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Knowledge management challenges in small professional services firms Action research in China

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Published: 07/08/2009

Document Version:

Post-print, also known as Accepted Author Manuscript, Peer-reviewed or Author Final version

Publication record in CityU Scholars:

[Go to record](#)

Publication details:

MARTINSONS, M. G., DAVISON, R. M., & HUANG, Q. (2009). *Knowledge management challenges in small professional services firms: Action research in China*. Paper presented at 2009 Academy of Management Annual Conference, Chicago, United States.

Citing this paper

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KNOWLEDGE SHARING CHALLENGES IN SMALL ENTERPRISES: EVIDENCE FROM TWO ACTION RESEARCH CASES IN CHINA

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ABSTRACT

Knowledge management remains poorly understood in the context of both small organizations and China. This paper reports and reflects on knowledge management initiatives in two small professional services firms in China. Each deployed an IT-based knowledge management system. Both projects were well managed and the professional employees espoused a willingness to share knowledge, but there were no significant improvements in formal knowledge transfer or work productivity. Technical issues, such as insufficient Internet bandwidth and inadequate maintenance were encountered, but the primary challenges to effective knowledge management were cultural factors, such as the leadership styles, the commitment of employees, and the incentive systems existing in the two firms. The findings are analyzed and interpreted from cultural and institutional perspectives in order to draw implications for knowledge management in small-sized professional services firms in China and to guide future research and practice.

INTRODUCTION

Knowledge is asserted to be a growing source of competitive advantage (Drucker, 1993). Both the professional and academic literatures suggest that knowledge management (KM) has become an increasingly important business activity (Kearns and Lederer, 2003; Bruton et al., 2007). A query of the ABI Inform Global Database for “Knowledge Management” (KM) produces over 16,000 items, while a similar search on Google Scholar produces nearly 250,000 items. This KM literature considers many issues, but is informed primarily by the experiences of large organizations in Western countries (especially the U.S.) such as IBM and Nortel (Chua and Lam, 2005; Massey et al., 2001; 2002).

The KM literature tends to focus on the successful capture, retention, processing, and reuse of explicit knowledge, which is easier to identify and codify than tacit knowledge (Stover, 2004). KM failures are seldom reported (see Storey and Barnett, 2000 for a notable exception). We also know relatively little about KM practices in both small organizations and less developed parts of the world (Atherton, 2003; Empson, 2001). This is unfortunate given the global economic importance of both small businesses and emerging markets.

This paper focuses on KM efforts in two professional services firms that operate in China and have less than 40 employees each. To maintain confidentiality, the consulting firm is called Gamma and the executive search firm is given the pseudonym Theta. Given the limited research to date on KM in China, our primary research question was exploratory, viz.: What are the challenges when IT is used to support the management of distributed knowledge in smaller-sized Chinese professional services firms?

Our paper is structured as follows. Following this introduction, the literature review outlines previous research on KM challenges, and then focuses on knowledge sharing in the Chinese context. The research methods section summarizes the Canonical Action Research (CAR) method which supported the intervention in both case studies. We outline our findings

from the two cases, highlight the similarities and differences between them, and then discuss the key issues associated with KM in the Chinese context. This leads us to consider how KM projects may unfold and be better supported in small-sized Chinese firms. The article concludes with suggestions for further research and an exposition of the strengths and weaknesses of using action research to study KM.

LITERATURE REVIEW

Knowledge sharing is a crucial activity for organizations because it enables them to identify, promote and spread best practices while improving productivity (Hansen, 2002). This should be true for organizations everywhere given the common quest for more effective and efficient work practices. Indeed, firms in knowledge intensive industries may become uncompetitive if their workers insist on guarding or hoarding personal secrets (e.g. Lu et al., 2005; Lowendahl et al., 2001). Spender and Grant (1996) argue that knowledge is the key source of competitive advantage, even though it may decay with time.

Many organizations have undertaken formal KM projects and introduced KM systems (KMS) in order to identify, share and exploit their knowledge assets. However, these efforts are not always successful in meeting deadlines, budgets, and the expectations of both sponsors and users. KM projects may fail “even when they are reasonably well resourced and there appears to be ample commitment from top management” (Storey and Barnett, 2000, p. 155). The reluctance or inability of employees to share their knowledge is also well documented (e.g. Davenport et al., 1998). This reluctance is due to a multitude of factors, including selfishness, power, economic self-interest, as well as organizational and national cultural factors.

Chua and Lam (2005) applied inductive analysis to five KM failures in large Western multinational enterprises. They identified four categories of failure factors: technology,

culture, content, and project management. The technology category refers to infrastructure, tools and technology and includes issues of poor connectivity (such as bandwidth limitations); difficult usability; over-reliance on KM hardware; and excessive maintenance costs. The culture category refers to the softer aspects of human and organizational behaviour and includes issues of politics; knowledge sharing; self-perception (especially by those relying on the knowledge of others); and management commitment. The content category refers to the characteristics or properties of the knowledge itself and includes issues of coverage (which can be insufficient or fragmentary); structure; usefulness (especially in terms of relevance and currency); and knowledge distillation (which is critical to extract value from lengthy documents and general discussions). The project management category refers to the planning, organization and control of a KM project and includes issues of user involvement; technical and business expertise; conflict management; rollout strategy; cost control; project evaluation; and the involvement of external consultants.

Chua and Lam (2005) were unable to identify a singular set of factors that were responsible for failure across all five cases. However, they did conclude that: technology issues can be a major obstacle to KM success; cultural challenges can occur at three different levels – personal, group, and organizational; content can cause a KM effort to fail if it has inadequate coverage, is outdated, is irrelevant or is poorly structured; and KM projects are similar to other IS projects in terms of being deterministic, milestone-driven ventures.

Chua and Lam (2005) recognize that factors such as alignment of KM efforts with organizational goals, a clear vision for KM, commitment to and support for KM from senior management, and a culture that encourages knowledge sharing contribute to KM success. However, they admit that their analysis of the five failure cases “has inevitably obscured the nuances found in individual KM projects” (p.15). They recommend more intensive case

studies “to validate, refine or add to the overall completeness of the model” (ibid, p.16) and go on to suggest further research of KM in different organizational and social contexts.

KM in the Chinese context has not been studied frequently. A wide-ranging search for the three terms “knowledge management”, “knowledge sharing” and “China” across several English-language databases uncovered only a dozen peer-reviewed articles of substance. These articles tend to focus either on comparing China with other countries (Burrows et al., 2005; Chow et al., 2000; eWeir and Hutchings, 2005) or on the transfer of knowledge to China (Li and Scullion, 2006; Hutchings and Michailova, 2004).

These studies tend to be driven by Western theories and assumptions. They are examples of the etic perspective that Davison et al. (2008) criticize for rather naively looking at China from the outside, rather than studying China from the inside. Prominent exceptions are Lu et al. (2005), which, although applying Western theory, compares two linked, China-based studies of managers sharing knowledge; and Burrows et al. (2005), who characterize the prevailing approach to KM in China and contrast it with those found in the US and Japan.

Since the late 1990s, there has been increasing attention to knowledge management issues in the Chinese language literature. However, the Chinese language literature on KM tends either to follow Western precedent and theory or else prescribe how KM initiatives *should* be implemented in the Chinese context (cf. Gao and Gu, 1998; Wang, 2001; Zhu, 2004). Very few studies focus on how KMS *have been* implemented in China, and *what really works* or does not work in the Chinese business context.

The limited literature on managing knowledge in the Chinese context also follows the Western tendency to report on successful cases rather than failures. The extreme sensitivity to criticism and failure in the Chinese context represents a formidable obstacle to publishing cases that are not successful, even if a firm is anonymised. Voelpel and Han (2005) implicitly recognise this cultural barrier when they note that the Chinese avoid making mistakes in

public in order to save “face” (Ho, 1976) and have a strong desire to hoard knowledge within the in-group.

The critical role of KM to organizational competitiveness and success is widely recognised in China (Burrows et al., 2005; Voelpel and Han, 2005). Nevertheless, it is generally acknowledged that Chinese firms trail their Western counterparts in (formally) implementing KM initiatives (cf. Burrows et al., 2005). Indeed, Teleos, in its annual Global MAKE (Most Admired Knowledge Enterprise) awards, has never selected a firm from China, though Lenovo was a finalist in 2007 for the Asian MAKE Award (Teleos, 2008).

Wang (2002) attributes the trailing status of KM initiatives in China to: inappropriate alignment between KM initiatives and the firm’s core business, inadequate planning and poor resource allocation, and a lack of KM expertise leading to the inappropriate use of management tools. The first of these factors is among the general contributors to KM success cited by Chua and Lam (2005) while two of the other three factors clearly fit into their project management category. Remarkably, none of the factors mentioned by Wang (2002) fit into the technology, culture or content categories of Chua and Lam (2005).

However, the important roles of both culture and technology have emerged in several studies of KM in China that have been published since 2005. The remainder of our literature review focuses on these recent studies. KM success clearly requires organizational members to share knowledge. Knowledge sharing is likely to be influenced by a variety of socio-psychological factors such as incentives and personality characteristics as well as the organizational and societal culture.

The salient features of the Chinese culture include: high degrees of collectivism and power distance (Hofstede, 1991); strong Confucian Work Dynamism (Chinese Culture Connection, 1987); and the need to develop and maintain “face” (Ho, 1976). The Chinese are more likely to share knowledge within an in-group because of their sense of obligation to an

in-group's members (Chow et al., 2000). The in-group comprises family and friends or a set of colleagues with whom one interacts regularly. In China, knowledge sharing tends to be easier within an in-group than outside of it (Triandis, 1989) not only because the activity enhances personal reputation or "face", but also because it fits with the preference for informal and implicit forms of communication (Martinsons and Westwood, 1997), where knowledge is transferred "through interpersonal contact, rather than through formal and/or written means" (Burrows et al., 2005). Interpersonal, in-group contacts tend to be among peers or top-down: Older Chinese managers are particularly reluctant to accept knowledge from their subordinates (Hong and Engestrom, 2004; Martinsons and Westwood, 1997).

Voelpel and Han (2005) studied the use of Siemens' proprietary KMS "ShareNet" in China and found a significant in-group/out-group distinction despite the strong influence of a German-originated organizational culture that promoted knowledge sharing across such group boundaries. KMS typically do not permit contributors to discriminate who can receive the knowledge since shared knowledge becomes essentially a public good (cf. Lu et al., 2005). Within Siemens China, senior and middle managers were typically more willing to share knowledge than their subordinates. This may be attributable both to a natural sense of modesty (Kurman, 2003) and greater comfort in codifying knowledge in English – ShareNet's working language.

With respect to the antecedents of the propensity to share knowledge, two key studies in the Chinese context merit consideration. Firstly, conceptualizing knowledge as a public good, Lu et al. (2005) identify greed and self-efficacy as two proximal determinants of knowledge sharing. Greed implies obtaining others' knowledge without any form of reciprocation, while self-efficacy, the belief in one's capability to take an action so as to achieve a pre-specified goal (Bandura 1997), is related to co-worker collegiality and interpersonal trust. As Lu et al. (2005) remark, "positive interpersonal relationships are

conducive to ... knowledge sharing". The importance of interpersonal trust "as a critical social resource that facilitates cooperation and coordinated social interactions" (McAllister, 1995) has also been recognised by Newell et al. (1999) who suggest that positive interpersonal interactions can facilitate knowledge sharing. Meanwhile, co-worker collegiality appears to be particularly effective in motivating knowledge sharing.

Secondly, Huang et al. (2008) consider the impact of management style, based on the concepts of considerate versus initiating structure (Robbins, 1997), and interpersonal trust on the willingness of Chinese workers to share knowledge with their peers. Management style was found to affect the intentions of employees to share knowledge, especially if it supports the development of interpersonal trust. However, it is not enough for managers merely to encourage knowledge sharing: they need to facilitate and mandate it through an initiating structure (Robbins, 1997) to ensure frequent interactions between knowledge-sharing peers.

Thus, management attitudes towards, and encouragement of, knowledge sharing are important in China (Huang et al., 2008). This parallels US evidence (cf. Davenport et al., 1998) that sanctions (both positive and negative) are useful in persuading employees to cooperate in their organizational work. Bock and Kim (2002) suggest that knowledge sharing should be rewarded and knowledge hoarding penalised. These measures, collectively, provide a supportive culture for KM which can be further enhanced by "systematic efforts to recruit, select and socialize employees willing to share their knowledge" (Burrows et al., 2005).

Apart from a nurturing a supportive culture, knowledge sharing can be stimulated by providing high quality content identified through a KMS that saves employees considerable amounts of time and effort in solving problems, and thus enhances their productivity. For example, Siemens' ShareNet system functioned as an expert directory. Employees in China used it to identify potential experts when online discussion was inadequate to solve a problem (Voelpel and Han, 2005). When ShareNet was first set up, large incentives were provided to

employees to share their knowledge. The sharing, distributing and reusing of knowledge, as well as the answering of questions, led to points being awarded on an individual basis. These points could be redeemed for various rewards such as gifts and trips. Significantly, the financial value of the rewards was less important to most knowledge contributors than their symbolic value, denoting the effort made or loyalty shown by the employee.

Technology can also contribute to KM success. IT applications include items of hardware (especially intranets), software (such as formal knowledge management systems, web pages of experts or knowledge bases that actively capture knowledge from specific work processes), and communication and collaboration systems (such as email, groupware, discussion forums, social networking applications like blogs and wikis) (cf. Bollinger and Smith, 2001). These types of IT applications should be useful in assorted contexts, so long as they are used and maintained. Unfortunately, many IT applications designed to support KM are neglected after an initial honeymoon period, especially if content is not kept up to date or if the system is not deeply embedded into business processes (cf. Storey and Barnett, 2000).

IT can clearly facilitate the sharing of explicit knowledge. Alavi and Leidner (2001) suggest that IT applications commonly enable: the codification and sharing of best practices; the creation of knowledge directories, which involves the mapping of expertise and encouraging knowledge reuse; and the creation of knowledge networks that bring people together to communication, face-to-face or virtually.

However, the role of IT for KM in China is less clear, because the tacit knowledge that is typically shared by the Chinese is not readily codifiable in a knowledge base (Burrows et al., 2005). Although IT applications are increasingly common in China (Martinsons, 2005), their use to support knowledge transfer remains rare. Lu et al. (2005, p.27) suggest that IT is a prerequisite for effective KM, since it enables “collaboration among different units and individuals unconstrained by the boundaries of geography and time”. However, interpersonal

socialisation remains a more effective motivator of tacit knowledge sharing than IT deployment: “In the digital era, there is still no substitute for the motivational effects of human bonding and social connectedness” (Lu et al., 2005, p.33).

RESEARCH METHODS

Action Research (AR) refers to a family of about a dozen similar research methodologies that can be traced to the work of Kurt Lewin (1947a, 1947b) and researchers at the Tavistock Institute (e.g. Trist and Bamforth, 1951). AR aims to solve organizational problems while simultaneously contributing to both scholarly and practical knowledge. Canonical AR (CAR) is unique due to its “iterative, rigorous and collaborative process-oriented model” (Davison et al., 2004). CAR involves cycles of intervention; through a succession of problem solving cycles (seldom only one), activities are designed to address organizational problems. The rigor of CAR is assured by two key components: iteration and engagement. Researchers iterate through carefully planned and executed cycles of activities, simultaneously improving their understanding of a problem and addressing it. By engaging the organization and its members continuously in a process of problem diagnosis and assessment, future activities are always tailored to the current reality. Action researchers thus ensure that their work is both realistic and relevant, while high standards of rigor are maintained (cf. Benbasat and Zmud, 1999).

CAR is premised on a combination of theory and practice “through change and reflection in an immediate problematic situation within a mutually acceptable ethical framework” (Avison et al., 1999, p.94). CAR has the “dual intention of improving practice and contributing to theory and knowledge both within and beyond the immediate confines of the project” (Davison et al., 2004). As a collaborative methodology, one or more researchers work together with organizational members to achieve a mutually beneficial outcome. Given

this and variable organizational conditions, researchers are seldom able to (and arguably should not) exert complete control over interventions (cf. Davison and Vogel, 2000; Mumford, 2001).

With CAR, detailed plans are not drawn up in advance. Instead, researchers develop directional plans and subsequently flesh out the intervention based upon the circumstances. They shun a simple adherence to pre-determined techniques and styles of inquiry (cf. Descola, 1996). A successful CAR project reveals a detailed picture of a specific organizational problem situation, tracking organizational change processes in detail and so producing outcomes that are relevant for clients and that inform research knowledge (McKay and Marshall, 2001).

Davison et al. (2004) developed a set of five principles and thirty one associated criteria to guide CAR. They cumulatively help to ensure both that researchers understand how to conduct CAR, and to ensure that readers know both what to expect in a CAR paper, and how to interpret CAR papers. We will not list out all the principles and criteria due to space limitations here, but it is useful to summarize what guided the two cases that we studied. The five principles are:

- The principle of a researcher-client agreement;
- The principle of the cyclical process model;
- The principle of theory;
- The principle of change through action;
- The principle of learning through reflection.

The researcher-client agreement (RCA) is fundamental to the successful outcome of the CAR project. It contains many details about how the CAR project should be conducted, the responsibilities of the various stakeholders, the sources of data, and measurements that will be made. A good RCA should enable researchers and clients to trust one another, promoting a spirit of shared enquiry.

The cyclical process model (CPM) loops through the stages of diagnosis, planning, intervention, evaluation and reflection as proposed initially by Susman and Evered (1978). Each of these five activities is critical to CAR success and progressing sequentially through the CPM helps ensure that a CAR project is conducted with systematic rigor.

Another principle suggests that theory is critical to CAR, but must be imposed sensitively. CAR may start out with theory-free action learning (another member of the AR family), but if a grounded theory does not emerge from the initial research cycles, then explicit theorising is necessary before the research proceeds further. Later on, an explanatory theory may be called upon when the outcomes of the CAR are analysed. In considering the role of theory, we initially relied on two constructs from the Technology Adoption Model: the Perceived Ease of Use and the Perceived Usefulness of the knowledge sharing technology that we made available to the employees of Gamma and Theta. We believed that for knowledge workers who spend much of their time engaged in interpersonal communications, a knowledge sharing technology would need to be both easy to use and useful if it was to be used at all. In addition, and recognising prior research on knowledge sharing, we also believed that the willingness to share knowledge with one's peers would be critical to the actual use of a knowledge sharing system.

The principle of change through action reflects the critical importance of enacting changes in an organizational problem situation (Eden and Huxham, 1996; Hult and Lennung, 1980), and indeed the indivisibility of the two concepts. If change does not occur, then the CAR project is a failure; the cause may be an insufficiently serious problem or the presence of technical or political barriers that prevented change implementation.

Finally, the principle of learning through reflection epitomises the multiple responsibilities of the action researcher - both to organizational clients and to the research community of scholars. Indeed, both researcher and client should reflect on project outcomes.

At the same time, this principle also governs the reporting of research outcomes - whether as internal reports for the organization, or as research papers for the scholarly community.

Following the five-stage cycle, progress is evaluated to determine whether another cycle is required. It is rare that a single cycle can completely resolve the problem (cf. Davison and Vogel, 2000).

BACKGROUND AND ORGANIZATIONAL CONTEXTS

Subjective intervention by a researcher is an integral part of AR. If a researcher does not intervene subjectively, it is hard to interpret the emergent events and to recommend further changes. Nevertheless, these changes need to be negotiated between researcher and client organization rather than being imposed on the organization unilaterally by the researcher. Furthermore, while our research sought to answer specific questions, we were open to the emergent and constantly shifting nature of the organizational context. Following Descola (1996), we did not blindly adhere to pre-determined techniques and styles of inquiry. Instead, we were open and receptive to the infinite variety of natural circumstances.

Gamma Consulting

Gamma Consulting is a traditional Chinese family business that provides professional advice on a variety of human resource management (HRM) issues. Reflecting the power distance and uncertainty avoidance that exemplify traditional Chinese management (cf. Martinsons and Hempel, 1995), the two brothers who established the firm in the late 1990s continue to dominate it with a highly directive style. Qualified professionals are employed by Gamma to complete various projects that have been generated by the brothers or their kin. The firm's office on the outskirts of Shanghai has a serious business atmosphere and disciplined work practices based on informal controls.

In June 2007, Gamma introduced KnowledgePro. This commercial software package was designed to capture and organize the core HRM knowledge and heuristics that the firm has relied upon to solve client problems. The decision to introduce KnowledgePro software was made solely by the two brothers who established the firm and now manage it. They received advice from an external consultant (a co-author of this paper) on several items. Firstly, the current situation was diagnosed in order to provide a good understanding of the nature of the problem. Secondly, the software was supposed to fit into the concept of a broader knowledge management “system” (KMS), which included appropriate hardware, policies/procedures and user training. Thirdly, the implementation of the entire KMS should be managed systematically and carefully. As a result, a clear roll-out plan was developed while both costs and time schedules of the systems implementation project were strictly controlled. For example, some competing software was removed from the firm’s computer servers at the time when the KnowledgePro-based KMS was deployed officially.

Remarkably, the brothers managing Gamma repeatedly resisted suggestions to involve their professional employees in various aspects of systems planning and implementation. Reflecting the high power distance of the traditional Chinese management culture (Martinsons and Hempel, 1995), they insisted on exercising their managerial prerogative in making all the key decisions with respect to the KMS. One of the brothers asserted that since Gamma “was a family company, only family members had the right to make the big decisions”.

The AR method was essentially abandoned when the brothers admitted that their primary goal for the KMS was to bolster their corporate image, viz.: “running a modern business”, rather than to improve the levels of knowledge transfer and work productivity.

In the first few weeks after the KMS was deployed, the employees nominally obeyed the founding brothers, uploaded some basic “knowledge” into the KnowledgePro software.

There were also several instances where consultants told the brothers that they had extracted useful knowledge from the system. However, the action researcher subsequently discovered that this apparent compliance was little more than ingratiation, having little to do with reality. The IT application was, in fact, used rarely, because it was easier to get the same (or more nuanced) knowledge from a co-worker or another person. The two brothers seemed to be the only ones who believed that application would deliver significant long-term benefits provided that the professional knowledge was entered regularly and kept up to date.

Theta Associates

The organizational culture of Theta Associates was more distinctive. When we first discussed the AR project, there were two Managing Directors (MDs) – Ryan and Carl - both based in Hong Kong. Ryan was also responsible for the Beijing office, travelling there once a week, while Carl had similar responsibility for the Shanghai office. Ryan is a long time resident in Hong Kong, and close to retirement age. Carl is somewhat younger (in his early 50s), originally from Shanghai but also long resident in Hong Kong. Ryan was the KM project ‘champion’. Later in the project, two new MDs - Jeff and Mary - joined Theta. Jeff and Mary are both Hong Kong Chinese, with Jeff more focused on human resources issues and Mary on executive recruitment in the telecommunications sphere. Neither held specific office responsibilities in China at the time of the project.

Theta has two primary groups of employees: consultants (also known as ‘billers’) and researchers, with the latter supporting the former who also generate business for the firm. Much of a consultant’s income (40%-100%) comes from commission, whereas researchers are compensated with a fixed salary. Consultants are thus strongly motivated to generate new business. Their association with the firm may help them to secure new business, but they displayed little loyalty to it. The notion of in-group membership did not seem applicable to

the consultants since they acted as highly independent contractors rather than employees oriented towards teamwork or the firm.

In 2004, Theta acquired an IT application called Deskflow. The software is designed to manage the curricula vitae of all the candidates who are considered by Theta for executive positions in their clients. When the research project was initiated, the software was hardly used – each consultant collected soft or hard copies of curricula vitae. These were seldom entered into Deskflow, with the result that no one else could ever find the details. Apparently, there were thousands of hard copy printouts of CVs awaiting entry. Consultants and researchers alike almost never (with a couple of exceptions) used this system – they complained that it was too complex, too tedious to enter the details. The two active users disagreed, pointing out the tremendous benefits that could be achieved if data was entered regularly and kept up to date.

RESEARCH PROCESSES, OUTCOMES AND ANALYSIS

At the outset of our AR projects, we recognized the difficulties that might be faced in persuading Chinese employees to share knowledge with one another. Our understanding of these difficulties has been significantly enhanced, but each project ultimately failed to some extent.

At Gamma, top management (the two brothers) demonstrated a clear commitment to the KMS implementation and took steps to address various technology and project management issues. However, they were more interested in using the existence of a system to bolster their marketing and sales activities (which they personally undertook) than to improve the productivity of their professional employees. They did little to develop either commitment to or enthusiasm for the system among its intended users. They also devoted little attention to the soft factors that can make or break a KMS (Chua and Lam, 2005),

especially after they abandoned the iterative and consultative AR approach in favour of a more traditional and linear approach to systems implementation.

Knowledge sharing was a critical success factor for the professionals employed by Gamma. Nevertheless, they contributed to and used KnowledgePro in a limited way at best. From the beginning, they were clearly unenthusiastic about the KMS. However, some knowledge sharing and extraction efforts were made in the first few weeks after implementation. This was at least partly due to a sense of obligation within the hierarchical structure at Gamma. The attitudes of the professional employees towards the management-imposed system became more negative when the levels of maintenance and support were reduced after the initial two month contract with the software vendor expired.

The professionals working for Gamma clearly preferred to obtain knowledge on an as-needed basis from other people. They commonly consulted one or more colleagues, choosing those who they believed were both knowledgeable about the subject of interest and willing to share their knowledge. Face-to-face interactions were common within Gamma's office. However, many employees, especially the younger ones, were more comfortable using instant messaging tools such as QQ and Windows Live Messenger. They commonly complained that Gamma's IT systems were frequently unavailable and that the response time of the Internet/Intranet was frustratingly slow. By the fall of 2007, three months after the IT-based KMS was deployed, it was essentially abandoned.

The KM effort at Gamma Consulting was based on a clear vision and aligned with organizational goals. It also had the commitment and support of top management. The technology factors were favourable. Meanwhile, the KM project management adhered to (Western) textbook guidelines with the notable exception of user involvement. In terms of the Chua and Lam (2005) framework, the failure in this small Chinese professional firm was due primarily to cultural factors.

At Theta, the project was started in November 2005 and had met its demise by the summer of 2007. Throughout this time period, insufficient progress was made in developing and rewarding a knowledge culture or encouraging knowledge sharing behaviour. A thorough diagnosis of the situation at Theta provided a good understanding of the problem. However, the problem itself proved to be intractable, for reasons that include both technical issues and cultural challenges (Chua and Lam, 2005). These included the limited reliability of the Internet in China, the personal work habits and attitudes towards knowledge sharing, and the organizational culture of Theta.

Firstly, the slow Internet speed frustrated efforts to encourage more people to access the knowledge sharing platform that we set up. In Beijing, public Internet connectivity was often so slow as to be essentially unavailable – it took several minutes or longer for a webpage to load. Shanghai had better connectivity, but there were still substantial delays in accessing web pages. Even when we increased the bandwidth and speed substantially using a free trial of a leased line from a Hong Kong Network Service Provider, the employees used the discussion forum infrequently. In subsequent conversations with the Beijing and Shanghai employees, we learned that they expected essentially instantaneous access to websites.

Secondly, ingrained work habits were hard to change. Despite our frequent visits to the Hong Kong, Beijing and Shanghai offices and many conversations with employees at all levels, we were unable to elicit a core set of organizational values for Theta. However, its organizational culture was decidedly ‘laissez-faire’ – as long as work was completed at appropriate levels of compliance to company norms and new clients could be identified so as to guarantee future work, employees (and particularly consultants) could work as they liked.

The failure at Theta to use the software illustrated the difficulties that might also affect a knowledge sharing project, since the principle of entering data paralleled that which would be necessary in a knowledge sharing system. Theta’s culture was not necessarily anti-

knowledge sharing (at least we have no evidence to make such a claim). Many of its professionals espoused an interest in sharing knowledge at least once a week when we interviewed them – subject to work constraints. However, these constraints appeared to be significant: sharing was commonly perceived to take up (too much) time that the professionals, particularly the consultants, preferred to spend on revenue-bearing work.

The personal benefits for senior employees to share their knowledge were unclear. Conversely, the junior researchers frequently told us how much they appreciated receiving in-depth knowledge about specific clients (know-who) and industries (know-what). This supports the contention of Burrows et al. (2005) that socially-connective know-who information is critical for business success in China. Firms like Theta rely extensively on social networking to identify both new clients and the candidates to fill the positions.

Thirdly, we were disappointed with the limited enthusiasm displayed by Theta's MDs. Ryan asserted his commitment to the project, but never did more than gently encourage his fellow MDs or other Theta employees. He lacked the charisma to change the behaviour of his "followers". Ryan claimed that he was "not in a position to mandate use of the KMS", and fully expected that there would be a long struggle to persuade potential users of its benefits. Mary privately indicated a strong interest in knowledge sharing, recognising its benefits for the firm. However, she did not follow up with more concrete action. Carl and Jeff paid little attention to the KM project. As the hands-on manager of the Shanghai office, Carl could have encouraged his staff to use the discussion forum, but he chose not to do so.

The absence of a project champion willing to push for increased knowledge sharing behaviours undoubtedly contributed to the KM failure. In terms of strategic management issues, Theta appeared to be both polycephalous and, paradoxically, acephalous: it had four MDs, but no paramount leader. Unlike Gamma, Theta is not a family firm, but rather a local franchise of a global firm. None of the four MDs assumed a strategic management role in

mapping out, let alone planning, the future direction of the firm – which they could have done, since local franchises had considerable flexibility to manage their own operations and strategic direction. Instead, all four acted primarily as senior consultants and “rainmakers”, generating business and managing highly independent projects.

Ryan accepted the role of project champion, but he did not, could not or would not devote sufficient time, energy and resources to the project to ensure its success. As long as the project did not step directly on others’ toes, he felt free to encourage involvement, but where more commitment was needed, he needed to persuade the other MDs of the need - and this he failed to do. Ultimately, after a series of pilot tests with borrowed technology, Ryan unilaterally decided that the entire project should be put on ice – indefinitely as it turned out – and so the project’s demise was sealed.

DISCUSSION

Poor strategic management was a significant cause of the KM project failure in both cases. At Gamma Consulting, the KM project failed because it did not fit the existing culture, and very little effort was made to change that culture. The traditional Chinese management system (Martinsons and Hempel, 1995) made it easy to initiate a large change and implement a new KMS based on the two brothers’ vision and objectives. However, the high power distance associated with this type of management system precluded the meaningful involvement of users in the system’s planning and design.

The management and culture at Theta was very progressive for China. The laissez-faire culture is atypical in a society characterized by status-oriented hierarchies (Burrows et al, 2005) and transactional leadership (Huang et al., 2008). The KM failure in this case was due to a lack of strategic leadership. We could not discern a clear business vision or specific long-term objectives in Theta. Instead, the emphasis was on identifying and capitalizing on a

range of market opportunities. Consequently, the objectives of the KMS did not focus clearly on improved work productivity. Instead, they were limited to a rather generic desire to enhance the corporate image (which was most clearly evident in the Gamma case) and improve intra-organizational communications (which may make Theta more efficient).

In terms of the four categories of KMS issues delineated by Chua and Lam (2005), the primary challenges found in these two cases resulted from deeply-embedded cultural factors. However, they reflected two very different sets of cultural shortcomings or challenges. Taken together, we assert that weak leadership, inadequate institutional mandates, inadequate user involvement (especially at early stages of the process) and the lack of incentives can all inhibit or limit knowledge sharing. Some technical issues, such as insufficient Internet bandwidth and inadequate maintenance also existed. Remarkably, project management and content issues were less evident, perhaps due to our application of the CAR methodology.

The significance of the cultural obstacles to knowledge sharing merits further discussion. The professionals involved in both cases widely perceived their knowledge to be a personal and informal resource. The employees of Theta tended to espouse a greater willingness to share knowledge, especially with their (in-group) colleagues, than did their counterparts at the more traditionally-managed Gamma. However, there was a common distaste for formal knowledge codification. In neither case was management able to mandate or encourage sufficient knowledge contributions from their professional employees.

Nevertheless, the younger employees in both firms actively used IM tools such as QQ and Windows Live Messenger in a conversation-based knowledge sharing approach while the older ones tended to rely more on face-to-face and telephone conversations. However, even these non-traditional IT applications were effective only when technical issues associated with systems support and network bandwidth could be resolved. Such an informal approach to knowledge sharing requires less infrastructural support and depends primarily on the

willingness of individuals to share. This is important for small enterprises like Gamma and Theta, which generally lack the resources (cf. Sadler-Smith et al., 1998) to develop knowledge management opportunities.

Small professional services firms can rarely assign more than a single employee to maintain and support a system so their KM initiatives must essentially be self-sustaining. However, the relatively small number of potential knowledge contributors and users make it harder to develop the critical mass needed to sustain a KM initiative. The volume of knowledge that can be shared within the organization is thus comparatively small, limiting the potential benefits. In both cases, employees overcome these limits by sharing knowledge informally with people beyond the firm.

During Theta's attempts to stimulate formal knowledge sharing within the firm, the notional project champion, Ryan, failed to get commitment from his colleagues and subordinates. Consequently, knowledge sharing did not become deeply embedded in internal business processes. Strong leadership can be helpful (as evident in the Gamma case), but clearly other issues are involved. Two of the most obvious issues are compensation/benefit structures and the development of a knowledge sharing culture.

A critical observation from our cases concerns organizational reward structures. In professional services firms like Gamma and Theta, key personnel often experience high degrees of task autonomy (Morris, 2001): they generate business opportunities and then see them through to completion. This task autonomy is generally coupled with a similarly high degree of fiscal autonomy. Several consultants/employees in both firms were compensated entirely on a commission basis – they had no basic salary component. Such individuals earn income based on their private knowledge and so had no fiscal incentives to share that knowledge. The professionals who most vigorously supported the knowledge sharing initiative were, paradoxically, those who had least to share, but most to gain: the younger and

more junior staff, in particular the researchers. Consistent with Morris (2001), they believed that codified knowledge would significantly influence their ability to work productively on standardised, but unfamiliar tasks, as well as in solving simple problems.

Theoretical Interpretation

Our findings can be interpreted from various perspectives. The Theory of Planned Behaviour (Ajzen, 1991) could be applied to relate the observed (lack of formal or systematic) knowledge sharing to attitudes, social norms and perceived behavioural controls. Alternatively, Social Network Theory would focus on the attributes of individual actors (the assorted managers and professionals in the two firms) and especially the relationships between them, building on work such as Burkhardt (1994). After considerable reflection and discussion, we decided that it would be most valuable to consider our findings from a cultural perspective (cf. Hofstede, 1991, 1998) and also using institutional theory (Scott, 1995).

Knowledge sharing will not happen on its own or as a result of managerial fiat. The mere presence and gentle encouragement of champions (like the two brothers at Gamma and Ryan at Theta) is insufficient. Beneficial knowledge sharing requires a supportive organizational culture that includes appropriate values and reward structures. This culture must pre-exist or be established.

Given how cultural values exert an influence on the willingness of employees to share knowledge with one another (cf. Hofstede, 1991, 1998) and drawing upon the findings from studies of KM in China (including our two CAR cases), we suggest that a moderation in cultural values provides the best context for successfully implementing KM initiatives – in any society. A number of difficulties (see Table 1) may arise if the prevailing culture is extreme on work-related values such as power distance, individualism/collectivism and uncertainty avoidance (Hofstede, 1991).

Insert Table 1 about here

In professional services firms like Gamma and Theta, individual consultants experience considerable work autonomy. They generate business for the firm and then execute those opportunities. Excessive management control (characteristic of high power distance) may be met with fierce resistance. However, if management fails to mandate knowledge sharing, then it is unlikely to occur. It is therefore necessary to achieve a balance between mandating a specific type of KM and respecting consultant independence. In Gamma, the brothers mandated the use of a KMS based on the KnowledgePro software, but they were unable to enforce this mandate. In Theta, one MD (Ryan) championed the KM project, thereby exercising his authority, but he was unable or unwilling to mandate actual KM system usage, instead believing that a gentle and persistent campaign was necessary, probably over a long period of time. Employees rarely articulated their opposition to a knowledge sharing. In this way, the 'face' of management was preserved. At the same time, few employees, particularly at senior levels, were enthusiastic: there was essentially an atmosphere of indifference, a passive form of resistance.

The professionals working for both firms, particularly those hired by Theta, espoused a willingness to contribute knowledge. Simple forms of knowledge and information sharing were already facilitated by instant messaging tools like QQ and Windows Live Messenger. This informal and unauthorised online chatting was predominantly the preserve of the younger professionals, the junior consultants at Gamma and the researchers at Theta who assisted its consultants. The management duo at Gamma, as well as the senior consultants and MDs at Theta, perceived that online chatting hindered productivity.

Shortly before the new knowledge sharing system was implemented, the informal tools were prohibited. In assertive moves by the managements of both Gamma and Theta, specific software was removed from the computer servers. Nevertheless, the new knowledge sharing systems in both cases were used by only a few employees. Many others queried its value. Most reinstalled and continued to use their old instant messenger tools covertly. This demonstrates a dynamic tension between the espoused willingness to share knowledge and the practical difficulties of successfully implementing a new KMS.

It also suggests a resistance to change that may be related to both high power distance (Hofstede, 1991) and in-group collectivism (Triandis, 1989). The hierarchical nature of Chinese society encourages employees at the same status level to communicate informally among themselves while hindering vertical interactions with their superiors or subordinates (cf. Martinsons and Davison, 2007). Meanwhile, the in-group collectivistic tendency promotes a desire for in-group privacy that is compromised by a discussion board whose content is available to everyone in Theta.

Finally, and related to the general unwillingness to change, is the dimension of uncertainty avoidance. If there is too much avoidance of uncertainty in an organization, then there will be little appetite for risky projects such as implementing a new knowledge management system that requires significant change in the way people work. If such systems are introduced, employees will resist their usage and thus slow down the adoption. This was evident in both cases. Conversely, if employees are comfortable with uncertainty, then they will see little need for the organising potential of KMS, and so resist on the grounds that the system is unnecessary. Some professionals failed to see the need to organize knowledge systematically. It is perhaps paradoxical that both high and low uncertainty avoidance should be encountered in a single organization, but it does hint at the psychological complexity of the situation, as well as the dynamic tensions at play.

Our findings can also be interpreted using an institutional perspective. For example, institutional theory suggests that institutions operate with regulative, normative and cognitive elements (Scott, 1995). These elements operate in different way to achieve compliance through legally sanctioned rules, morally governed obligations and prevailing cultural values, respectively. The evidence for our case indicates that without any coercive mechanisms, such as rules or policies, or sanctions for contravening them, knowledge will not be shared. Neither normative mechanisms, such as expressions by the leadership that knowledge sharing was encouraged/appropriate, nor cognitive mechanisms, whereby knowledge sharing is “taken for granted” as an orthodox practice, were sufficient in either case to foster a behavioural change to accompany the introduction of the KMS.

Successful KM efforts in China are typically driven by a few exceptional people (Burrows et al, 2005) who use their personal energy and social connections to spread their enthusiasm for knowledge sharing through word-of-mouth. These exceptional people were notably absent in our two cases. The technology may have jolted the organization away from its equilibrium temporarily, but it did not take it beyond the “tipping point” (Gladwell, 2000).

In Gamma, the two brothers admitted that the KMS was more about image than productivity. This suggests mimetic isomorphism (DiMaggio and Powell, 1983) with firms seeking to establish their legitimacy in an environment where reputation and trust are very important (Burrows et al., 2005; Davison et al., 2008). Thus, the intention was not primarily to “tip” the work practices of this traditional Chinese family business, but merely to create the impression that it had passed the tipping point and become (more) modern.

In Theta, there was simply no exceptional person with the commitment to the KMS and the power, positional or otherwise, to bring about the necessary behavioural change. The project ‘champion’ did not create the institutional framework for knowledge sharing and thus the KMS ultimately failed.

CONCLUSION

Knowledge management takes on different forms in different contexts. The objectification and codification of knowledge that is commonly attempted in the American corporate world (cf. Falk, 2003) is not universally transferable. Our action research in two small professional services firms in China reveals a distinct preference for informal and unsystematic knowledge sharing using face-to-face, telephone and online conversations. In this context, knowledge is less an asset than a process (Empson, 2001; Atherton, 2001). In both cases, tacit knowledge was shared using a web-based discussion forum to supplement face-to-face conversations.

Socialization processes are an important part of effective KM in both Japan (Nonaka and Takeuchi, 1995) and China (Burrows et al., 2005; Lu et al., 2005). Even a simple discussion forum is unlikely to be used extensively when ingrained work habits and organizational values promote knowledge retention and hoarding, and when technological capabilities hinder online communication beyond peer-to-peer social networking. Ensuring that a critical mass of users and content develops is not easy due to the limited number of potential users and the lack of organizational slack. Larger enterprises can be expected to enjoy greater economies of scale and network effects by adopting and institutionalizing simple KM tools. Our study suggests that smaller Chinese firms can potentially implement knowledge sharing initiatives, but that they will have to manage critical issues such as aligning KM initiatives with core business goals and competences as well as demonstrating leadership and commitment, and allocating sufficient resources.

In using an action research design, this study has advanced our knowledge about the intricacies of communication dynamics in two small Chinese firms. The intended changes did not materialize fully in either Gamma or Theta. Nevertheless, our intensive study enabled a thorough description and explanation of the challenges faced by KM initiative at its different

stages. It also offers some suggestions or predictions of what could be done to overcome those challenges so that future initiatives may be successful. Arguably, this level of insight would not be possible with a less intensive method such as a survey with pre-set variables or even semi-structured interviews of key stakeholders. Thus, we believe that this action research has contributed distinctively to an advancement of knowledge.

Despite providing valuable insights on how knowledge is managed in Chinese organizations, and the obstacles and challenges faced by IT-based KMS, our investigation also suffers from some important limitations. Firstly, given the nature of the research design, it is risky to generalize our findings beyond the two cases. They are subject to retesting and confirmation in different organizational contexts, by studying additional cases or applying more extensive and quantitative tests such as surveys. Secondly, the theoretical foundation of the research design requires additional development. Knowledge management in China remains poorly understood and certainly merits further research. Our action research cases suggest that additional studies of both large and small organizations should use assorted methods and theoretical lenses (e.g. cultural and institutional) in order to advance and broaden our understanding of knowledge management.

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Table 1

KMS Difficulties Associated with Extreme Cultural Values

| | Too much | Too little |
|----------------------------------|---|---|
| Power Distance | KMS encourages sharing of knowledge and thus challenges the existing concentration of power. | Lack of centralized authority to integrate KM across the enterprise – without a big boss to command the staff, no one has sufficient authority to approve, sponsor and champion an enterprise-wide KM initiative. |
| Individualism | Lack of homogeneity across the enterprise hinders the acceptance and adoption of a new KMS. Lack of sharing because an individual’s knowledge is their primary source of power. Too much conflict on what constitutes knowledge in general and what is correct knowledge. | KMS may be less effective due to the proliferation of idle (non-productive) chat among in-group members. Reliance on verbal communication hinders the development of a KMS that codifies knowledge processes. Lack of constructive conflict on what constitutes knowledge in general and what is correct knowledge. |
| Uncertainty Avoidance | Unwilling to risk implementing a major change like a KMS. Resistance to new IT applications hinders KMS adoption. | Comfort with uncertainty reduces the motivation to organize and share knowledge systematically. Limited need for additional knowledge hinders KMS adoption. |