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Khuong Le-Nguyen

*University of London, k.le-nguyen@rhul.ac.uk*

Romano Dyerson

*Royal Holloway College, University of London, r.dyerson@rhul.ac.uk*

G Harindranath

*University of London, g.harindranath@rhul.ac.uk*

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# A SITUATED KNOWLEDGE WORK CONTEXT PERSPECTIVE ON KNOWLEDGE MANAGEMENT SOFTWARE-ORGANISATION MISALIGNMENTS

Khuong Le-Nguyen, Royal Holloway College, University of London, Egham, Surrey, TW20 0EX, UK, Email: [k.le-nguyen@rhul.ac.uk](mailto:k.le-nguyen@rhul.ac.uk)

Romano Dyerson, Royal Holloway College, University of London, Egham, Surrey, TW20 0EX, UK, Email: [r.dyerson@rhul.ac.uk](mailto:r.dyerson@rhul.ac.uk)

G. Harindranath, Royal Holloway College, University of London, Egham, Surrey, TW20 0EX, UK, Email: [g.harindranath@rhul.ac.uk](mailto:g.harindranath@rhul.ac.uk)

## Abstract

*Underpinned by the work of Schultze and Boland (2000) on situated knowledge work context, and using Bourdieu's (1990) theory of practice, this paper draws attention to potential sources of likely misalignment between Knowledge Management (KM) software and the implementing organisation. Using the case of a global IT-Management consultancy firm, the paper elucidates KM software-organisation misalignments as the consequence of differences between organisational and KM technology developer's 'situated' knowledge work contexts with due consideration of the case organisation's large and diverse user base. Such contextual differences reflect the differing 'situated' knowledge work structures that KM technology developers and adopting organisations deliberately acquire and evolve over time. Theoretically, by giving a more comprehensive account of how knowledge work structures were emergent and then embedded into the organisation that either develops or implements the technology, we wish to provide readers with insights into the sources of misalignment, thereby enriching theory of KM technology implementation. Practically, studies of this nature would help make organisations more aware of the factors that can influence KM software package implementation, particularly in the case of large firms that are characterised by high-value, text-based knowledge for decision-making, such as consultancies, R&D, healthcare or legal organisations.*

*Keywords: Knowledge Management, software package, theory of practice, knowledge work context, global IT-Management consultancy firm.*

# 1 INTRODUCTION

An increasing number of knowledge management (KM) projects have not achieved the expected benefits from the technology and even worse, suffered critical failures (Malhotra, 2005). As Roell (2004: 1) argues: “*tools that have been developed in KM focused on information management and do not support many of the key knowledge work processes*”. Hence, if KM technology is not appropriately aligned with organisational and people ways of working, then even with state-of-the-art technology, organisations would not be able to provide the ‘right knowledge’ to the ‘right people’ at the ‘right time’. Our reading of the literature highlights that such low success rates were in part attributable to misfits arising from the different situational contexts of the adopting environment and the software developer. In other words, poor understanding of situated work practices often lies at the heart of failed KM implementation projects (e.g. Grudin, 1994; Suchman, 1995). More specifically, vendors and adopters alike should create solutions that are consistent with the situated knowledge work practices of the intended user communities (Schultze and Boland, 2000). This requires them to follow a practice-oriented approach, which, as Townley (1993: 235) argues, should focus not only on what people ‘actually’ do, but also on ‘*what doing it does*’. Suchman (1995) suggests that this approach is particularly suitable for KM because system developers do not have accepted models for the largely invisible and complex nature of knowledge work.

Although the concepts of situated knowledge work context and practice have been central in the writings of Orlikowski (1996), Majchrzak et al. (2000), Schultze and Boland (2000) and Orlikowski (2002), little is known of the sources of misalignments in terms of such situated context as well as how emergent knowledge work structures are surfaced on a large-scale. Notably, of the four studies, only Schultze and Boland opted for Bourdieu’s theory of practice (1990 and 1998) whilst the remaining employed Giddens’s (1984) structuration theory. We find that while both theories emphasise knowledge work practice as an on-going accomplishment, constituted and re-constituted in daily practice (Orlikowski, 2002), Bourdieu’s articulation of elements such as *field (structures)*, *habitus* and *practice* in his theory helpfully reflects the nature of knowledge work practices as we observed it in our research setting to elaborate on the nature of misalignment. Further, Schultze and Boland’s study also exposes some limitations. Their study focused only on a small group of knowledge workers, and particularly a specific practice named ‘*gate-keeping*’, which we argue does not reflect a sufficiently diversified range of knowledge works. Their research setting – a large building material manufacturing firm – may also not truly represent a ‘knowledge-intensive firm’ consisting of communities of practice (Alvesson, 1993). Most importantly, the technology implementation project ‘*did not move beyond its initial pilot stage*’ (Schultze and Boland, 2000: 197), raising questions in our minds as to unexplored potential misalignments occurring in actual implementation.

Specifically, in this paper, our objective is to understand the sources of misalignment between KM technologies and organisations. To do so, we use a case study of an IT-management consulting company ranked among the world’s top 20 companies and whose offices are located throughout the world. Our discussion proceeds as follows. Section 2 uses Bourdieu’s theory to review the misalignments between the context of KM software and that of the adopting organisation. Section 3 introduces our research methodology and the framework. Section 4 introduces briefly the case company and then presents data analysis and findings. The last section discusses the key issues arising from the findings and presents some conclusions and suggestions for future research.

## 2 UNDERSTANDING THE MISALIGNMENT OF SITUATED KNOWLEDGE WORK CONTEXT

For this study, understanding the ‘situated’ nature of knowledge work practices is of paramount importance to help analyze sources of misalignment between KM technology and the adopting

organisation on the following grounds. First, users are usually unaware of developers' context and the embedded assumptions and rules of the surrounding world (Orlikowski, 1992; Latour, 1992). Indeed, the context of knowledge work, along with their assumptions and rules as well as knowledge attributes such as its "sticky" and contextualised nature (Szulanski, 1996), is the factor that makes knowledge work practices different from other work practices (Schultze, 2000). In this context, a mere understanding of what 'people do' is often not adequate in helping organisations to anticipate the long-term impacts of technology, both intended and unintended (Schultze and Boland, 2000).

Second, knowledge, be it object, cognition or capability, must be enacted from people's practices and reside in a particular work context (Orlikowski 2002). In this regard, to understand KM problems, analyzing what experts do in situ is crucial for studying how their practices are embedded in and shaped by work contexts (Hsiao et al, 2006). In other words, people and their practices can not be separated from the embedded work contexts (Lam, 1997; Tyre and von Hippel, 1997). Neither is it possible to analyze KM problems without considering the contexts where these practices were acquired (Lave and Wenger 1991; Orlikowski 2002). An ignorance of how practices are shaped within work contexts also induces operational problems of KM initiatives and results in difficulties with regard to technology adoption.

Third, different expert groups may employ different types of knowledge under different work contexts (Bogenrieder and Nooteboom, 2004). Alternatively, to acquire a 'situated' knowledge for a particular project, experts must participate in different working situations (Lave and Wenger, 1991; Tyre and von Hippel, 1997). Under different work contexts, knowledge can reside in physical processes, social communities and industrial contexts (Lam, 1997; Tyre and von Hippel, 1997). Therefore, detached from work contexts, the analysis of misalignment will only show 'how information is managed' without elaborating on why one group can employ technology to collaborate, share, and reuse knowledge effectively whilst another group struggles with the same technology (e.g. Huber, 2001). Hence, unattached to practices, transferring knowledge as object from one place to another or sharing it as individual cognition is out of the question (Hsiao et al, 2006). Transferring knowledge as a capability initiates a learning and evolving mechanism within individuals to enact 'doable practices' in any particular context (Orlikowski, 2002).

Our growing awareness of situated knowledge work context implies that anticipating the impact of KM technology on both organisation and individuals alike would require us to understand the various processes and relationships through which work practices enact and re-enact the 'objectified social structures and the conditions' where they occur (Schultze and Boland, 2000: 195; See also Orlikowski, 2002). We employ Bourdieu's theory of practice as we believe it fits the analysis of 'situated' knowledge work practices in our research setting.

For instance, elements such as *field (structures)*, *habitus* and *practice* described in Bourdieu's theory of practice (1990 and 1998; Bourdieu and Wacquant, 1992) are very much relevant to knowledge work practices in any organisation (See *figure 1* in *section 3*). To illustrate, within a particular *field*, knowledge workers struggle for power to obtain the intellectual capital. These multiple *fields* then define the (social) knowledge *structures* characterising a 'context'. Such (social) knowledge *structures* are then internalised into knowledge workers' minds and bodies as *habitus* acting as a symbolic template for their conduct, thoughts and judgments. These dimensions of *habitus*, underpinned by their own cognitive and motivating principles and shaped by their own collective experiences (Bourdieu, 1990), then decide their repeated and patterned knowledge behaviours and practices. Notably, understanding two important qualities of habitus is significant to know why there may be existing differences between the knowledge work practices between two individuals or two organisations. One is the *habitus' durability* that explains why people adhere to certain knowledge work practices regardless of the working conditions. The other is the *transposable quality* that facilitates the knowledge worker's ability to cope with ever-changing situations and to innovate in the face of unforeseen circumstances. Such an improvisation in practice is critical for organisational learning, innovation and change (Barrett, 1998). Deducing from Bourdieu's theory, if a KM technology is developed in a context where people, for some reason (e.g. history, culture, experience, etc.) become

familiar with a particular ‘style’ of knowledge work practice that favours resistance to change practices, then this particular KM technology may not be appropriate for a wider market where requirements for technology customisation is mandatory. Alternatively, in a context such as that of a global management consultancy firm, knowledge workers, in some cases, may need to adapt to certain types of knowledge work practice in order to be able to work with international clients. Such ‘situated’ knowledge work practices may inevitably be different from what was assumed and inscribed by the KM technology developer. In sum, since *habitus* is a concept resembling culture (Harker, 1990) and ‘*socialised subjectivity*’ (Bourdieu and Wacquant, 1992: 126), we believe that country-level as well as industry-level differences are among pivotal factors in designing, developing, adopting and implementing KM technology.

As a result of a dialectical relationship between a specific circumstance in a *field* and *habitus*, knowledge work practices are effectively improvisational actions enacted by dynamically combining past experience, the present situation, and the implicit anticipation of the future consequences of these very practices (Bourdieu, 1973). The combination of all three elements varies from one organisation to another. Although two organisations may have the same assumptions and visions for their current contexts of knowledge work together with the implicit prediction of the outcomes of such practices, differences in their past experiences (i.e. behaviours, feeling and judgement, success or failure) may eventually result in somewhat differing situated practices performed by each organisation. For instance, Lam’s (1997) study exploring knowledge transfer between British and Japanese engineers found that British engineers worked quite independently in their social network and relied on explicitly codified practices (i.e. electronic repository) for disseminating knowledge. In contrast, as the Japanese engineers collaborated in a close-knit social network, knowledge transfer was mostly dependent on their intensive socialisation, which cannot be easily made explicit unlike formally codified rules. In this example, we contend that the difference in *habitus*, where British engineers work individually whilst Japanese engineers work collectively, eventually leads to the difference in knowledge work practice where Japanese engineers rely more heavily on their team-mates for solutions. We would therefore argue that a specific KM software package, if produced by developers in the UK and sold to the Japanese market, should additionally reflect such unique knowledge work practices to boost collaboration and capture necessary knowledge for re-use. The differing ‘situated’ knowledge work contexts can be also reflected via industry-level differences. Consider the pace of innovation activities for example. In the context of an innovative but stable industry, the development of a new product often follows a continuous technological roadmap (e.g. microprocessors). However, in the context of fast-moving industries such as biotechnology, aerospace, nano or computing, the ever-increasing competition in the marketplace may activate a rapid, discontinuous innovation in product and process (Hsiao et al, 2006). Eventually, lessons learned must be updated frequently, rendering it increasingly difficult for experts to spend sufficient time submitting their reflections and experiences (Hsiao et al., 2006). The differing nature of the two industry contexts reflected by the propensities (*habitus*) towards producing products, suggest that the resultant practices would require organisations to acquire differing knowledge work structures. Hence, employing the same technology to support knowledge works in two completely differing ‘situated’ contexts could be problematic. We would expect for example a KM software package employed in the context of fast-moving industries to incorporate special structures to enable experts to capture, classify and extract contents for re-use more efficiently and in a more timely fashion than in slower moving industries. Pentland (1995) for instance reported in his research that the decision-support system designed to share energy-audit engineers’ practices was significantly limited because the software algorithms became quickly outmoded due to the increasingly diversified energy-audit regulations in the US and the consequent changes to the audit processes.

### **3 THE RESEARCH FRAMEWORK AND METHODOLOGY**

Our literature review has suggested that the misalignments of knowledge work context between KM software and organisations can be conceptualised as in *figure 1*. Additionally we use Markus and

Tanis's (2000) four-phase view of the enterprise system experience cycle to explore misalignments. Markus and Tanis's phase view helps us to clarify the business or operational context where misalignments arose. Such a context is also essential to understanding how KM practices occur throughout the technology lifecycle. Based on our case firm's actual software implementation, we focus on the first three phases. Phase I, the chattering phase, involves gathering and defining the business case and solution constraints. Phase II, the project phase, involves getting system and end-users 'up and running'. Phase III, the shakedown phase, involves getting the system and users to be in normal operation after the system's roll-out. Each of these phases occurs sequentially with no time lags in between the phases.

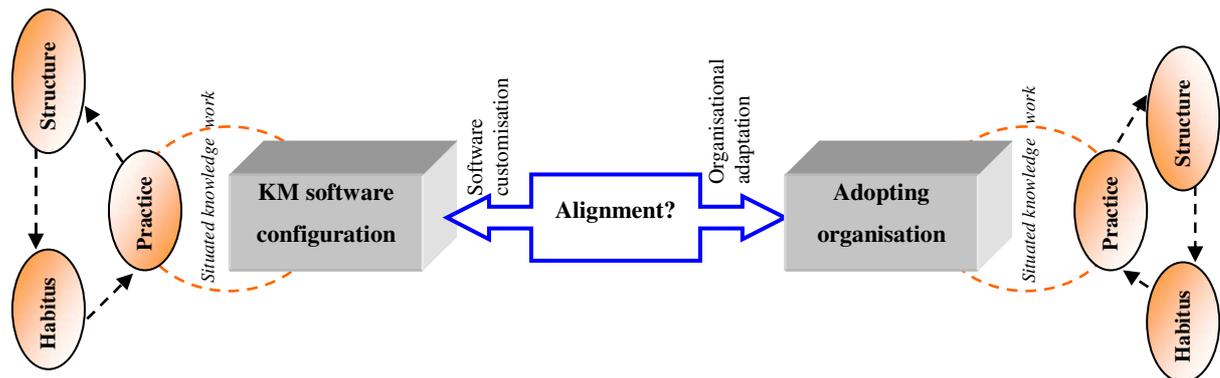


Figure 1. *KM software-organisation misalignments (Adapted from Bourdieu, 1998; Schultz and Boland, 2000)*

We adopted a case study strategy (Yin, 1994) to investigate the likely misalignments between KM software package and the implementing organisation. This is a well-accepted approach to study the complex phenomena of IT implementation in an organisational setting (Orlikowski and Baroudi, 1991; Yin, 1994). We analysed the Change Request Forms (CRFs) submitted by the case study organisation from phase I to III to identify instances of misalignments during the course of a KM portal implementation project. A misalignment was defined as any instance where the KM group identified an organisational requirement that they felt was not being addressed by the KM software package. To exclude minor or trivial misalignments only those reviewed and accepted by the KM team and recorded in the standardised CRFs were analysed. The KM group and IS professional discussed with each other to decide whether to accept, put on hold or reject the request, and then with vendor's consultants to decide whether to adapt to or customise the portal. Following this analysis, semistructured interviews were used to confirm and further clarify the contexts and rationale of identified and potential misalignments. The field work (lasting about 9 months) comprised of familiarising ourselves of the company's business processes, reviewing the KM system and documentation (e.g. the technology, company's documentation, contracts, project files, meeting minutes, requirements analysis, issues logs and video recordings of the negotiation between the KM group and vendor's consultants), and interviewing 19 key internal stakeholders to gain insights from many different perspectives including all members of the KM group, i.e. KM programme manager, KM roll-out project managers, content managers, IS professionals, and especially two consultants representing the vendor. Additionally, informal meetings formed further sources of data gathering. Care was taken to consider all pertinent case evidence to reduce the risk of research bias. Contextual data that further explain the observations made were taken into account (Klein and Myers, 1999). Each interview lasted about an hour and was then transcribed and checked with interviewees for accuracy. The interviews were analysed to identify the sources of misalignments. The conceptual framework is used to examine the data, and to consider some 'what if' questions arising from problems reported by the interviewees or anticipated during the case. Findings were also discussed with two industry experts with rich experience of KM implementation. In all, 83 distinct instances of misalignments were

identified. However, since the focus of this paper is on misalignments of situated knowledge work context, we therefore analysed only 43 instances that are related to this issue. Our analysis was conducted as an iterative loop to uncover the factors underlying each instance. We found that of 43 instances, 32 surfaced during phase III. This means that the majority of misalignments only surfaced during actual interaction with the business or operational context. The remaining instances submitted during phase II were requested because of the consultants' experiences.

## 4 CASE STUDY ANALYSIS

### 4.1 Case company's profile

*KLN (pseudonym)*, headquartered in Europe and currently ranked within the world's top 20 companies in terms of revenues, is a global IT-Management consultancy firm and employs tens of thousands of people in over 35 countries. KLN provides business consulting, systems integration and IT and business process outsourcing services across diverse markets including telecoms and media (T&M), financial services (FS), energy and utilities (E&U), industry, distribution and transport (IDT), space and defence (S&D) and the public sector. The company formally launched its KM initiative in 2005 although it had used portal technology from mid 2003. From late 2006, the company decided to migrate onto the latest version of the portal technologies with many enhanced features and a new design. The company's portal is divided into three environments, namely *My Information*<sup>1</sup>, *Workspaces*<sup>2</sup> and *Our Knowledge*<sup>3</sup>. This organisation was chosen based on a combination of accessibility and representativeness: KLN is a global consulting firm which is commonly discussed as the archetype of knowledge-intensive firms consisting of multiple communities of practice (Alvesson, 1993); KLN has implemented its KM initiative, including its portal, in a substantial way; KLN has a large-scale technology infrastructure in terms of its user base; KLN's global operational context could present some interesting challenges affecting its technology implementation.

### 4.2 Data analysis

As far as the 'situated' knowledge work context misalignments are concerned, we have identified and classified them into six main themes of misalignment in accordance with our conceptual framework. The themes are related to access control for external workspaces, assistance for working with smart documents, enhancing the report function in *Our Knowledge* environment, searching and grouping results according to content types, capturing organisational metadata, and re-using workspace's default components.

The first misalignment theme was about strengthening the access control mechanism. One of the key objectives of this case company's KM initiative is to enable its clients to access workspaces outside the company conveniently. Since clients can only access 'external workspaces', which are similar to the 'actual' workspaces inside the company, it is important to effectively control clients' access to these external workspaces. Upon reviewing the current protection and authentication method, some consultants found that the controlling mechanism must be strengthened to ensure the integrity of the organisation's intellectual assets. For example, the current authentication method requires only a username and password check to fully access the system. However, the requesters were attempting to implement a more secure access control process that required the verification of a client's identity and

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<sup>1</sup> *My Information* provides private and shared information relating to each staff. It features a personal storage space for shared and private documents and allows for the management of an individual's company profile.

<sup>2</sup> *Workspaces* are web-based environments that enable teams to share and collaborate on information.

<sup>3</sup> *Our Knowledge* is a central store of publications, shared with all company staff. The information is stored in knowledge areas by subjects, such as sales and marketing and market intelligence.

purpose of access, in order to facilitate a more differentiated approach to access levels for various clients. To progress between levels, clients must interact with a series of prompting questions on their understanding of the projects, i.e. their roles and status. All these practices are monitored by the local workspace's manager in real-time. Viewed from Bourdieu's theory of practice, this 'situated' knowledge work practice led to a misalignment that can be explained as follows. First, for the position in *field (structures)*, the primary concern of this global consultancy firm, in general and the KM group in particular, is dealing with risks of breaching information security, ensuring knowledge integrity and protecting intellectual assets. Specifically, the risk of breaching information security is higher than ever because of KLN's global operational context. The problem is getting more acute since KLN has pursued an acquisition strategy in recent years, and thus experienced an expanding pool of international projects. In this context, the fact that ever more clients have access to external workspaces further threatens the integrity of KLN's intellectual asset. These facts resulted in the *habitus* that led the KM group to apply a more restrictive access control mechanism. Thus, by suggesting the above-mentioned *practices* to verify and authorise the clients' access level, consultants believed organisational knowledge would be better controlled. Misalignment arose as the portal was not intended to support this sophisticated mechanism.

The second misalignment theme was related to assisting content managers and experts in classifying documents more efficiently. Specifically, what the requestors suggested doing was to equip the portal with structures to easily capture contextual organisational metadata from produced or received contents. For example, regarding the E&U industry, many projects and requirements from international clients have produced a very high volume of documents, prompting the need to classify these contents more efficiently. According to the KM Co-ordinator in Holland: "*Tim [consultant based in Holland] told me a couple of times that the [current] metadata could not help classify the documents effectively. [Here is] an example. Tim is the author of two documents on Intelligent Transport Systems (ITS) in Holland and Singapore. There are certainly many common attributes within [these documents]. However, the context [between them] is slightly different. I mean, users need to know how, what and why behind the work [of ITS] is being undertaken in those countries or [they] need to know for each work's context, what decisions were made in the first place that our company can begin and continue, to learn*".

One way to deal with the above problem is to capture more 'information in context' for the meta-data. This kind of 'information in context', which seems to be unique or situational, is normally defined and reviewed in a meeting held every month for leading experts in each industry sector to find out what have been the prominent or newly-emerging issues to be included. Then, such 'information in context' would be cross-checked by other industry sectors to remove duplication or confusion and to increase transparency. Eventually the portal should be able to detect certain keywords which appear in frequencies defined by this 'contextual information'. Viewed from Bourdieu's theory of practice, this 'situated' knowledge work practice led to a misalignment that can be explained as follows. First, for the position in the *field (structures)*, being empowered by portal technology, content managers must be able to classify an increasing volume of contents accurately. However, what is worth mentioning is the fast expanding pool of international clients and projects that causes difficulties and complexities for classifying the contents effectively and quickly. Given this context, content managers are prone to (*habitus*) capturing more valuable data describing the projects' circumstances, thereby continually updating the metadata and taxonomy. Adopting the above-mentioned *practice* can strengthen content managers' *positions* in the *field*. Misalignment arose since the portal was not assumed to have the capability of capturing such 'situational' data.

The third misalignment theme touched upon enhancing the reporting function in the organisational repository. Because lack of reporting (i.e. on pushing and pulling knowledge items to and from *Our Knowledge* environment) led to resistance in terms of KM implementation in some parts of the business, content managers in Bangalore (India) and UK suggested upgrading the reporting function. On the one hand, this upgrading is crucial for content life-cycle management to ensure the effectiveness, quality and reliability of the content for users. On the other hand, upgrading the

reporting function could provide content managers with competent tools to encourage users' participation in contributing knowledge to a particular area such as sales and marketing. Content managers could also measure the level of contribution from different users or establish the most visited or frequently downloaded documents in a particular country, business unit or service sector. This information could also be useful for the HR department as part of the KM performance indicator (KPI). This context was clarified by a KM programme manager: *"One of the key things is to provide them [with] the feedback in terms of what is actually happening. If we ask the Marketing department in a country to do something, then we need to show them what they have actually achieved so far and give them some targets, for example and allow them to compare how they are doing with another company in other parts of business...So, we will know how much content is being provided by each part of the business and what the usage level is like...In other words, there are two sides. One is [that] we want to have reporting on what is in there [Our Knowledge]. The other is [that] we want to have reporting on what has been taken out. That means we have the publication side and the usage side"*.

This misalignment reveals a difference in 'situated' knowledge work context. In accordance with Bourdieu's theory, for *position (structure)* in the *field*, to support the overall KM initiative, content managers need to assess how users across the company pull and push knowledge from and to *Our Knowledge* environment. Their roles to support the knowledge contribution and use then lead to their tendency (*habitus*) to measure the number of documents to be downloaded and uploaded in each business unit or sector. The portal was not designed to assist content managers in capturing and reporting data on knowledge use in *Our Knowledge* environment. Therefore, by adopting the above suggested *practices*, content managers believe their *positions* in the *field* could be strengthened.

The fourth misalignment theme regarded to enabling the project teams to work more productively. From a knowledge-based perspective, assisting knowledge workers in creating contents is a good way to increase responses to fast changing business environment (Nonaka et al., 2000). There could be certain ways to automatically provide staff with data, information and reports for analyses. One way was to request to adopt a process whereby consultants are able to work with smart documents in workspaces. Specifically, by trying to embed a special tool into the portal, consultants could start a new project based on time-lines. Each of the project's time-lines links with appropriate templates for documents and analyses that need to be created at each point of the project life-cycle. To do the analysis, topic or context-related reports for each of the project's time-line are supplied by an automated procedure that collects data from Business Intelligence (BI) software. This kind of procedure is based on profiles defined by consultants before and during their project. Such knowledge works are particularly useful in the FS, T&M and E&U sectors. According to a senior consultant in IDT and FS in Germany: *"Because of our recent acquisition, within six months, the number of projects and clients has increased remarkably. The deals are getting more complex and uncertain. To ensure our powerful delivery capability, we must be able to cope with abrupt changes and complexities...Internally, part of our competitive advantages is a strong BI [Business Intelligence] system continually providing us with quality and reliable data about our competitors and the [global] market. Our approach is to connect the output of BI with each of the project's time-lines. That means [that] we are trying to make things [reports and templates] ready for them [consultants] to analyse throughout their projects. They would no longer spend too much time reading and manually importing things from BI [system]"*.

Viewed from Bourdieu's theory of practice, this misalignment can be explained as follows. First, for the *position* in the *field (structures)*, there are several unforeseen or fast-changing circumstances occurring in sectors such as FS, T&M or E&U. To survive in the *field*, team members need to equip themselves with tools and data to cope with such situations. To tackle these situations, team members tend to look for (*habitus*) appropriate ready-for-use templates and automatically imported reports to support analysis in a timely fashion. By adopting the above mentioned *practices*, consultants could cope better with the fast-moving business environment. Misalignment arose because the portal was not assumed to support such an organisation-specific approach.

The fifth misalignment theme was related to organisation's processes of extracting and viewing knowledge items. Given the nature of the work, many users favour searching and grouping results by content type (i.e. brochure, project summaries and references) and languages in *Our Knowledge* environment as they believe content type is important for refining what they are looking for. For example, the KM roll-out project manager argued that the retrieval process would be more productive and accurate when items are grouped and displayed according to content type. This misalignment could be understood by using Bourdieu's theory. Indeed, at each point of time during the project, consultants would have a special need for knowledge items because of their *positions* in the *field*. If they are related to customer service, what they need to find is customer reference. From a Knowledge-Based View, this practice is related to the speed of pulling the knowledge items for knowledge workers. For instance, a staff working on a Customer Relationship Management project for clients of public transportation in France would need to know about sales of tickets, brochure or case studies on customer services in transportation in both English and French. Alternatively, those who work on projects for clients of T&M industry in Finland will need to obtain contents produced by the global service team such as lessons learned reports or examples in Finnish to add value to their work. Instead of reading all the hits returned, the above suggested *practice* will bring only those categories containing the items that consultants would be interested in. Their roles thus lead to their disposition (*habitus*) to find only things having the appropriate properties and metadata. Hence, the suggested *practices* may assist consultants in searching for the right items in less time. Misalignment arose because the portal was not assumed to address this organisational-specific need of extracting and view contents.

The sixth misalignment theme was about automatising more the mechanism of creating bidding workspaces. To win bids over competitors, one of the critical tasks is creating bid projects, and thus developing the necessary bidding workspaces in less time. To do so, it is important to be able to 'reuse' templates as well as default components of existing workspaces. The context was clarified by the KM programme manager as follows: "*Here is an example of UK financial services. OK, I want to create bid workspaces. It may be that I've got some local business processes which applied for that particular business unit. So this means [that] all bids must have certain checklists [of what-to-do actions as described by the local business processes] to be followed. In that situation, it's more convenient for me to set up workspaces with default lists or web-parts or whatever for all bid workspaces which are owned by UK financial services. That is to say, I want to have the ability to save the template for [new bid] workspaces, and to feed that [the templates] into [the local business] processes so one can use that template by default*".

Simply put, such a requested approach could be seen as a way of standardising bid workspaces, which was supposed to be changed in the old version of the portal. Now with the portal's new version, it is possible for the KM group to do things like default web-parts and default checklists so that the workspace's configuration can be captured and stored. By employing Bourdieu's theory, this misalignment can be explained as follows. First, for the *position* in the *field* (*structures*), in some core service sectors of KLN such as FS, IDT and E&U, the pressure for winning bid projects is gradually rising. A fast expanding pool of projects and an ever-increasing demand from clients create pressure on consultants to respond to bids rapidly. Given this context, consultants could quickly create (*habitus*) bid workspaces using templates without having to manually re-create every aspect of the workspace or default checklists. Such evolving *structures* would help teams save cost and time, thereby reducing the cost of the bid. Misalignment arose because the portal was not assumed to support consultants to create workspaces in this way.

## 5 DISCUSSION & CONCLUSION

Misalignment instances found in this case study have shown differences in situated knowledge work context between technology and the organisation. Such misalignments have also illustrated the complexities of the on-going interaction between consultants using the portal and both the immediate

and broader contexts in which these technologies are situated. Specifically, underpinned by Suchman's (1987) account, we contend that such complexities reflected by the requirements and justifications for changing existing knowledge work structures or embedding emergent ones are contingent upon the immediate and broader contexts rather than the mere intention of the consultants for better knowledge work performance per se. We then argue that it is the intensity of such complexities that may be attributable to the extent, whether it should be superficial or deep, to which consultants wish to change existing knowledge structures or embed emergent ones. Additionally, we believe that the nuances of such complexities may also have certain impact on the consultants' attitude<sup>4</sup> towards changing or embedding the structures. We have shown how this occurred in the case using Bourdieu's theory to analyse the surfaced misalignments. For instance, in relation to the misalignment in terms of external workspace access control, the ongoing interaction between consultants and both the immediate context where the clients were operating, and the broader context represented by the company's global operational environment, created new levels of complexity that in turn opened up the potential for information security breaches. This complexity became more severe in terms of intensity, and more acute in terms of nuance because of the less secure global context and an expanding user (including international clients) base. Under these circumstances, the fact that more and more clients access the external workspaces further threatened the integrity of the company's knowledge asset. This explains the reasons why some consultants suggested adopting a more subtle controlling mechanism, and why some consultants' attitudes were rated '*emergency*' in order to 'deeply' embed certain knowledge work structures into the portal with maximum effort and resources. Another illustration is the misalignment related to assisting experts to easily capture contextual organisational metadata. The complexity here had to do with increasing time pressures on consultants causing difficulties for classifying the contents effectively and quickly. This ever-growing pressure was due to the fast expanding pool of international clients and projects which resulted in an increasing volume of contents. Consequently, since this complexity is severe in terms of intensity and nuance, some consultants requested a 'deep' change by embedding emergent structures into the portal. Such ongoing interactions between consultants and both the immediate and broader contexts will continually create new complexities because the KM technology in this case study has opened up a new network of relationships across boundaries which eventually make uncertainties and instability become more prevalent (King and Star, 1990). Alternatively, in accordance with Orlikowski's (2002) account that '*knowing-in-practice*' is necessarily provisional, not something as 'given and static' as people draw upon their physical presence in a social setting, on their cultural background and experience, and on sentient and sensory information (Blackler, 1995; Tyre and von Hippel, 1997), we believe that misalignments of this type will keep arising. More particularly, knowledge work practice does not exist independent of social interaction, and its content does not necessarily mean the same value to all the people getting involved in the designing, developing and adoption processes (Dougherty, 2004). This differentiates KM software packages from the other enterprise systems such as ERP/CRM in that the misalignments relating to KM are perpetual throughout the system life-cycle.

The contributions of this study are threefold. In discussing a number of misalignments, our study strengthens Schultze and Borland's (2000) account that exploring as well as understanding the unique knowledge work context is critical for the successful adoption and implementation of KM software packages. Besides, in addressing the weaknesses of their work, our results could be useful in terms of understanding the sources of misalignment and further presenting a more diversified, nuanced picture of misalignment in a global operational context comprising a large user base, thereby enriching theory of KM technology adoption and implementation. From an organisational perspective, such an understanding is highly salient as the issues of technology adoption "*profoundly affect the manner, quality, and outcomes of organisational realities*" (Orlikowski and Scott, 2008: 5). Practically, studies of this nature should assist organisations toward understanding the factors inherent within a successful KM technology implementation project in large or global firms, particularly those rich in high-value

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<sup>4</sup> KLN's KM group defines four levels of priority to tackle misalignments: *emergency, high, medium and low*.

text-based knowledge for making decisions like consultancies, healthcare, R&D, defence, financial services and legal organisations.

Results of this study must be interpreted in the context of its limitations. First, given Markus and Tannis's (2000) four-phase enterprise system lifecycle and the actual implementation, this single case study has only explored the first three phases. Misalignments arising from the onward and upward phase, which continues from normal operation until the system is replaced by an upgrade or a different system, remain undetected. This latter phase is essential for a complete assessment of the misalignments between the technology and this global firm. Second, due to limited organisational resources, we could not interview more users in different countries to gain a better view of situated knowledge work structures, both current and emergent. Future research should look into misalignments identified from a more highly regulated domain such as legal or health-care services, or how such misalignments have influenced organisational responses via organisational adaptation or technology customisation, or the process through which organisational staff arrive at a resolution for the misalignment (e.g. how users identify emergent situated knowledge work structures and then persuade the KM group to accept their requests). Such findings could have some valuable implications for knowledge based structures for innovation (See e.g. Anand et al, 2007).

## References

- Anand, N., Gardner, H. K. and Morris, T. (2007). Knowledge-Based Innovation: Emergence and Embedding of New Practice Areas in Management Consulting Firms. *The Academy of Management Journal*, 50(2), pp. 406-428.
- Alvesson, M. (1993). Organizations as rhetoric: knowledge-intensive firms and the struggle with ambiguity. *Journal of Management Studies*, 30(6), pp. 997 – 1015.
- Barrett, F.J. (1998). Creativity and Improvisation in Jazz and Organizations: Implications for Organizational Learning. *Organization Science*, 9, pp. 605-622.
- Blackler, F. (1995). Knowledge, Knowledge Work and Organisations: An Overview and Interpretation. *Organization Studies*, 16(6), pp. 1021-1046.
- Bogenrieder, I. and B. Nooteboom (2004). Learning groups: What types are there? A theoretical analysis and an empirical study in a consultancy firm. *Organization Studies*, 25(2), pp. 287–313.
- Bourdieu, P. (1973). Three forms of theoretical knowledge. *Social Science Information*, 12, pp. 53-80.
- Bourdieu, P. (1990). *The logic of practice*. Stanford, CA: Stanford University Press.
- Bourdieu, P., (1998). *Practical Reason: On the Theory of Action*. Stanford, CA: Stanford University Press.
- Bourdieu, P. and Wacquant, L.C.D. (1992). *Invitation to Reflexive Sociology*. Chicago, IL: University of Chicago Press.
- Dougherty, D. (2004). Organizing Practices in Services: Capturing Practice-Based Knowledge for Innovation. *Strategic Organisation*, 2(1), pp. 35-64.
- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structure*. Berkeley, CA: University of California Press.
- Grudin, J. (1994). Groupware and Social Dynamics: Eight Challenges for Developers. *Communications of the ACM*, 37(1), pp. 93-105.
- Harker, R., (1990). Bourdieu – education and reproduction, in Harker, R., Mahar, C., Wilkes, C. (Eds.). *An Introduction to the Work of Pierre Bourdieu*. New York: St Martins Press, pp. 86-108.
- Hsiao, R.L., Tsai, S.D.H. and C.F. Lee (2006). The Problems of Embeddedness: Knowledge Transfer, Coordination and Reuse in Information Systems. *Organization Studies*, 27(9), pp.1289-1317.
- Huber, G.P. (2001). Transfer of knowledge in knowledge management systems: Unexplored issues and suggested studies. *European Journal of Information Systems*, 10(2), pp. 72–79.
- King, J.L. and S.L. Star (1990). Conceptual Foundations for the Development of Organizational Decision Support Systems. *Proceedings of the 23<sup>rd</sup> Hawaii International Conference on Systems Science*. Los Alamitos, CA: IEEE Society Press, pp. 143-151.

- Klein, H.K. and Myers, M.D. (1999) A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 23(1), 67-93.
- Lam, A. (1997). Embedded firms, embedded knowledge: Problems of collaboration and knowledge transfer in global cooperative ventures. *Organisation Studies*, 18(6), pp. 973–996.
- Latour, B. (1992). Where are the missing masses? The sociology of a few mundane artefacts in Bijker, W.E. and Law, J. (Ed.) *Shaping Technology Building Society*. Cambridge, MA: MIT Press, pp. 225-258.
- Lave, J. and E. Wenger (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.
- Malhotra, Y. (2005) Integrating KM technologies in organizational business processes: getting real time enterprises to deliver real business performance. *Journal of Knowledge Management*, 9(1), 2005, 7-28.
- Majchrzak, A., Rice, R.E., Malhotra, A., King, N. and Ba, S. (2000). Technology Adaptation: The case of a computer-supported inter-organisational virtual team. *MIS Quarterly*, 24(4): 569-600.
- Markus, M.L. and Tanis, C. (2000) *The Enterprise Systems Experience-From Adoption to Success*. In *Framing the Domains of IT Research: Glimpsing the Future*, Zmud RW (Ed.), 173-207, Pinaflex, Cincinnati.
- Nonaka, I., Toyama R. and Nagata A. (2000). A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and Corporate Change*, 9(1), pp.1-20.
- Orlikowski, W. J. and J. J. Baroudi, (1991). Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research*, 2(1), pp. 1-28.
- Orlikowski, W.J. (1992). The duality of technology: rethinking the concept of technology in organisations. *Organisation Science*, 3(3), pp. 398–427.
- Orlikowski, W. J. (1996). Improvising Organizational Transformation over Time: A Situated Change Perspective. *Information Systems Research* 7(1), pp.63–92.
- Orlikowski, W. J. (2002). Knowing in practice: Enacting a collective capability in distributed organizing. *Organization Science*, 13(3), pp. 249–273.
- Orlikowski, W.J. and S.V. Scott (2008). *The Entangling of Technology and Work in Organisations*. Working Paper Series, Information Systems Department, London School of Economics, University of London, pp. 1-46.
- Pentland, B.T. (1995). Information systems and organizational learning: the social epistemology of organizational knowledge systems. *Accounting, Management and Information Technologies*, 5(1), pp. 1-21.
- Roell, M. (2004). Distributed KM - Improving Knowledge Workers' Productivity and Organisational Knowledge Sharing with Weblog-based Personal Publishing. Available: <http://www.roell.net/publikationen/distributedkm.shtml#knowledgework>, (Accessed: December 26, 2006).
- Schultze, U. (2000). A confessional account of an ethnography about knowledge work. *MIS Quarterly*, 24(1), pp. 1-39.
- Schultze, U. and Boland, R.J. (2000). Knowledge management technology and the reproduction of knowledge work practices. *Journal of Strategic Information Systems*, 9, pp. 193-212.
- Suchman, L. (1987). *Plans and situated actions*. Cambridge: Cambridge University Press.
- Suchman, L. (1995). Making work visible. *Communications of the ACM*, 38(9), pp. 56-64.
- Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17, Winter Special Issue, pp. 27–43.
- Townley, B. (1993). Performance appraisal and the emergence of management. *Journal of Management Studies*, 30(2), pp. 221 – 238.
- Tyre, M. J. and von Hippel, E. (1997). The situated nature of adaptive learning in organizations. *Organization Science*, 8(1), pp. 71–83.
- Yin, R. (1994) *Case study research: Design and Methods*, 2nd ed. SAGE publication, Thousand Oaks, CA.