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Interpersonal Knowledge Exchange in China: The Impact of Guanxi and Social Media

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ABSTRACT

The employees of professional service firms regularly engage in various knowledge-related activities, including the seeking and sharing of knowledge with other people; we refer to this process as interpersonal knowledge exchange (IKE). Two prominent drivers of IKE in China are the socio-cultural concept of guanxi and social media. We conduct an interpretive investigation into IKE, collecting qualitative data from employees in three Chinese organizations. We explore how guanxi lubricates the social media-based communication practices that are central to IKE in China. We report and generalise our findings into theoretical propositions, discuss the practical implications, and identify opportunities for future research.

Keywords: Interpersonal Knowledge Exchange, Guanxi, China, Social Media

1. Introduction

The appropriate management of knowledge resources by organizations is critical to their competitiveness, innovativeness and economic performance (Andreeva and Kianto, 2012; Grant, 2002; Kaše and Zupan, 2009; Mills and Smith, 2011; Yahyapour et al., 2015). Consequently, researchers have investigated how organizational initiatives, team behaviour and individual employee practices relate to the management and dissemination of knowledge within and beyond organizations. Some accounts focus on the value created in Knowledge Management (KM) Systems (KMS) (e.g. Karlinsky-Schichor and Zviran, 2016), while others consider the need for specific knowledge resources (Newell and Edelman, 2008). Argote and Ingram (2000) note that the knowledge needed to complete work is rarely held by a single person. Instead, it is distributed among people and across geographic locations (Thomas-Hunt and Gruenfeld, 1998), either inside the organization or beyond it (Teigland and Wasko, 2003).

In order to access knowledge held by remote others, several strategies can be employed. Specifically, four strategies are identified by Serenko and Bontis (2016), viz.: negotiated exchange, where pairs of employees bargain over the terms of how each exchanges knowledge with the other; reciprocal exchange, where pairs of employees assume the existence of a principle of reciprocity that governs the exchange process; generalized exchange, where there is no dyadic or reciprocal arrangement, yet there is an unwritten assumption that each person who needs knowledge will get it; and productive exchange, where principles of altruism reign, each member seeking to engage collaboratively with all other members so as to achieve a common goal. The relative appeal of each strategy may depend on the cultural context. Serenko and Bontis (2016) suggest that productive exchange, based on altruism, is the most effective in terms of creating viable benefits for all employees. However, their suggestion was premised on data collected from 691 employees of 15 credit

unions in the US and Canada. In other contexts, altruistic behaviour may be less culturally appropriate, with different strategies more readily employed.

Our study focuses specifically on the Chinese cultural context, where employees who need to acquire knowledge rarely engage in altruistic behaviour. Instead, they favour a reciprocal approach. This reciprocity, as we describe below, is premised on a number of cultural indicators, key among them guanxi (Burrows et al., 2005; Voelpel and Han, 2005; Davison et al., 2013; Ou and Davison, 2016; Ou et al., 2016). Guanxi is sometimes translated into English as 'relationship', but a more culturally sensitive translation is 'a close and pervasive relationship characterised by mutual reciprocity' (Ou et al., 2016).

The process by which knowledge is exchanged among individuals needs to be further explained. Drawing on our own prior observations and an extensive review of the literature, we find that unsolicited knowledge sharing very seldom occurs. Instead, knowledge is shared when it is sought. Thus, there is a pair of activities, interpersonal knowledge seeking and interpersonal knowledge sharing, which together constitute Interpersonal Knowledge Exchange (IKE). In the Chinese context, IKE typically takes place between a reciprocally dyadic pair of individuals who share guanxi. In the absence of guanxi, IKE is very unlikely to occur in China. Further, studies of IKE in China (e.g. Voelpel and Han, 2005; Davison et al., 2013; Davison et al., 2014; Niedermeier et al., 2016) have noted that while knowledge can be exchanged in face-to-face settings, employees increasingly prefer interactive, social media applications such as the instant messaging tools WeChat[1] and QQ[2].

Guanxi is a form of relationship that is strong, binding and long lasting. Both guanxi and knowledge exchange may span organizational boundaries. The acts of seeking and receiving knowledge from a guanxi-linked partner are both central to the healthy management of guanxi. In order to obtain knowledge, an employee thus needs both to know who knows something of interest, and to have guanxi with that remote source of knowledge. The guanxi is important because it gives the knowledge seeker both the right to ask for and the expectation to receive knowledge in return (Teigland, 2000; Davison et al., 2013). Employees engage in IKE in order to tackle work-related issues and problems. Through IKE, work processes can be fine-tuned and best practices can be developed, applied, shared and improved (Christensen, 2007).

Although knowledge-related research has focused mostly on Western organizational contexts, an increasing amount of quality research in non-Western contexts has been published recently. The organizational imperatives to engage in knowledge work are no weaker in China than in the West (Martinsons, 2005). Yet, while the literatures on KM and knowledge sharing (KS) are quite well developed in Western contexts (Markus, 2001; Alavi and Leidner, 2001; Staples and Webster, 2008; Andreeva and Kianto, 2012; Serenko and Bontis, 2016), the same is not true in China. Here, the theoretical connections that link guanxi and social media to IKE remain elusive. This gap inspired our research, as we asked "*How do employees use social media applications to engage in knowledge exchange activities in a working environment characterised by guanxi-based interactions?*".

Following this introduction, we review the literature on knowledge seeking and sharing while considering the indigenous Chinese concepts that are most closely aligned with IKE practices

[1] https://en.wikipedia.org/wiki/WeChat
[2] https://en.wikipedia.org/wiki/Tencent_QQ

in the Chinese workspace. We also engage in a critique of the theories that have informed prior knowledge research in order to demonstrate why a new theoretical orientation is needed. We then introduce the organizational contexts where our work has been conducted and describe our research methods. A thematically structured set of findings drawn from case study material follows, focusing on the interaction between IKE, social media and guanxi. We theorise the connections between these three elements in the discussion, where we consider their inter-relationships. Finally, we consider implications for research and practice.

2 Literature Review

2.1 Interpersonal Knowledge Exchange

Before reviewing the literature on knowledge exchange, we explain our meaning of 'knowledge'. Traditionally, data refers to raw numbers and facts, information is processed data, while knowledge is authenticated information (Dretske 1981; Machlup 1984; Vance 1997). As an alternative to this view, Alavi and Leidner (2001) suggest that it is not effective to scrupulously classify data, information and knowledge only in terms of their content, structure, accuracy or utility. Instead, they see knowledge as "personalized information related to facts, procedures, concepts, interpretations, ideas, observations, and judgments" (ibid., p.109), which may not be new, unique, useful or even accurate. From the state of mind perspective, knowledge exchange is a process of providing information that enhances participants' understanding and learning (Alavi and Leidner, 2001; Davison et al., 2013). Indeed, the terms information and knowledge are transferable, depending on the stages of the exchange and the cognitive process: "information is converted to knowledge once it is processed in the mind of individuals and knowledge becomes information once it is articulated and presented in the form of text, graphics, words, or other symbolic forms" (Alavi and Leidner, 2001, p.109). That means knowledge is the result of a cognitive process trigged by the inflow of new stimuli. This perspective also has profound implications for the role of IT, which should aim to provide access to the sources of knowledge rather than to knowledge itself.

Employees engage in IKE when they encounter a situation that demands knowledge beyond their own resources. While this knowledge might be available in a formal KMS, employees today increasingly rely on self-developed networks of experts from (and with) whom they seek (and share) the desired knowledge. IKE thus involves both seeking and sharing knowledge. IKE is premised partly on Transactive Memory Systems (TMS), which explains how individuals rely on other individuals as external memory devices (Wegner, 1987). Fundamental to TMS is knowing who knows, and thus knowing whom one should approach when confronted with a problem or lack of knowledge in a particular domain. The literature on IKE belongs to the broader literature on KM, which has been widely researched over many years (e.g. Alavi and Leidner, 2001; Wasko and Faraj, 2005; Choi et al., 2010). In the last decade, KM research in China has become more visible, with studies of both formal KMS and the less formal IKE that is our focus (e.g. Teo and Men, 2008; Young et al., 2012; Davison et al., 2013; Ou et al., 2016). In the Chinese context, IKE is premised not only on the 'knowing who knows' aspect of TMS, but also on a number of indigenous socio-cultural concepts that influence interpersonal behaviour, such as guanxi, reciprocity, mutual obligation and face. Lu et al. (2005) allude to these when they argue that technology alone cannot ensure knowledge exchange in the Chinese context, instead insisting, "positive interpersonal relationships are conducive to knowledge sharing". In the next sub-section, we review the relevant literature on guanxi and allied socio-cultural concepts that pertain to IKE behaviour.

2.2 Guanxi and Its Constituent Components in the Context of Knowledge Exchange

Researchers have identified a number of concepts that may both enable and constrain how employees engage in IKE activities in China. Key among these concepts is *guanxi*, which comprises a number of elements viz.: *ganqing* (affection), *mianzi* (face, respect for authority), *renqing* (harmony or favour), *xinren* (trust) and *huibao* (reciprocal obligation) (Hwang, 1987; Burrows et al., 2005; Voelpel and Han, 2005; Teo and Men, 2012; Young et al., 2012; Davison et al., 2013). The cultural nuances of these Chinese terms and their inter-relationships are not easily translated. Thus, although there are many studies of, for instance, 'face' and 'relationships' in the non-Chinese literature, these may not be culturally equivalent to the Chinese experience. In the following paragraphs, we introduce each of the terms, explain its affordances and illustrate its relevance for the context of IKE. We begin with the over-arching term, guanxi.

2.2.1 Guanxi

Although the term guanxi has a rich history in the management and psychology literatures, its precise meaning is still contested. Ou et al. (2014) engaged in an extensive review of the literature in their search for a culturally sensitive meaning, examining 16 different sources. Drawing on their work, a summative and culturally sensitive definition is: 'a network of close and pervasive ties emphasising mutual and obligatory reciprocity, combined with personal trust, face preservation and relationship harmony over the long term'. In China, guanxi is ubiquitous across the whole society, which is structured around social relationships (Fu et al., 2006). Social relationships are important in China because of the relative immaturity and weak enforcement of institutional arrangements associated with the legal system (Xin and Pearce, 1998; Martinsons, 2008; Qing, 2008; Niedermeier et al., 2016). Historically guanxi required face-to-face communication. However, in today's fragmented workplaces, face-to-face communication may be a luxury. As a result, guanxi must be developed and maintained through IT applications, particularly social media (Davison et al., 2013; Niedermeier et al., 2016).

Guanxi is usually premised on a common organising feature or base that connects people (Kiong and Kee, 1998). Examples of guanxi bases include language or dialect; professional status or occupation; company or society affiliation; hometown or roots; school or university. Guanxi is more likely to develop if people share a common base (Kiong and Kee, 1998). This is important because it restricts to what extent and with whom guanxi can be developed, and therefore from and with whom knowledge can be sought and shared. Although the theory of weak ties (Granovetter, 1973) implies that it would be more useful to seek knowledge from people with whom one has a weak tie, in practice this is unlikely to occur in China as weakly tied others are seldom connected through a guanxi base.

Clearly, there are parallels between guanxi and social capital. Of the three dimensions of social capital (relational, structural and cognitive), relational capital most closely approximates guanxi, since both are premised on relationships. However, the underlying mechanisms of guanxi and relational social capital are different. Although we have described guanxi in positive terms, it encapsulates a defensive approach to interactions, given its origins in a distrust of formal institutions, emphasising the interpersonal exchange of favours (Arias, 1998). Further, although we have described guanxi as being rooted in networks of relationships among individuals, as is social capital, guanxi tends to emphasize benefits that are experienced at the individual or in-group level (Fan 2002), but not larger units of analysis. An in-group (Triandis, 1989; Qing, 2008) consists of two or more individuals, but rarely exceeds a dozen (Buys and Larson, 1979). In-groups associate people who are recognised as

experts in a particular domain. A guanxi-based in-group is characterised by very strong ties between members, incorporating affection, trust, reciprocal obligation and an inclination to protect not only one's own face, but also the faces of other in-group members.

Guanxi tends to operate on a long-term exchange basis, i.e. an individual who asks for help expects reciprocally to return the favour later. The individual who answers the call for help is also acting defensively, protecting his/her face, reputation and the harmony between the exchange parties. In contrast, social capital sees value created from the public good (Coleman, 1988), emphasizing benefits that accrue to the community at large. An online community that aims to exchange knowledge proactively thus conforms more closely to the spirit of relational social capital (cf. Wasko and Faraj, 2005) and less to the spirit of guanxi.

Guanxi significantly influences knowledge exchange in several ways. Firstly, when employees are linked through guanxi, their willingness to collaborate with each other is enhanced (Tsui et al., 1992; Qing, 2008). Lu et al. (2005) refer to this willingness, remarking that there is no "perfect substitute for the motivational effects of human binding and social connectedness". While knowledge exchange within the in-group is common, knowledge exchange with people beyond it is rare (Qing, 2008). People who do not know each other and who do not belong to the same in-group are unlikely either to seek knowledge from each other or to share it. Secondly, guanxi persists over long periods of time (Xin and Pearce, 1996). As a life-long asset, guanxi provides a high degree of assurance for future knowledge exchange. Thirdly, although one's own guanxi may be limited in its scope, since there are only so many people with whom one can build and maintain guanxi, one can also access knowledge from second-order guanxi connections. Thus, in seeking knowledge from one's guanxi-linked colleagues, one is also indirectly seeking knowledge from those people's guanxi-linked colleagues (cf. Davison et al., 2013).

2.2.2 Mutual Trust and Reciprocal Obligation in In-Groups

When guanxi-based relationships are strong, individual in-group members implicitly share high levels of mutual trust. In-group members must build interpersonal trust to facilitate the long-term maintenance of guanxi (cf. Huff and Kelley, 2003; Kiong and Kee, 1998), critically including reliability and sincerity (Chen and Chen, 2004). There is an implicit assumption that in-group members are morally and mutually obligated to help each other (Farh et al., 1998; Bennis, 2000); this help certainly extends to IKE. In-group members thus have strong, mutually reciprocal obligations (Kiong and Kee, 1998). Violating the mutual trust by refusing to honour one's reciprocal obligation (without good justification), and thereby demonstrating one's lack of reliability or sincerity, is likely to have grave consequences: ostracism from the in-group and hence exclusion from the resources enjoyed by in-group members.

2.2.3 Face, Reputation, Affection and Harmony

Face, reputation, affection and harmony are critical components of guanxi that are related to knowledge exchange (Huang et al., 2008, 2011; Niedermeier et al., 2016). Face refers to the respect, pride and dignity of an individual as a consequence of his/her social achievement (Leung and Chan, 2003). By protecting one's face, one acts to preserve both one's own reputation and the harmony of the group, ensuring that there is a degree of emotional warmth between group members. Face has long been acknowledged as a critical factor in Chinese social interactions, including work-based contexts (Hu, 1944; Ho, 1976; Redding and Ng, 1982). The normative expectations of guanxi ensure that in-group members will protect each other's face from any damage that might be inflicted by the actions of others (Kiong and Kee,

1998; Young et al., 2012). There is normally little risk to one's face when engaging in IKE within the in-group (Huang et al., 2011), though there is the potential to lose face by asking an overly simple or foolish question. However, interacting with unknown others (the out-group) is rare in Chinese society. As Young et al. (2012) explain, Chinese knowledge workers may be very reluctant to share knowledge openly in a publicly accessible KMS. Being subject to the gaze or scrutiny of unknown outsiders (Foucault, 1979), they fear damage to their own or someone else's face (cf. Detert and Edmondson, 2007; Ho, 1976). Voelpel and Han (2005) highlight this concern for face, noting also that poor language ability might deter some employees from actively participating in knowledge exchange contexts. A concern for face thus constrains IKE to contexts where there is a reciprocal obligation to protect face (Young et al., 2012), thus minimising the risk that face can be damaged.

2.3 Technology Used for Interpersonal Knowledge Exchange

Knowledge can be exchanged directly and verbally between physically proximate in-group members, but more commonly such IKE behaviour is mediated by technology. Recent research in China (e.g. Davison et al., 2013; Niedermeier et al., 2016; Ou and Davison, 2016; Ou et al., 2016; Wong et al., 2016) has demonstrated a strong preference for social media applications such as instant messengers and micro blogs for IKE. For instance, individuals in close proximity, e.g. sitting next to each other, are just as likely to communicate online as people distributed across the office, city or country (Davison et al., 2013). Further, while the number of people around a table seldom exceeds 10, though 100 might be distributed around an office, social media applications can extend the size and range of social networks indefinitely.

We highlight the salient role that interactive technology applications play in facilitating and enabling the knowledge exchange process (Constant et al., 1996). For instance, Wagner and Bolloju (2005) highlight the role of wikis in conversational IKE, Choi et al. (2010) demonstrate how a formal KMS can incorporate an informal IM application, while Ruggles (1998) illustrates the value of a corporate expert directory, and Phang et al. (2009) demonstrate how communities of practice (Wenger, 1998) contribute to knowledge exchange. These specific IT applications confer several advantages, including their interactivity, immediacy, close integration with work contexts and support for natural language communication (cf. Newell et al., 2009; Teo and Men, 2008).

2.4 Critique of Theories Previously Applied to KM Research

Many theories have been applied to or adapted for KM research. We review and critique a few of them here. Firstly, social exchange theory (Hormans, 1958; Blau, 1964) is often used to consider the costs and benefits of sharing, and to explain how actors exchange resources. As Wasko and Faraj (2005) point out, an individual who actively participates in a knowledge exchange network "enhances his or her personal reputation in the network [thus] building reputation is a strong motivator for active participation". Nevertheless, while the issues of reputation development, as well as costs and benefits, are important, knowledge sharing in China occurs in the context of a cultural environment that is premised on guanxi where there is no explicit counting or reckoning. When individuals are connected through strong guanxi, they are very unlikely to consider the immediate personal costs and benefits associated with sharing, since this act is regarded as a solemn duty or obligation that cannot be quantitatively measured or recorded as a credit.

Secondly, social capital theory (e.g. Nahapiet and Ghoshal, 1998) provides evidence of contextual factors that may moderate the influence of the costs and benefits of knowledge

exchange. Social capital is not generally conceptualised as a unidimensional construct, but rather as comprising cognitive, structural and relational capital (Nahapiet and Ghoshal, 1998). These three dimensions of social capital are premised on the network effect associated with the interactions of many individuals. Cognitive capital refers to the common understanding that exists between individuals in a social network (Wasko and Faraj, 2005). When these individuals share a common language, it is much easier for them to exchange knowledge (Nahapiet and Ghoshal, 1998). Structural capital refers to the social linkages in a network that facilitate the obtaining of knowledge from people who hold that knowledge (Burt, 2000). The theory of structural holes (Burt, 2009) is related to this sense of structural capital, since the holes exist when there are gaps in the social linkages, thus complicating individuals' access to knowledge. The third dimension of social capital involves the personal relationships, including the levels of trust and reciprocity, which exist between individuals as a result of a history of mutual interaction (Lu and Yang, 2011). The nature of the relationships will influence the way individuals engage in knowledge exchange (Nahapiet and Ghoshal, 1998). Trust is a construct that is almost ubiquitous in studies of knowledge exchange, especially those premised on social exchange theory (e.g. Kankanhalli et al., 2005; Staples and Webster, 2008).

Social Capital Theory comes very close to explaining how KS behaviour operates in China. However, key missing elements are associated with the sense of face and harmony that are special in the Chinese context. Knowledge is never only functional. Instead, it is a shared resource that is accessible unreservedly to members of an in-group who have an obligation to share with one another in order to extend the harmonious feelings of affection and warmth associated with the in-group and also to protect the faces (individual and collective) of the in-group and its members.

Social capital and guanxi both focus on social relations. However, while social capital is generated collectively from the presence of communities and social networks, individuals in Chinese societies create guanxi by developing and sustaining direct connections with others individually. In fact, guanxi is conceptually distinct from social capital due to their differences in fundamental purpose, underlying drivers, development process, relationship to rules, relationship to trust, outcome benefits and impacts on business (see Ou et al., 2014). More specifically, two individuals working for the same employer will necessarily share some social capital, yet they may not share guanxi, and therefore may not engage in knowledge sharing. Moreover, guanxi connections are premised on behaviour that is both mutually reciprocal and pervasive over long periods of time, even as there is no explicit tallying of how much one has given and therefore how much one is entitled to receive. It is noteworthy that the concept of structural holes in social capital theory encourages the emergence of knowledge brokers, who can exploit the absence of connections between people. However, in the Chinese context, individual knowledge seekers would be unlikely to approach unknown others for information (Xiao and Tsui, 2007). Further, the rather mercenary development of power that is implicit to the brokers of structural holes would be anathema to guanxi-linked in-group members. Instead, they must hope that an existing guanxi connection can act as a bridge to a remote source of information. This approach to knowledge sharing is less efficient than in the more demand-driven social capital market, but it effectively protects the power and faces of the in-group members, who would shun the critical gaze of unknown out-group members (Young et al., 2012).

Thirdly, the concept of TMS (Wegner, 1987) has been applied recently to KM research. The basic principle of TMS is that one person can treat another as an external memory device

(Wegner, 1987). A TMS embodies four important substructures (Oshri et al., 2008; Choi et al., 2010): developing specialised knowledge of one's own; developing meta-knowledge about the knowledge of others; forming cognitive trust in others and their knowledge; and acquiring skills that permit the coordination of knowledge across different tasks. IT-supported TMS have been found to enhance knowledge exchange in teams (Oshri et al., 2008; Choi et al., 2010; Zhong et al., 2012). The underlying principle of TMS is that one can access remote knowledge if one knows the person who has that knowledge. Although this principle is relevant to the IKE environment in China, from a guanxi perspective it is insufficient merely to know who knows what. One must also have guanxi, a duty of reciprocal obligation, with the person who knows. Thus, there is a need for a state of not only relational and cognitive trust but also mutual obligation and affection with one's interlocutors.

To summarise, existing theoretical perspectives provide various explanations as to how knowledge exchange can occur in a range of situations. However, IT-mediated IKE that involves guanxi-based relationships premised on mutual obligations is not well explained by existing theory. In particular, the reciprocal nature of KS in China, coupled with issues of face protection and affection, are absent. Consequently, new theoretical arguments are needed if we are to explain the underlying mechanisms of IKE in China.

3. Research Context and Methodology

The research reported here was undertaken from 2006 to 2015. The research is framed as an interpretive and exploratory case study at the firm level in multiple organizational settings. The epistemological stance that we take is interpretive, following Myers (1997). In particular, we aim to uncover the nature of the socio-technical situation as it pertains to the interpersonal exchange of knowledge as experienced by a variety of employees in the PR and Hospitality industries in China. Our ontological perspective is particularistic (Davison and Martinsons, 2016). The research is also exploratory, as we did not have pre-conceived ideas about what we might find, beyond those indicated in the literature review. Our focus is related to the context of IKE, guanxi and technology. We aim to understand the phenomena in this context through the meanings that our case respondents assign to them. Instead of predefining dependent and independent variables, we focus on the full complexity of human sense making. Following Myers (1997), we interpret our case findings accordingly. As an interpretive study, we first aim to make sense of the world of the employees before articulating broad theoretical propositions with respect to the way knowledge is exchanged between employees and other stakeholders. Naturally, the extent to which our explicit findings can be generalised through acts of induction to other contexts is limited (Seddon and Scheepers, 2012). However, by creating new theoretical propositions, we can generalise our findings in a refined way that permits later validation by other researchers in other contexts (Lee and Baskerville, 2003, 2012). In this process, we followed the principles of interpretive research, as outlined by Klein and Myers (1999), putting ourselves and the case participants into the historical river in order to summarize the data and describe the case, which are "produced as part and parcel of the social interaction of the researchers with the participants" (p.74).

The specific context involves a variety of professional service firms (Nordenflycht, 2010) in the Public Relations (PR) and Hotel Management industries (see Appendix 1 for details). We selected the professional service sector because of the prevalence of both knowledge work and well-educated employees. The specific industries were selected because each involves intensive knowledge work that involves communication and the sharing of knowledge both

internally (with colleagues) and externally (with clients, consultants and other third parties). For each industry, we selected firms that were firmly rooted in the local Chinese culture, employing predominantly local people. We contacted the CEOs of the two PR firms and the VP for China of the hotel management company, thus securing support for our study at the highest levels. We define "knowledge work" as work that entails significant communication between employees and a variety of internal and external stakeholders. It involves not only the sharing of factual information but also discussions about work processes, validation of ideas, honing of best practices and engaged enquiry on topics of mutual relevance (cf., Holsapple and Joshi, 2002). While this focus on the professional services sector necessarily limits the extent to which we can generalise our findings to other contexts, this sector is growing fast in China and makes significant contributions to the global economy (Chen, 2012) more generally. We studied two PR firms, viz.: Eastwei and WestLinkAsia (a pseudonym). Eastwei, now merged into MSL Group, operated only in China and hence can be classified as a domestic PR firm, albeit one that normally served overseas clients seeking to build market share in China. WestLinkAsia is a member of the global WestLink group, though the Asia operations are operationally independent, essentially a franchise of the global parent.

In addition to these two PR firms, we also studied twelve individual hotel properties that are managed by the Dingle (a pseudonym) hotel group. Dingle is a global hotel management company, managing over 3700 properties in around 100 countries. Dingle's operations in China are locally franchised: other than the General Manager, all employees are hired locally by the company that owns the hotel property. The knowledge work undertaken by employees in both PR firms and hotels shared many similarities with respect to the way employees relied on guanxi-linked contacts to gain access to information and knowledge resources. However, as will become apparent, the firms themselves differed markedly with respect to the technology environment imposed on employees.

In each firm, we collected data from a variety of employees at different levels. We contacted the CEO of each PR firm and the General Manager (GM) of each hotel property and requested access to individual employees serving in different positions, ranging from senior management through middle management to junior employees. We specified that these employees should be engaged in knowledge work. The departments or teams where these employees worked varied but included: Automotive (PR); Client Engagement (PR); E-Business (Hotel); Human Resources (Hotel and PR); Luxury Goods (PR); Marketing and Communications (Hotel); Pharmaceutical (PR); Reservations (Hotel); Sales (Hotel); Travel/Tourism (PR). We interviewed employees singly and in small groups. Our interview protocol was developed from the relevant literature, in addition focusing on the issues of greatest relevance to our research question: guanxi, IKE, problem solving. The interview protocol (see Appendix 2) facilitated our semi-structured interviews with employees. We also observed them at work and were able to interact with them so as to go beyond the interview protocols to ask questions about the specific work tasks that they were undertaking. We transcribed all data, some of which was recorded with the employees' permission and some which was the subject of hand-written notes (Barley, 1990), and coded it thematically following the principles associated with qualitative data coding and analysis (see Martinsons and Hempel, 2009; Young et al., 2012). The first author performed the initial coding of the data. This was checked by the second author and further validated by the third author. Our coding for this paper was refined so as to focus on themes specifically related to IKE in the context of guanxi and IT. We identified three distinct areas where there was sufficient

evidence to support the presentation of a case study: the IKE environment, guanxi and IKE, and IT and IKE.

4. Case Context and Description

In the following sub-sections, we draw on our interviews with and observations of employees to present the salient aspects of their world, with respect to IKE, before engaging in the development of more formal theoretical propositions.

4.1 The IKE Environment

In each firm, we found that employees need, amongst other activities, to communicate both internally (with colleagues) and externally (with partners), engaging in IKE activities. While some of this knowledge exchange took place in face-to-face settings, more often it was mediated by various technologies, in particular social media applications. Indeed, Eastwei's corporate vision was formalised as a proprietary methodology called "knowledge-driven media relations"[3]. Eastwei formally supported the use of social media for work-related communications: "We wholeheartedly encourage employees … to use social media to engage in conversations online"[4]. In Eastwei and WestLinkAsia, all work involves client-oriented teams that range in size from 4-50 members. The teams focus on specific industries, e.g. pharmaceutical, tourism, automotive. Each team has an Account Director and is distributed across two or three locations, with some team members able to see each other face to face, while others need to interact online. Team members also need to work with their client stakeholders, as well as external service providers such as media event organisers and journalists. Through these interactions, team members build and maintain strong connections (guanxi) which they can draw on in future work assignments. Meanwhile, in the hotels, employees who are engaged in knowledge work tend to contact external parties such as travel agents, government departments, service providers (e.g. food, beverages and supplies), corporate customers and guests. These interactions vary from the relatively mundane to more sophisticated interactions involving problem solving and negotiations that require intensive communication. In the hotels, employees tend not to work in teams, instead interacting on a more personal basis with their interlocutors.

The social media environment in China is also distinctive because many social media applications, notably Facebook, Twitter, Youtube and Instagram, are blocked by government firewalls and cannot normally be accessed. As a result, domestic social media applications, such as QQ (an instant messenger), Weibo (a microblog), Youku (a video sharing platform), Kaixin (a social media platform) and Weixin (a mobile instant messenger tool known outside China as Wechat), have been developed and are widely used. In addition to these applications, we also saw extensive application of Microsoft's MSN Messenger and Windows Live Messenger (now discontinued).

In the following narrative, we describe and analyse how IKE was facilitated with technology and mediated with guanxi. Employees in all the firms commonly leveraged their guanxi with technology in order to obtain access to knowledge. The most common IT application during the time of our investigation was the instant messenger (IM) (e.g. MSN or QQ), but microblogs like Weibo and mobile instant messengers like Weixin, as well as telephones and email, were also used. Social media applications in general are seen as being interactive,

[3] http://www.mslgroup.com/news/2011/20110926-pr-and-the-party/
[4] http://www.mslgroup.com/our-social-media-guidelines/

immediate and dynamic. They enable synchronous communication that is more natural, in the absence of face-to-face communication, for intimate conversations that enable the sharing of knowledge.

4.2 Guanxi and IKE

We start our narrative with a quotation from the CEO of Eastwei (cf. Björkstén et al., 2008; Björkstén and Hägglund, 2010), who noted the critical importance of knowledge exchange in general. Consistent with corporate policy, he expressed his expectation that employees should share knowledge both inside and outside the firm: "To restrict knowledge exchange practices … would be to destroy the knowledge sharing culture" (Björkstén, 2007). However, although he favoured knowledge sharing, he also pointed out that knowledge has a relatively short half-life as it decays quite quickly over time. Therefore, he also observed that it is important that employees should always have good access to the knowledge held by others (cf. Wegner, 1987). Guanxi is critical in this regard, because it should not decay if it is nurtured carefully. Thus, guanxi enables employees to access knowledge, both now and in the future. Guanxi is thus more important than knowledge. Guanxi is a critical success factor for work because it opens doors behind which knowledge could be found. To reiterate, Eastwei's CEO observed that "guanxi is a media firm's most valuable asset", primarily because it is hard to imitate or transfer. Consequently, when hiring new employees, he hires them more for whom they know (their guanxi) than what they know (their knowledge) or the skills that they possess (cf. Tong and Mitra, 2009). The quality of the guanxi is linked to the sense of reciprocal obligation as Derek, an IT Manager at Eastwei, explained: "my willingness to share with others depends on the personal relationship. If we have good guanxi, I will tell my experience and comments when I see he/she is handling a case. If our guanxi is just OK, I think it is not necessary to take the initiative. Guanxi is important in China. It's a waste of time to me if our guanxi is just OK and I do not want to enhance our relationship".

Similarly, Zeke, a sales manager at a hotel in Chengdu described how guanxi functions as "a mediator of IKE". Good guanxi, and the associated reciprocal obligation to reply, is critical if one is to engage in IKE effectively when a question must be answered urgently. A purchasing manager at a Shenzhen hotel corroborated this view, explaining that guanxi was critical for knowledge-based work because it "facilitated the communication process with both internal and external clients. In the absence of guanxi, communication is much more difficult". The comment of a PR manager in the same Shenzhen hotel highlighted the obligation embedded in his guanxi network: "I have close guanxi with twenty people. If any of these twenty people have problems, I must help them".

Grace, a Shanghai-based PR executive with WestLinkAsia, explained that when she needed help on a project, she sent a quick message on QQ to a wide range of her guanxi-linked contacts. Some of these people would be colleagues in the firm, but others could work for other firms or other industries. Within seconds, several would reply. The rapid response on QQ was a big benefit. However, this rapid response was only possible with strong guanxi contacts who felt reciprocally obliged to help quickly. Meanwhile Rachel, one of Grace's colleagues, was seen using MSN in a highly dynamic fashion, simultaneously maintaining open communications with 17 of her guanxi-linked colleagues. These people were distributed across both the local office space and in more distant locations. Some of the 17 conversations were initiated by Rachel as she sought advice, while others were initiated by others asking Rachel for help. What all 17 had in common was their guanxi with Rachel. By leveraging both the social media technology and her guanxi, Rachel was engaged in a process of "rapid and ad hoc collaboration" (Jarvenpaa and Majchrzak, 2008) that involved multiple

communication channels and that was underpinned by multiple, dyadic, mutual responsibilities to help each other. When multiple guanxi connections are consulted for a single problem, it is possible to cross-check responses, thereby increasing the reliability of an answer.

4.3 Technology and IKE

In both the PR firms and six of the hotels we studied, employees had access to an unrestricted IT environment. Essentially any IT was permitted, so long as it was normally accessible (some Western social media applications and websites are blocked in China). The most popular technologies were various social media applications, though email was still used for more formal communications. William, an IT team member in Eastwei's Beijing office, proved to be an expert in managing contact details using MSN, with a contact list that ran to over 500 people, organised into a number of different categories, facilitating easy location of contact details. In several of the hotels, QQ was the preferred application for IKE, primarily because external interlocutors also preferred to use QQ. As a PR manager at a hotel in Wuhan commented, "I use QQ to contact many guanxi-linked external parties who don't want to use other applications. They refuse to use email and it is very hard to get hold of them on the telephone". Zeke, the Sales Manager from a Chengdu hotel, pointed out that "guanxi can only be leveraged effectively if the right technology is available, since guanxi-linked contacts are rarely accessible face-to-face. Here, the right technology is social media, QQ for preference, since this is the application most widely used by industry partners".

MSN was also a popular tool, often as a way of organising IKE among the members of in-groups. A hotel General Manager in Shanghai observed that he belonged to a group of Shanghai hotel managers on MSN who frequently shared knowledge with one another. At a different Shanghai hotel, Rebecca, the Revenue Manager, said that she belonged to "several MSN groups, with 10-15 members each, harvesting them for knowledge … recognising the existence of experts in the in-groups whom she can contact on topics like gifts, media and printing".

While six of the hotels we studied had a relaxed attitude towards social media, the other six were in the process of implementing a standardised IT solution from the global parent that would shortly become the norm across all Dingle properties. Dingle's new IT solution involved all Internet related communications being channelled via a proxy server in the regional headquarters with the result that all social media applications and some file sharing services were blocked. As Dingle's VP for Southern China commented, "There is no value in chatting. Social media applications have no role to play in Dingle's corporate culture". The Global VP for IT (at corporate HQ) reiterated the argument, noting that: "Security is paramount. No hotel back-office has direct connectivity to the Internet. There is zero tolerance for malware and the risks that malware would bring". Some Dingle employees reluctantly accepted these restrictions. Frances, a Front Office Manager in Guangzhou commented that "she would prefer to use MSN or QQ to contact guanxi-linked corporate clients and frequent guests, but this is impossible". More directly, Stephen, a FOM in Beijing complained: "I am not allowed to use MSN at work, and my guanxi network has suffered in consequence: I have lost some of my contacts. It is harder to work effectively".

Not all Dingle employees accepted the restrictive Internet policy. Some actively pushed back against the policy insisting on their need to use QQ and other social media applications. We identified a few functional managers in Dingle who were able to gain permission from their GMs to use social media applications, even though this violated Dingle's corporate norms.

This authorised usage could not take place over normal in-house networks, since all communications traffic was blocked at the proxy server level. Instead, GMs authorized selected employees to use the networks normally reserved for hotel guests, which are not subject to the same restrictions. These GMs were remarkable for their appreciation of the critical role that guanxi plays in Chinese society, and were hence supportive of the need for appropriate technology with which to leverage the guanxi in the course of work assignments. Esmerelda, a hotel GM in Suzhou observed, "We trust people to use the technology sensibly". Finally, Gertrude, a hotel Revenue Director in Beijing was one of the few to use MSN actively, with support from her GM, noting, "I use MSN to contact my in-group colleagues; I rely on these people to remember things for me. If they can't help, they may ask their own contacts on my behalf".

5. Discussion

In this section, we develop our key findings into theoretical propositions and consider the implications for the interaction of knowledge, guanxi and technology. In China, it is normal for employees to rely on highly contextualized knowledge (Martinsons and Westwood, 1997; Ou et al., 2016), which can be exchanged by engaging in interactive conversations that are mediated by social media applications. The extent to which the exchanged knowledge is easily understood and then recontextualised into a new practice depends on the extent to which interlocutors share a common language and lexicon (cf. Carlile, 2002; Pagel, 2012). Through the interactive conversation, knowledge exchange parties may not only clarify obscure meanings, but also generate new knowledge as they actively reflect on the knowledge as it is exchanged. In China, it is important to understand the context and dynamic situation associated with solving problems (cf. Davison et al., 2013) where IKE, that is mediated by guanxi and social media (Davison et al., 2013; Niedermeier et al., 2016), is preferred instead of relying on standard procedures and manuals. Engaging in IKE is an interactive and dynamic process, which incorporates distinct forms of information and knowledge from multiple sources. Our cases indicate that for work problems where no one person holds all the relevant knowledge (cf. Argote and Ingram, 2000), IKE is an effective and efficient way to develop immediate solutions to work-related problems in an ad hoc fashion (Jarvenpaa and Majchrzak, 2008). Remote but familiar interlocutors quickly respond to requests via social media if there is a strong guanxi connection given the emphasis on reciprocal obligation and the need to preserve harmony, and if there is no concern for a loss of face (cf. Xiao and Tsui, 2007, Young et al., 2012). Knowledge workers often engage in cross-organizational border connections, both within and beyond the industry in which they work, enabling the amalgamation of a variety of inputs as they engage in IKE and so solve problems at work. We thus summarize:

Proposition 1. The interactive and dynamic nature of IKE better positions knowledge workers to solve workplace problems.

In China, the prevailing preference for guanxi-based interactions is closely aligned with a similarly strong preference for informal and tacit forms of information (Martinsons and Westwood, 1997; Ou et al., 2016). Scholars have highlighted a propensity for people in China to engage in interactive communication: "despite the widespread use of IT applications across China, personal interaction remains the dominant form of knowledge transfer" (Burrows et al., 2005, p.75). Lu et al. (2005) corroborate this view, arguing that technology cannot completely substitute guanxi where knowledge exchange practices are concerned. However, we suggest that arguments about the relative merits of technology and guanxi are misguided. In reality, both are critical. The knowledge workers in our study used technology to engage in

personal interaction for both social and work purposes. Given the importance of guanxi in the Chinese culture, knowledge workers who are connected by strong guanxi yet who lack the opportunity for face-to-face communication do turn to IT applications, in particular interactive social media tools, in which they can engage in IKE activities in a dynamic way (Davison et al., 2013; Davison et al., 2014; Niedermeier et al., 2016). This social media-enabled, guanxi-linked IKE is characterised by its interactivity, immediacy and intimacy. The interactivity is exemplified by two (or more) people engaging in synchronous communication, mimicking face-to-face conversations. Closely aligned with interactivity is the immediacy of the conversation: although each interlocutor has time to read a message, think what to say, and then type it, the response time is normally very quick, often only a few seconds, giving the impression of immediacy (Ou et al., 2014). Finally, even though these conversations are generally text-based, they are nevertheless intimate and affectionate, especially when interlocutors know each other well and so do not need to protect their face by being cautious as to what they say (Young et al., 2012). The guanxi-based network enables interlocutors to reach out to each other easily, as well as to more remote networks of guanxi contacts, so as to exchange ideas and knowledge. Based on our observations of where and how IKE takes place, we argue that it is psychologically less threatening or intimidating to exchange knowledge with in-group members (Triandis, 1989) who share a mutual obligation to protect each other's faces and to preserve a harmonious environment (cf. Qing, 2008; Young et al., 2012). The act of engaging in IKE also provides an opportunity to enhance one's face and personal reputation (Triandis, 1989) while developing and sustaining one's guanxi more generally.

The knowledge exchange practices within all three Chinese firms revealed a consistent influence of both guanxi and technology on the IKE process. In different job functions and levels of responsibility, in different industries, locations and contexts, we observed employees seeking to leverage interactive social media technologies in dynamic conversations that enabled them to seek and obtain knowledge from guanxi-linked colleagues. This practice was not limited to junior employees, who may be more digitally literate: it was common across all levels of the hierarchy from the General Manager or CEO down to the most junior employee. Even when the organizational IT environment was not supportive, employees still found ways to work around the restricted environment (Alter, 2014) and thereby to access the requisite resources so as to ensure that they could continue to exchange knowledge online. Thus, we found that IT is critical because it connects people who are not physically present, giving them the sense of presence (Ou et al., 2014). Meanwhile, guanxi is equally critical because IKE is premised on mutually reciprocal obligation: all parties in a guanxi network are reciprocally obligated to help all other parties when requested. We thus summarize:

Proposition 2. Social media applications enable knowledge workers to engage in interactive and dynamic IKE activities in the workplace.

We were surprised at the extent to which knowledge workers have embedded social media applications such as IM into their personal work practices. In order to show their availability, some employees leave IM tools running permanently (cf. Davison et al., 2013; Ou et al., 2014; Ou and Davison, 2016). When engaged in IKE activities, knowledge workers may initially request help from a wide variety of people across one or more in-groups, both inside and beyond the organizational boundary. Subsequently, they will pursue conversations dyadically with each person who replies. This situation was frequently observed in the PR firms and the hotels that permitted unrestricted access to Internet-based resources: employees

made use of social media tools to reach out to people whenever necessary, so their guanxi network was utilized to the full potential.

As explained previously, guanxi is an essential facilitator for IKE in China, while social media technology is instrumental to connnect individuals who do not have the luxury of face-to-face interaction (Davison et al., 2013; Niedermeier et al., 2016). However, if organizational policies prohibit or impede employees' access to the IT needed for IKE, as we noted in some of the hotels, then the viability of employees' pervasive guanxi networks will be seriously jeopardized. In contrast, an open and permissive organizational environment may effectively enable employees to leverage their personal networks through social networking tools. We observed this contrasting situation in our cases of the two PR firms and properties of the Dingle hotel chain. Although these organizations represented two different industries, the need to approach customers, suppliers and colleagues was equally important for problem solving at work. As we found at both Eastwei and WestLink Asia, the combination of an open organizational policy, guanxi and the use of social media created a harmonious working environment where an optimal interaction of these three elements encouraged IKE and thus effective problem solving. Indeed, Eastwei made it clear that they expected employees to use social media to engage in conversations. However, at Dingle the progressive introduction of a restricted IT policy negatively affected the interaction effects of IT, guanxi and IKE: the social media was blocked, the guanxi could not be leveraged and in consequence, many employees experienced an impoverished IKE environment, with further impacts on their effectiveness and efficiency at work. Indeed, some employees chose to subvert the organizational IT policy altogether in order to ensure continued access to the social media that they deemed essential to develop and maintain guanxi, engage in IKE and so solve work problems. We thus propose:

Proposition 3: The technology environment plays an instrumental role in positioning employees to develop and maintain guanxi networks critical to work performance.

6. Implications and Future Research

Prior research has offered rich insights into how employees utilize a variety of technologies to seek and share knowledge. In the current paper, we have demonstrated how knowledge workers in Chinese professional service firms embed guanxi-mediated social media technologies into their IKE-oriented work processes. Further, they aim to develop, maintain and enhance these guanxi relationships, both within and beyond the corporate boundary, mediated by these same social networking tools. These guanxi relationships enable employees to access the sources who can provide useful knowledge to address work-related problems.

The organization's attitude towards technology, and any associated IT access policies, clearly plays a critical role in determining how employees can leverage guanxi and social networks as they engage in IKE activities. By comparing organizations with contrasting attitudes towards IT, we capture the instrumental role of the technology environment. We argue that an unrestricted technology environment is consistent with the inherent flexibility and spirit of adaptation common in Chinese organizations (Martinsons and Westwood, 1997). Such an environment supports the embedding of personal networks and social media technology into working processes. By articulating how guanxi, social media and the technology environment are related to IKE, we provide a conceptual foundation for future research to explore how these various factors exert an impact on individual, team and firm performance. We also suggest that researchers explore the consequences of restricted IT policies on employees. As

we note, when faced with a restrictive IT policy that denies access to social media, some employees deliberately subvert that policy and seek ways to ensure that they can gain access to the same technology. However, subversion of IT policy is not a topic that is at all well covered in the IS literature.

We generalize our findings in three major theoretical propositions that encapsulate the key relationships between the primary concepts: guanxi, social media tools, IKE, work performance and the organizational environment where work is performed. We emphasise that that the relationships among guanxi, social media and IKE are not simply one-way linear connections, but mutually reinforcing. When employees can leverage social media for IKE process in their guanxi network in order to get work done, the guanxi itself will also benefit from the act of using it, as this is also the act of maintaining and enhancing it. Each time guanxi is leveraged, the value of guanxi is affirmed and the associated guanxi partners feel the reciprocal obligation to reply, being reminded of the guanxi of which they are a part, as well as enjoying the benefits of the reciprocity. These findings provide a spring board for future researchers, who should further conceptualize these constructs and hypothesize their contribution to the organizational performance and social psychology literatures.

Our findings also have several important implications for organizations, managers and employees. The IKE process depends critically on both social media applications and guanxi. Thus, managers must ensure that their organizations develop a culture that supports relationship development and a formal policy to encourage IT use. A manager who restrictively controls how people work and communicate or who undervalues guanxi will also cause IKE to be impaired, with consequent negative impacts on work. Even managers who do not personally rely on guanxi and social media should recognise that some of their employees might critically depend on them. Executive actions may be needed to facilitate social media access for those employees.

We also urge more research in non-Western contexts. We specifically encourage intensive investigations that go beyond mere etic replication of existing Western theoretical models with local data (cf. Whetten, 2009). Instead, researchers should seek to identify and probe local contextual variables that influence how knowledge work is undertaken (Tsui, 2006). Several specific research topics follow from our own work. For instance, although guanxi is indigenous to the Chinese context, interpersonal relationships are universal. We suggest that interpersonal relationships will influence knowledge exchange practices in other cultures, even if to a different extent than in China. Guanxi, incorporating mutually reciprocal obligation, relationship harmony, trust, affection and face, is a key determinant of interpersonal behaviour for Chinese knowledge workers. In other societal cultures, the importance of these various factors is expected to vary. Cross-context studies that apply and test our propositions will help to validate or modify them (Whetten, 2009). The role of social media applications such as IM in leveraging guanxi and relationships at work also merits further investigation.

7. Conclusion

Our intensive investigation into interpersonal knowledge exchange practices in Chinese professional service firms has uncovered a pattern of work processes that differs significantly from those commonly described in the Western research literature. Informal knowledge exchange arrangements predicated on guanxi that embody elements of face, trust and a mutually reciprocal obligation to help, are ubiquitous. The entanglement of knowledge, guanxi and technology is complex, but these intertwined elements collectively comprise an

informal IS that effectively supports work. There are important implications here for setting corporate policies and so facilitating IT use by employees. Our research suggests that the effectiveness of informal and interpersonal knowledge exchange arrangements should not be underrated. Clearly, some social media tools are considered more acceptable than others, yet ideally, employees will be free to choose from an IT toolbox that best matches their own preferences, as well as those of their interlocutors. We encourage other researchers to test and refine our nascent theoretical propositions. This will improve our understanding of how knowledge is and could be managed in organizations. We anticipate many productive debates to come.

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Appendix 1: Summary of Information About Firms Studied				
Firm	**Number of**	**Locations**	**Details of Interviewees**	**Technology**

Name	Employees	studied in this research		Environment
Eastwei	110	Beijing, Shanghai, Guangzhou	60 client account executives, e.g. Account Executive, Senior Client Executive, Account Director. 4 Senior Managers: General Manager for each location and the CEO. Total = 64 interviewees	All software permitted; no corporate restrictions on accessing websites. However, Chinese Internet censorship restrictions still apply, so Facebook, Twitter, YouTube, Instagram, etc. are all blocked.
WestLink Asia	160	Beijing, Shanghai, Hong Kong	35 client account executives at different levels, e.g. Account Executive, Senior Client Executive, Account Director. 4 Senior Managers: General Manager for each location and the CEO. Total = 39 interviewees	
Dingle Hotels	100-300 per hotel property	Beijing (3), Chengdu, Chongqing, Guangzhou, Shanghai (2), Shenzhen, Suzhou (2), Wuhan.	27 managers across 12 hotel properties + the VP for China and the Global VP for IT: Director of Revenue (2) Executive Assistant to the General Manager (1) Food and Beverage Manager (1) Front Office Manager (5) General Manager (5) Human Resources Manager (2) IT Manager (1) Marketing and Communications Manager (3) Procurement Manager (1) Public Relations Manager (2) Revenue & Sales Manager (4) Total = 29 interviewees	In six hotels, all software is permitted; no restrictions on accessing websites, beyond those blocked by the Chinese Internet regulators. In six hotels, a tightly restricted IT environment is in operation, with many websites and software applications blocked.

Appendix 2: Interview Protocol

This semi-structured interview guide is organised in three sections. In each section there are a number of questions. However, depending on the answers given by interviewees, it may be appropriate to ask other related questions.

A. IKE

1. How would you describe how you engage in interpersonal knowledge exchange (IKE) at work?
2. How does the IKE affect your problem solving at work?

B. Technology for IKE

1. Which information technologies (IT) do you use for IKE activities? Which IT applications do your interlocutors prefer to use?
2. In the context of IKE, how does IT help to ensure that you can complete your work effectively and efficiently?

C. Guanxi and IKE

1. How does guanxi relate to the way you engage in IKE activities at work?
2. Guanxi is traditionally developed over time in face-to-face situations. Is it possible to develop strong guanxi through IT channels? How?
3. How do guanxi and IT applications support each other in IKE activities at work?

D. IT Possibilities and Opportunities for IKE

1. Does your company specifically mandate that you should or should not use any particular IT applications?
2. How does company IT policy affect the way you engage in IKE at work?
3. How does company IT policy affect the way you develop guanxi that supports your work?