devices is not well understood. Given the mood of growing distrust in professional judgements (Evetts 2006) and an increasing demand for transparent, accountable, and cost-efficient professional services (Kuhlmann and Burau 2008), this paper asks whether KM systems are contributing to the breakdown of the

traditional "organic professional-knowledge nexus," to borrow Olgiati's (2006:533) expression. More specifically, do KM systems shift the balance of organisational power in PSFs' towards administrators, thus reducing professionals' social and self control over the production, sharing and use of codified knowledge? This paper seeks to answer this question by reporting an exploratory analysis of a case study in the Parisian office of a French business law firm, a member of an international multi-disciplinary practice providing legal, accounting, assurance and tax services.

A recent shift towards more administrative controls in large PSFs

Market and institutional pressures towards rationalised professional services

The market for professional services is becoming more competitive and deregulated, notably in Europe where, in 2004, the European Commission initiated a dialogue with the professional bodies of lawyers, notaries, engineers, architects, accountants, tax advisors and pharmacists, and with national regulatory authorities, to eliminate some of the cross-border restrictions on professional practice (European Commission 2005):

> "The European Parliament [...] welcomes the dialogue between the Commission, the Member States and the professional bodies of professional services' providers aimed at dismantling barriers to competition which are unjustified or harmful to the pursuit of the general interest and rules which are against the interests of consumers [...]"(European Parliament 2006)

At the same time, recent financial scandals have challenged established notions of professional responsibility. As Evetts (2006:516) notes, "…doctors, lawyers, scientists and many others are treated with suspicion. […] An increasingly litigious culture, fuelled by knowledge of large financial gains from negligence cases in the USA, is further undermining trust and professionalism". This climate of mistrust has created new discourses that emphasise transparency and objectivity, which are gradually replacing discourses of trust. Professionals are now required to be both transparent in their dealings with clients, and accountable for their performance (Kuhlmann and Burau 2008; Evetts 2006; Champy 2006). In particular, there is a

greater need to make explicit the ways in which they use evidence and existing knowledge. At the same time, professions are facing intense economic and institutional pressure to deregulate, rationalise and "managerialise" their activities. Such demand are not new (see, for instance, Porter 1995), but they have recently gained momentum, resulting in the application of new managerial regimes within a number of PSFs, and the integration of more explicit governance regimes into their organisational structure.

In the legal field, Dezalay (1992: 18) describes large, bureaucratised law firms as "law factories", which are manifestations of the supremacy of an American model over European legal craftsmanship: "because of the concentration of resources that these factories can mobilise, small practitioners have no choice but merge or disappear, as the international competition [in the market for legal services] intensifies." Similarly, firms in the accountancy field have been moving away from the "Professional Partnership" (P2) organisational model (Greenwood et al. 1990) - which is characterised by informal controls in favour of the "Managed Professional Business" (MPB) model (Cooper et al. 1996), where administrative controls are systematised (Greenwood et al. 1998). In the latter, controls are applied using management by objectives (MBO) techniques and explicit performance indicators (Dirsmith et al. 1997), such as partners' annual fee generation, the reporting of billable hours, and the types of clients and engagements that should be given priority.

The professional health care services field has been subject to a similar phenomenon. Studies by Ford and Angermeier (2008), Harrison and McDonald (2008), and Hunter (2006) document the standardisation of care, the rise of evidence-based medicine, and stricter clinical controls in hospitals: "[t]he new health policies of managerialism, markets and consumer 'choice' change the substance of governance in different ways. [...] One characteristic of the changes in governance is the increasing turn towards managerial steering and performance that in turn shifts power to the meso level of organisations and professions" (Kuhlmann and Burau 2008: 620 and 624).

In the following section, I describe the evolution of organisational controls in PSFs in the context of extant market and institutional pressures for transparency, accountability and cost-efficiency.

Organisational controls in PSFs

Definition of "control"

Control can be defined as a form of influence which is intentionally or unintentionally exerted by some individuals on themselves or on other individuals within a social group. This influence effectively limits the freedom of those upon which it is exerted (Lebas 1980). In an organisational setting, intentional control is exerted to ensure that members of an organisation act in a coordinated and cooperative fashion. However, as Lebas and Weigenstein (1986:261) point out, "while the necessity of control may be readily apparent, the route to control is less obvious. Every organisation elects some combination of input control coupled with output control, and defines a general approach to control which may be labelled 'market,' 'rules' or 'culture' (although the approach is rarely a pure version, but is rather adulterated by elements of the above three means of control)".

Relevance of Hopwood's (1974) typology of controls: social, administrative and self-controls

Other descriptions of control within organisations have focused on the influence of "markets", "bureaucracies" or "clans" (Ouchi 1980); or have variously classified internal controls as "cybernetic" or "non-cybernetic" (Hofstede 1981); "cultural" or "bureaucratic" (Child 1984); "actions", "results", or "personnel"-oriented (Merchant 1982); or as based on "mutual adjustment" (Perrow 1967). A literature review undertaken by Chiapello (1996) identified six dimensions of organisational control: (1) the means of control (market, organisation, culture, or social relations); (2) control processes (cybernetic or non-cybernetic); (3) the time at which controls are performed (before, after or during action); (4) the controller's identity (organisation, person, group, or self); (5) the subject of control (e.g., actions; results; individuals' characteristics; the organisation's objectives and strategy; organisational culture and context), and (6) the attitude of the person being controlled (moral commitment, "working the system", or alienation). Dambrin (2005) later proposed two additional dimensions: the direction of control

(lateral, ascendant or descendant), and the instruments of control (observation and analysis, or orientation).

Notwithstanding this plethora of dimensions and constructs, there is no complete or definitive typology of organisational controls. In this paper I adopt Hopwood's (1974) model, which proposes that organisational control is the unpredictable result of three competing spheres of influence: "self-controls" - those informally exerted by each individual over his own behaviour; "social controls" - those mutually and informally exerted by group members upon other members' behaviour; and (3) "administrative controls" - the intentional and formally exerted managerial power over subordinates' behaviour. Although they often conflict, these three realms of influence are not mutually exclusive and can co-exist within an organisation, forming a dynamic, unstable equilibria of "contradictory tensions".

Hopwood's (1974) typology of self, social and administrative controls is consistent with extant research examining the form and management of PSFs (e.g., Brock 2007; Cooper et al. 1996; Greenwood et al. 1990; Greenwood and Empson 2003; Hinings et al. 1999; Malhotra and Morris 2009; Pinnington and Morris 2002, Von Nordenflycht 2007)[ii], as well as sociological studies of organisations employing professionals (Scott 2004). These studies frequently examine the tension between formal control structures within PSFs, and informal structures such as social obligations and professional self-discipline. In addition, various organisational archetypes have been proposed to characterise the distinctive organisational and governance arrangements of PSFs which emphasise social and self governance rather than formal rules and other kinds of administrative control (see for example Scott's (1965) "Autonomous and Heretonomous Professional Organisations"; Bucher and Stelling's (1969) "Professional Organisations"; Litwak's (1961) and Mintzberg's (1979) "Professional Bureaucracy"; Mills et al.'s (1983) "Flexiform" or Greenwood, Hinings and Brown's (1990) "Professional Partnership"). In the following section I set out the reasons why social and self-controls have traditionally been seen as appropriate in professional work settings.

The growing emphasis on administrative controls in large PSFs

Professional work is frequently defined as "special," with distinctive outputs and throughput processes, a view which has contributed to the legitimation of professionals' demands for self- and social regulation, and their resistance to administrative controls (see, for instance, Wallace 1995). For example, one of the defining features of professional work is that the quality of "outputs" (Lebas and Weigenstein 1986) is difficult to define and to measure (Malhotra et al. 2006), whether by clients, regulators, or even professionals themselves. Audit work, for example, is traditionally judged according to the independence and competence of the professionals who perform it (De Angelo 1981), qualities which can only be inferred but not measured. Given the intangibility of professional service quality, clients resort to imperfect assessment techniques, such as word-of-mouth recommendations based on organisations' reputations (Greenwood et al. 2005), media rankings, and positive press coverage (Karpik 1989). Commentators such as Child (1984), Hofstede (1981), Ouchi (1977) and Merchant (1982) have suggested that when the quality of outputs is not measurable, administrative controls over such outputs are counter-productive, or at best useless.

Professional work is also characterised by an element of "co-production", where clients work with professionals to varying extents in order to create outputs (Mills et al. 1983). Some organisation theorists have argued that because professionals are dependent upon a client's willingness or ability to share key information relevant to the production process, they face a high degree of task uncertainty and that administrative controls over the "throughput" process are therefore irrelevant (Chapman 1997).

Professionals' production "technology" (Perrow 1967)[iii] is also incompatible with administrative controls. Professional work is frequently non-repetitive because many client questions are unique (Pinnington and Morris 2002), and is traditionally seen as depending more upon practitioners' personal attributes such as their intuition, aptitude, experience and discretion (Abbott 1988; Freidson 1986) than on their compliance with predefined production standards. Professional work would thus qualify as "non-routine work" in Perrow's view, to which administrative processual controls are ill-suited.

Nonetheless, there is a growing emphasis upon administrative controls within professional organisations, particularly within the largest PSFs which emerged after several decades of

internal growth and a succession of mega-mergers (Cooper et al. 2007). As discussed previously, this trend for the direct regulation of professionals has also been encouraged by an institutional and regulatory environment that promotes bureaucratic control as a solution to the current confidence crisis in professional self-governance.

Organic knowledge production, sharing and use in PSFs

Another distinctive characteristic of professional work is the (partially) organic nature of its knowledge creation, sharing and use. Professionals cultivate a body of abstract and codified knowledge as a resource for addressing client problems, and apply that knowledge using discretionary judgment (Freidson 1986). Abbott (1988:40) refers to this significant component of professional work as "inference"[iv], whereby abstract knowledge is linked with the particulars of a client's problem or situation[v]. For example, doctors may allocate some aspects of a patient's diagnosis and treatment to non-professionals, but the interpretation of diagnostic results and the treatment strategy - their inference - cannot be delegated to subordinates. Thus, although professional knowledge is often codified, its abstract features mean that its adaptation to specific questions is difficult to standardise and control, in opposition to the current bureaucratisation trend in PSFs.

However, that is not to say that professional knowledge creation, sharing and use processes are identical across professions and PSFs. For example, in some small, collegial-style PSFs there is little or no attempt to "recycle" existing knowledge from one client assignment to another, and constant "reinvention of the wheel" is a source of professional pride (Robertson et al. 2003). In these firms, knowledge sharing is territorialised and restricted (Lazega 2001). In contrast, large PSFs such as the "Big Four" accounting firms may engage in "knowledge commodification"[vi] as a strategy to colonise new jurisdictions and practice areas (Suddaby and Greenwood 2001: 933). This relatively new approach to knowledge production, sharing and use is indicative of a shift towards a more inclusionary intra-organisational perspective, which contrasts with the territorial, exclusionary knowledge regimes of the past (Knorr Cetina 2006).

When the first KM systems became available in the early 1990s, organisational knowledge was seen as any practice, experience or other know-how that had proved to be

valuable or effective, and might be applicable to other organisations (e.g., Nonaka 1994). Viewed as a commodity, knowledge was a "strategic intangible asset" which was sticky (Szulanski 2000), codifiable (Kogut and Zander 1992), and transferable (Grant 1996). Other commentators described it in terms of, *inter alia*, the level at which it was held (individual or collective) (Malhotra 2003); whether it existed in a tacit or explicit state (Polanyi 1969; Nonaka 1994); or the extent to which it was retained consciously or unconsciously (Polanyi 1967)[vii]. Specific systems also known as "people-to-document knowledge management systems" (Hansen et al. 1999) emerged to manage the process of its creation, dissemination and use. Since then, this idea of knowledge as an asset has been challenged by a more existential view (Maturana and Verela 1998), whereby knowledge is indissociable from the "knower". So-called "second generation KM systems" are arguably more consistent with this alternative view, and are designed to encourage the development of communities of practice and to stimulate "knowing" experiences, rather than merely facilitating transfers of knowledge.

The commoditisation of knowledge so that it can be managed and controlled embodies one of the many forms of bureaucracy; KM systems, however, are appealing to PSFs because they appear to offer a measure of operational transparency, particularly in light of the fact that these organisations are under increasing regulatory pressure to improve their accountability (Kuhlman and Bureau 2008; Olgiati 2008). Before KM systems were implemented "no one best way [was] predictable from the formal body of knowledge itself" (Freidson 1986: 217) because practitioners employed it inconsistently. New methods of knowledge dissemination, coordination, translation and reuse have since become commonplace, with numerous studies describing professionals' acceptance or rejection of people-to-document KM systems as decision aids in the provision of services (e.g, Hsiao et al. 2006; Werr and Stjernberg 2003). Whilst such systems are a clear attack upon professionals' long-established autonomy and discretion, their use as bureaucratic control devices intended to increase output standardisation, reduce litigation risks and improve cost efficiency has received scant academic attention. The purpose of this research is to find out whether the use of codified people-to-document KM systems in bureaucratised PSFs contributes to a shift in power[viii] away from professionals (i.e., reduced exercise of social and self-controls over knowledge production, sharing and use) and towards managers (i.e., increased formal controls over knowledge production, sharing and use).

Methodology

A number of prominent researchers have argued that qualitative research methodologies are best suited to investigations of phenomena or topics for which little or no previous theory exists (e.g., Barley 1990; Bouchard 1976; Eisenhardt 1989). For example, a grounded theory approach to connect data to existing and suggestive new theory (Glaser & Strauss 1967) is appropriate for exploratory research questions where data is collected and analyzed ahead of the formation of hypotheses. Such an approach advocates the simultaneous gathering of rich and detailed data alongside its analysis a process known as "abduction" such that "data analyses often alternate and iterate with data collection processes" (Edmondson and McManus 2007: 1163). The analysis of material such as exploratory interviews, direct observations, archival data, and longitudinal observations is a pertinent research strategy because it allows a detached investigation of a topic, as well as providing the opportunity for triangulation.

Given the lack of extant literature on the mutual influence of KM and organisational controls in PSFs (Ditillo 2004), an exploratory socio-ethnographic approach was adopted, and an abductive analysis undertaken. Organisational socio-ethnographies permit full immersion in the research field and involve the use of data collection and analysis procedures which follow grounded theory principles. In addition, the adoption of such an approach (see Beaud and Weber 1997) implies the existence of the following: (1) intimate personal knowledge of the subjects of the study; (2) longitudinal rather than cross-sectional observation; and (3) sensitivity to the constructed nature of the research results. Although the research strategy excludes the possibility of generalizing the findings to other types of organisation or contexts, it is believed that this limitation is offset by the study's ability to provide insights into an organisational process which is not well understood, thereby providing directions for future research.

The research field

This study investigates the behaviour of business lawyers when creating, sharing and using professional knowledge. According to Robertson et al. (2003: 835), professionals operating in the legal field resort to methods "characterised by deduction from previous cases and precedents and reinterpretation of existing judgments." This reliance on documentation from

previous cases in forming judgments on new cases draws attention to the role of people-to-document KM systems in the delivery of professional legal advice. Such systems seem compatible with lawyers' "epistemic culture" (Knorr Cetina 1999): "where knowledge is highly interpretable and contested, knowledge creation is grounded within, and relies far more [than in other professional fields] upon an explicit knowledge base articulated in text-based forms" (Robertson et al. 2003: 852-853).

Data collection and analysis was carried out from 1999 to 2008 in the Parisian office of a large PSF which was a member of an international network of accountants, lawyers and consultants. In order to protect the anonymity of the subject organisation, I refer to the office as "JurisParis", and its network member organisation as "JurisFrance".

JurisParis employs 250 lawyers (and close to 50 people in support functions such as IT, secretarial services, and knowledge management), and is one of the principal offices of JurisFrance, which employs some 2000 lawyers. Clients of JurisParis consist mainly of large French companies, many with foreign operations; often, these clients are referred to the office by colleagues in correspondent firms within the global network in which JurisFrance is a member.

Legal work in JurisParis falls mainly into three categories: (a) answering questions from clients (ranging from one-off engagements to long-term, ongoing client assistance over several years); (b) the administrative management of client files (e.g., statements of time spent, production of invoices, collection of payment, etc.); and (c) "development", an activity aimed at improving the firm's infrastructure. Given the international orientation of its client list, many of JurisParis' lawyers specialise in legal and tax advice relevant to cross-border operations. This study examines (a), with a particular emphasis upon the role (if any) of the firm's KM system in the provision of tax and/or legal opinion letters.

JurisParis has made a significant investment in knowledge management resources. Two people are employed full-time to ensure the continuing maintenance, development, user training and technical support of a range of information and communication technologies, including the firm's own KM system. Known in-house as "knowledge base", the system was developed in 1999 using Lotus Domino software, and contains more than 20,000 documents. Using a search

engine, users can access legal documents from previous client engagements, such as contracts, opinion letters, memoranda, presentations and reports. A number of these have been classified by an internal standards committee as representing "best practice".

Initial contact with the managing partner of JurisParis indicated that knowledge management is considered to be an essential aspect of the firm's survival, with the primary purpose of the KM system to improve the technical quality of work. However, an analysis of the firm's annual business plans, and the firm's annual reviews of its KM function for the period 1999-2008, indicate that the purpose of the KM system has changed over time. Its initial objective has gradually been supplanted by an emphasis upon productivity gains and cost efficiency.

The significance of the KM system within JurisParis is demonstrated by the surveillance processes employed by the firm to ensure that it is used. Document downloads are monitored by the firm's Knowledge Manager and reported to the managing partner several times each month. Use of the system is compulsory: firm policy dictates that if a lawyer does not use appropriate templates and other relevant resources from the database they may be subject to disciplinary proceedings, and would not be covered by the firm's liability insurance if a client were to sue for negligent advice. Although client-initiated litigation is rare, its adverse consequences are a significant motivation for compliance. In addition, lawyers' annual assessments (which have a direct impact on their career progression and salary) include criteria which take account of time allocated to KM activities although, as the managing partner conceded, these criteria have only a negligible effect on lawyers' salaries.

Study data

A number of data sources were subject to analysis:

- *Interviews*. I identified 12 tax and consultancy engagements which were representative of the issues typically addressed by the firm. For each of these, I spoke with the lead partner, principal manager, and the junior lawyer charged with researching the issues pertinent to the eventual opinion letter or report. Other individuals were interviewed if they had a significant role in the engagement. A total of fifty-one interviews with 41 employees were

undertaken between 2005 and 2008. In addition, the managing partner of JurisParis was interviewed three times during this period.

- *Personal reflections.* My own experience as the firm's Knowledge Manager between 1999 and 2005.

- *Electronic and archival documents.* I examined the document downloads from the KM system over a three-month period (February to April 2005), totalling 18,336 observations. In addition, I obtained access to 30 archival documents from the period 1999-2008, including model lawyer objective sheets for each hierarchical level of the firm, and knowledge management activity reports prepared by the partners responsible for KM supervision.

- *Non-participant Observation.* I attended 7 meetings, during which discussions were held regarding the selection of knowledge resources to be added to the KM system.

Analysis and coding

Data sources were analyzed and coded with NVivo 7. Consistent with an abductive analysis, codes emerged and were revised as data was gathered, or were drawn from conceptual frameworks derived from a literature review conducted both before and during the data collection. In particular, the analysis was mindful of Orlikowski's (1992) assertion that technology cannot have a social effect unless it is utilised. She argues that users are creative and do not always follow a technology's prescribed uses. Rather, they are frequently agents of change, who circumvent its prescribed uses or apply a technology in imaginative ways to unanticipated situations. As I describe below, the purpose of the KM system as defined by the firm's management committee was not always consistent with its actual use by JurisParis' lawyers.

Results

Uses of the KM system by lawyers in JurisParis

Data analysis revealed a typology of uses and non-uses of the KM system at JurisParis.

(1) <u>To find ready-made answers to known questions of law</u>

Lawyers often search the KM database to find documents which have been used in similar situations to the one they face, or to find out if a specific legal question has previously been addressed by another lawyer. If a document or opinion letter is relevant and appropriate to their client's case, most of the lawyers interviewed for this study said that they would reuse existing templates or answers rather than formulating solutions from scratch

(2) <u>To identify leads for developing answers to new questions of law</u>

Users who cannot find an appropriate document or solution often decide to proceed on the basis that their query is a novel one, which requires the preparation of an original answer. In such a situation, lawyers indicated that they frequently turn to their personal network of legal contacts in order to generate leads for developing their answers. In addition, they may use the KM system as a resource to identify those individuals within the firm who may have the expertise to suggest possible routes to a solution.

(3) <u>For self-training or future reference</u>

A third type of KM system use is self-training. Whilst searching for ready-made answers or leads for new analyses, users often identify documents of interest which, although not immediately relevant to their current search, may be of use in the future or as a source of information about a point of law or practice. Users download these to their personal libraries for later use or reference[ix].

(4) <u>To observe and monitor peers' work</u>

The author's prior employment in the firm, and her close relationship with some of its lawyers, resulted in confessions of a clandestine practice: scrutinizing what colleagues were working on. More specifically, a number of lawyers admitted that they would examine the documents entered into the KM system by a colleague in order to evaluate their technical quality and whether they contained inaccuracies. This type of use is far removed from the uses recommended or anticipated by the system designers or the managers of JurisParis. For some lawyers, this practice was a way of monitoring the activities of their rivals, or a means of gathering evidence to undermine them. Some users claimed that checking up on others was a way of policing whether they were "poaching" on technical fields outside of their recognised area of expertise or declared specialisation in the firm's matrix structure.

(5) <u>Use of the KM system – or deliberate non-use – to territorialise knowledge</u>

JurisParis maintains a list of lawyers' technical and sector-specific specialisations, which is published in its client brochure. However the list is not static: a number of internal working parties meet regularly to discuss the creation and colonisation of new practice areas. When these groups agree that a corpus of knowledge has been developed which is substantial enough to support the creation of a new practice group, the group tends to claim exclusive ownership and use of the knowledge resources associated with their sphere of expertise. This research reveals that, in terms of the use of the KM system, members of newly-formed practice groups demonstrate one of two types of response. The first is to put their specialist resources "on display", with the aim of attracting recognition from other members of the firm and securing their rights of ownership and exclusive use over this knowledge. The second strategy is to boycott the KM system, i.e., restrict the use of their accumulated knowledge resources only to those who claim expertise in that area. To prevent knowledge from leaving the group's "territory", members do not contribute to the central KM system. This results in the creation of a "black market" in specialist knowledge, which passes between a select group of lawyers but is outside the boundaries of the official knowledge market of the KM system. Thus, whilst one type of behaviour is a territorialisation strategy designed to protect knowledge within a social niche, the other is a form of deterritorialisation/reterritorialisation whereby knowledge is made accessible to the entire firm in order to demonstrate expertise of the author and establish his legitimacy.

Lawyers were also categorised by the frequency of their use of the KM system (moderate or intensive user, or non-user), and on their expressed enthusiasm or hostility to it. Frequency of individual use was assessed according to the number of documents downloaded by each lawyer, as compared with the average number of downloads undertaken by their peers. Enthusiasm or hostility towards the KM system was determined from analysis of interview data. Enthusiasts were those who made no (or minor) criticism of the database (e.g., poor design, lack of functionality), whereas hostile users were those who expressed more severe disparagement, such as questioning the rationale for the system, or vilification of its use and effects.

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In the following section I set out some of the implications of these results; in particular, I consider how the various uses of the KM system, and individual variations in use and enthusiasm, may affect the firm's control over the production, sharing and use of knowledge.

The evolving nature of knowledge control

Control over the knowledge production process

Use of the KM system to find existing answers to common questions, or to identify a course for tackling new ones, has resulted in the development of an unforeseen application: the ability of users to check what others within the firm may have written on a particular question of law. The systematic downloading and appraisal of documents created by colleagues encourages individual professionals to align their legal opinions and advisory style with that of peers and seniors. Despite the fact that some legal topics may be subject to varying and even contradictory interpretations, widespread observation of what others have said results in a standardisation of individual professional judgments across the firm. Such a result is congruent with the bureaucratic objective originally envisaged for the KM system: that professional knowledge production and delivery should be standardised in order to improve cost-efficiency and productivity. However, this alignment of legal opinion was not obtained by administrative controls, but emerged as an unforeseen result of individual lawyers' use of the KM system.

Although administrative, coercive controls exist to compel the use of the KM system to produce consistent legal advice, these have little or no force because JurisParis has no way of knowing whether or not a lawyer has produced an original document or opinion letter, or has reused and adapted an existing document available in the KM system. Lawyers themselves have internalised the bureaucratic need to standardise their opinion letters and other documents, and to check what others have written before formulating their advice. Their self-regulation has thus not lost ground to the bureaucracy of the KM system. Indeed, lawyers' control over the quality of their work has become more sophisticated: it is no longer solely concerned with the self-discipline to behave "professionally", but has been extended to include a concern not to engage in the unnecessary duplication of extant knowledge. By not "reinventing the wheel" for every client

engagement, professionals act to minimise the risk of technical errors appearing in work outputs, and ensure that their time is utilised in the most cost-efficient way.

I also propose that lawyers' creative use of the KM system for self-training or to "territorialise"/"deterritorialise" their expertise has influenced how knowledge is produced and used. Individuals no longer operate as "general practitioners", but are increasingly creating specialised knowledge spaces which become incorporated into the search algorithms and taxonomy of the KM system. The bureaucratic thesis advocates that increasing specialisation of a workforce creates productivity improvements, yet administrative controls such as formal rewards and sanctions were not responsible for the increase in lawyers' specialisation at JurisParis. Rather, it was their self-imposed social controls and norms, played out in the arena of the KM system, which created social pressure to maintain their specialist fields and not stray into those of their colleagues. This new form of social control was revealed by lawyers' tendency to observe and monitor peers' work, and to check that their contributions to the KM system were solely within a specific individual's recognised area of expertise. In this way, lawyers could police their own knowledge jurisdictions and deter others from encroaching on them.

The KM system can also be used to assess the technical capabilities of others' work, which adds a layer of quality control to the firm's professional output. Because the KM system makes errors visible to the entire firm, lawyers attempt to produce flawless work so that their reputations are not tarnished publicly. Again, the KM system operates indirectly to improve the quality and consistency of the firm's client service by encouraging professional self-monitoring without the need to impose formal administrative controls.

Thus, although the KM system was implemented in order to increase bureaucratic controls over professional work by improving lawyers' productivity and cost effectiveness, these outcomes have been achieved without applying administrative controls. Work standardisation, specialisation, and technical reliability were achieved because new forms of social and self-regulation emerged as the system was used, as demonstrated by lawyers' anticipated and unanticipated uses of the KM system. Professional social and self-controls have not been superseded by bureaucratic managerial controls, but have been reinvented and reformed in a new context.

Control of the knowledge sharing process

Before the implementation of the KM system, knowledge sharing occurred informally between individuals and was determined to a large extent by their personal network ties and position with the firm's self-constituted social niches. Sharing now occurs (although not exclusively) via the centralised system. Although the new technology has not eradicated the traditional distribution channels, it has created new ones. Lawyers are now able to access knowledge despite a lack of social capital. Maxine, for example, a newly recruited lawyer, used the KM system because she was unable to consult personal contacts within the firm to advise her on matters of law:

> Maxine, Manager – You think and think, you can't see any answers so then you look into the base [KM] to see whether someone has already written something that could help you move ahead in your analysis. […]
> (Interviewer) – When you get stuck on a technical point, what's your procedure, to look in the base [KMS] first or to ask colleagues for assistance?
> Maxine, Manager – I do sometimes look in the base before going to see the others. Yes, of course I do. Asking the others is really…well I think the idea is stupid, but there you go…it's really the last resort.

Other lawyers are keen to demonstrate their personal resourcefulness and research abilities, without the aid of colleagues. As Matthieu explained:

> Matthieu - Supervisor – My job, you know, my job is to use my brains to find solutions to problems. It's not to ask someone else or the knowledge base to do the job for me!

Use of the KM system has allowed lawyers to bypass established and exclusive social niches in their search for expert knowledge. Yet the findings of this study indicate that the creation of a centralised knowledge sharing system need not be accompanied by a greater emphasis on administrative controls. I find that professionals are inclined to regulate themselves, and to apply social sanction to those who do not agree to share their knowledge resources. James,

the firm's managing partner, explained that he was confident that a "natural" peer pressure mechanism would eventually isolate individuals who did not conform to the new regime. He also acknowledged that self-monitoring and regulation of the system by professionals had drawbacks, notably some feelings of inequity about the relative contributions to the database by some of its contributors and users:

> James, Managing Partner – The types of people who are most involved in the commercial side and not much in research always complain that this new mutualisation works against them. It's only logical after all, because they don't have great awareness of the resources they use and the investment of capital needed to produce these resources. You see the same thing in other professions [...]. In contrast, specialists are very sensitive to the looting of their work. They consider that when they've developed a product, it should be their job to sell it. (…) I think they are against reuse by anyone other than themselves. If I carry out a study and no one uses it, I grumble about it. If I carry out a study and I'm told it has to be used by everyone and I grumble about that too, then we're at a dead end!

In summary, I find that the knowledge sharing process at JurisParis is now partially bureaucratised, in that it is centralised, searchable and subject to scrutiny by committees of experts who decide on what is "best practice". Although "black markets" for knowledge exist, they do not prevent the majority of tax and legal opinion letters from being shared via the central KM system. This new, bureaucratised sharing process did not require the imposition of increased administrative controls; rather, professionals have remained in direct control of their knowledge resources, and continue to decide what they share or do not share. I suggest that most lawyers use the KM system even if they fundamentally disagree with the idea of centralised knowledge sharing (see Table 1, "Hostile Users") because new forms of social and self-regulation have evolved to produce a set of institutionalised behavioural norms. If a professional does not play by the new rules and avoids posting their outputs to the central KM system, he is perceived by his peers as being a mere consumer of others' ideas. To prove their competence, lawyers are expected to display their work; to refuse to do so is suspicious and attracts disapproval. My analysis found only one lawyer who refused to use the KM system at all (see Table 1, "Boycotter"), and even those who were most hostile to the system were occasional users (see

Table 1, "Frustrated" and "Schizophrenic" profiles). This suggests that resistance to knowledge sharing is isolated.

Control of the knowledge use process

The reuse of personal documents and opinion letters has always happened within JurisParis, but the new KM system means that lawyers can reuse resources produced by others, without having been involved in their production or knowing the authors. The firm's managing partner explained that he wanted work outputs to be consistent and of high technical quality, and for lawyers to avoid duplicating existing documents and research efforts; however, these largely bureaucratic objectives were achieved without applying administrative controls over the use of the KM system. Although there appeared to be a type of formal, bureaucratic sanction in place - i.e., the threat of personal legal liability for lawyers who did not use the firm's authorised templates and other knowledge resources, this threat did not materialise during the observation period of this study (almost ten years), and may not have exerted any influence upon the behaviour of lawyers at JurisParis. In effect, individuals could decide for themselves if and how they wanted to use the KM system. Nevertheless, most indicated that they felt compelled to reuse existing documents and advisory opinions, even if they disagreed with the very idea of doing "copy-and-paste" jobs. A tax partner, for example, explained that reusing materials from past engagements was one of the least satisfying aspects of his work. At the same time, he felt that the firm was making progress in its approach to producing "standard types of engagements":

> Hyppolite, Partner – My job is to analyze a given situation, and to be able to say, "here is what you could do, here are the possibilities that you have." Given the constraints of a particular client question, we have to find the solution that would be most suitable. That's what I like about my job. That's what I find interesting. Currently, in our profession, law firms like ours…you know…we are transforming ourselves into mere suppliers of products, of pre-packaged solutions, and we increasingly use ordinary commercial techniques.
>
> Researcher – Since when did you notice this evolution?
>
> Hyppolite, Partner –About five years ago. And it is an irreversible phenomenon. In fact, in France we are even lagging behind on this.

Researcher – Was this evolution imposed by the market, do you think, or was it the result of some sort of internal strategy, at JurisParis?

Hyppolite, Partner – Well, both. Clients find their interest in all this. They get more for less. We have no choice. What is sad is that, when you write, you sharpen your thoughts; the drafting phase is of primary importance because it is by writing your conclusions that you realise what the weak points are. If all you do is just copy-and-pastes, you miss that. […] Personally, I rarely use the knowledge base. I never find anything in it. I ask the young ones and they find things, most of the time. Including my own work, things that I had forgotten! […] On the standard types of engagements, we have made lots of progress.

The rationale behind reusing existing knowledge includes improving cost-efficiency, productivity and, ultimately, profits. However, client invoices and calculations of an engagement's profitability ("realisation rate") rarely took account of the costs of the initial production of resources downloaded and reused in the production of an opinion letter or project document. Indeed, productivity gains achieved via the large-scale reuse of documents contained in the KM system are essentially redistributed to clients free of charge, since most clients are invoiced on the basis of "billable hours" spent by the lawyers involved on that particular engagement.

The other rationale for reusing existing knowledge and standard form templates is that this reduces the risk that technical errors are introduced into documents as they are produced afresh. However, some users were sceptical about the technical reliability of some of the documents and solutions in the database. A typical concern shared by the majority of lawyers was doubt as to whether the tax and legal advice found in the KM system had been proven. These misgivings call into question the ability of the database to provide reliable, high quality knowledge solutions.

My analysis of the usage statistics for the KM system, and of the comments of interviewees, suggests that knowledge reuse has become more systematised since the system was introduced, particularly amongst lawyers with less than 5 years of experience[x]. However, the efficient and methodical reuse of best practice solutions did not result from lawyers' fear of administrative sanctions. Most had internalised the need to be more productive and cost-efficient,

and were using the KM system regardless of their level of enthusiasm or hostility towards it (see Table 1).

Conclusion and discussion

This study examined whether the use of codified people-to-document KM systems in bureaucratised PSFs has caused in shift in power away from professional self-regulation and monitoring in favour of increased administrative controls over the creation, sharing and use of knowledge. A socio-ethnographic study of a large Parisian law firm indicated that using a KM system contributes to a bureaucratisation of knowledge production, sharing and use processes, but is not accompanied by a concomitant shift in the balance of controls within the firm. Tighter administrative controls were not necessary. Far from losing ground to bureaucratic rules, professionals adopted self-imposed controls to regulate the use of knowledge within the firm. They were able to align their behaviour with managerial goals intended to enhance transparency, accountability and cost-efficiency, but at the same time retain their independence within a bureaucratised setting.

This research makes three important contributions. First, it adds to the professional-bureaucratic conflict debate by suggesting that professionals, who have historically resisted any bureaucratic constraint (Raelin 1985), are now, in certain settings, actively participating in the bureaucratisation of their own knowledge production, sharing and use. Given that the success of people-to-document KM projects depends upon professionals' willingness to codify and share their work outputs widely which may diminish their professional power why do they actively embrace such systems? Why are they promoting the very mechanisms that might limit their autonomy?

One plausible explanation could be that the bureaucratisation of knowledge production, sharing and use actually facilitates professional power. In particular, transparency might assist in addressing increasing public mistrust of professional judgments, which have been accused of being subjective, arbitrary and untrustworthy. By adopting a more systematic, scientific approach to problems, and producing more consistent solutions to the same problem, professionals' work becomes more reliable and auditable, which is likely to increase public confidence in

professionals' work. This suggestion concurs with the views of Bastard et al. (2005) and Castel and Merle (2002), who claim that standards, norms and other administrative constraints, which initially appear to be rationalisations or bureaucratic emanations limiting professional discretion and autonomy, are actually resources that can be used to improve the reputation of professionals. In addition, if KM systems could be used to find solutions which could be sold to clients, then professionals' powers are in fact increased rather than diluted. If so, one could argue that bureaucracy does not always crush individual agents' powers and creativity, but rather it redefines where their powers and creativity can be applied.

Further, I note that a shift away from the old "exclusionary regime of knowledge" (Knorr Cetina 2006) toward a more inclusive, accessible system is of benefit to those previously excluded from accessing knowledge resources. Individuals formerly disenfranchised by a lack of social capital or network associations can now use KM systems to access powerful knowledge resources, and to demonstrate their own abilities to create and colonise knowledge. Given the significance of this revolution for both the old guard and the new generation, it is not surprising that this power reconfiguration finds both supporters and opponents.

Another possible explanation for professionals' active participation in the bureaucratisation of knowledge production, sharing and use is that their acceptance of such projects might not trigger the classic professional-bureaucratic conflict that the extant literature proposes. It is possible that KM codification projects can be implemented in such a way as to satisfy both organisational and individual goals, as suggested by Morris (2001), or that professionals are (perhaps dangerously) unaware of conflicts between professional and bureaucratic objectives and values (Suddaby, Gendron and Lam 2009). The extent to which self- and peer-imposed control mechanisms are resisted or not, and the extent to which professionals unwittingly or consciously accept the principles of bureaucratic control, remain to be determined in future studies.

A second contribution from the results of this research is to expand upon current conceptualisations of organisational control archetypes. Extant literature suggests that administrative controls are necessarily formal and cybernetic, and always use clear reward and sanction procedures. In this study, however, an increase in the *appearance* of administrative

control (e.g., through repeated verbal injunctions, by the firm's managing partner, to re-use best practice solutions to known questions of law) was observed, but no formal sanctions or clear reward system was in place. Despite their reported personal preference for autonomy and discretion in the performance of their work, most professionals felt compelled to change their behaviour in relation to the production, sharing and use of knowledge. Should one infer that a facade of administrative control can be effective in encouraging certain desired behaviours? Further investigations are needed. The results of this study suggest that the bureaucratisation of PSFs influences not only their internal mix of self, social and administrative controls, but also the content of each of these three modes of control. Studying how each control vector changes over time opens up new research possibilities. More work is also necessary to understand how and why the targets of organisational supervision become either consciously or inadvertently involved in the structuring of their own surveillance.

Thirdly, the results of this study contribute to the organisational archetype literature by suggesting that the bureaucratisation of professional firms and the imposition of administrative controls are not necessarily linked. This research found that the control of knowledge production, sharing and use at JurisParis remained largely informal, despite the application of bureaucratic processes. This may imply that PSFs might not need more explicit regimes of governance and control, even if they are attempting to increase their productivity and cost efficiency and to become more "managerial". More research is needed to answer this question.

This study suggests that new regimes of professional knowledge production, sharing, use and control are emerging in some PSFs. These regimes are facilitated by technology, but professionals still play the most significant role in creating, applying and distributing knowledge resources. Even though work environments are becoming more rationalised and mechanised, the essence of professional work is still the largely intangible application of individual creativity, experience and judgment. Because professionals retain their autonomy and discretion, they have remained free to devise novel and unanticipated uses for the technology. Moreover, management instruments such as KM systems are arguably facilitating professional work rather than directing it, which has produced benefits in terms of quality, productivity and efficiency for both individual professionals and PSF managers. This study seems to indicate that professional work is transforming itself and that "decustomisation" – in the sense of recycling existing knowledge by

creatively adapting it to novel contexts is a form of behaviour which has previously been overlooked in PSF research. But given that decustomisation is now so prevalent in large PSFs, can they still be defined as organisations that "apply complex knowledge to non-routine problems" (Morris and Empson 1998: 610)? More broadly, will such decustomisation lead to "fissuring the professional-knowledge-power knot" (Kuhlmann and Burau 2008) in society? The bureaucratisation of PSFs presents a number of opportunities for scholarly research and debate regarding the definition of professional work, and it remains to be seen how well professionals maintain their autonomy and power whilst dealing with bureaucratic demands to produce better, cheaper and more consistent services.

Acknowledgements

Table 1: User profiles

Frequency / Attitude	Non-use	Moderate use	Intensive use
Enthusiasm	**(1) Prescriber** (2 interviewees)	**(3) Satisfied user** (14 interviewees)	**(5) Unconditional user** (12 interviewees)
Illustration with selected interview excerpts	(Pierre, Partner) - "Me? No. I never use it directly. I ask [name of a junior lawyer] to go and find stuff in it for me. Because, you know, I always forget my password."	(Hélène, Junior) – "Well, if it's something repetitive, well known and if there are models available, I am not going to recreate things from scratch. That would be totally stupid, and a waste of time […]. The knowledgebase is very important, you know. When I did my job interviews, it's something that I considered. Not something fundamental but important. Because there are law firms where you get nothing like this."	(Frank, Senior Manager) – "I generally find what I am looking for [in the KMS]. 'Boiler-plate' clauses, for instance, which we find in every contract [...]. You read them, and if they look all right, all you have to do is copy and paste."
Hostility	**(2) Boycotter** (1 interviewee)	**(4) Frustrated user** (7 interviewees)	**(6) Schizophrenic user** (5 interviewees)
Illustration with selected interview excerpts	(Bertrand, Partner) - "I have never ever opened the database. You can check it out if you want." (Researcher) – "But do you prescribe its use to the juniors with whom you work?" (Bertrand, Tax Partner) – "No. It's their problem if they want to use it."	(Henri, Director) – Am I a user of the knowledgebase? Only under duress […] My feeling is that this database is useless. […] The whole thing is messed up. […] It was supposed to be for knowledge sharing but he [the firm's managing partner] uses it for policing people."	(Sabine, Senior Manager) – I use certain things in the knowledgebase, especially when I work with [name of a partner whom we did not interview], but only things written by people I know and trust. […] Because the database is loaded with errors. You find lots of things that are not technically sound."

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Notes

[i] First generation KM systems are also referred to as "people-to-document" KM systems in the literature (Hansen et al. 1999).

[ii] Other researchers who have analyzed the evolution of control types in the context of professional services have used similar typologies. For example, Kuhlmann and Burau (2008) used the classification "hierarchy, network and self-regulation", which is very similar to Hopwood's (1974) scheme.

[iii] Production technology refers to "the actions that an individual performs on an object, with or without the aid of tools or mechanical devices, in order to make some change in that object. The object [...] may be a living being, human or otherwise, a symbol or an inanimate object." (Perrow 1967: 195-196).

[iv] Abbott (1988: 40) explains that professional work always consists of three phases: "diagnosis, inference and treatment."

[v] Abbott (1988) prefers to use the expression "professional knowing", rather than "professional knowledge", since the latter implies that knowledge is reified but the former better suggests its transitory nature and its continual enactment and re-enactment each time it is applied. However, for the sake of readability and simplicity, this paper uses the term "professional knowledge" consistent with its common sense meaning.

[vi] Note that Suddaby and Greenwood (2001) refer to "management knowledge" commodification in their paper, rather than "professional knowledge" commodification.

[vii] An ongoing debate in the knowledge management literature concerns the definition of organisational knowledge (Hsiao et al. 2006). Is organisational knowledge a commodity, a mode of cognition or a capability? This paper does not attempt to resolve this epistemological dispute. Rather, it analyses the use of first-generation KM systems, which view organisational knowledge as a commodity. Consistently, "knowledge" is referred to as the codifiable output of a learning process. The analytical dichotomy between knowing as a process and knowledge as an output of that process does not necessarily imply an ontological separation between the two.

[viii] Freidson (1986: 213), citing Wilding (1982), identifies various areas in which power can be exercised by professionals: "[t]here is power in policy making and administration, power to define public needs and problems, power in resource-allocation, power over clients, and power to control work". Because ordinary members of the professions – such as the lawyers interviewed for this study are not typically involved in policy making, administration or defining public needs, this study focuses on professionals' power to exclusively control their work outputs.

[ix] Constructing a personal database from the KM system distorts system use statistics, because once a downloaded document is stored on a local hard disk, it can be reused any number of times without that use being acknowledged and measured.

[x] In 2005, the average number of documents downloaded per lawyer per month was 38 for juniors, 77 for seniors, 50 for supervisors, 20 for managers, 7 for senior managers, 4 for directors and 5 for partners.