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# Knowledge management technology and the reproduction of knowledge work practices

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## Abstract

Organizations seeking ways to manage their knowledge assets are increasingly turning to information technology for solutions. As knowledge management systems are being developed and implemented, it behooves both practitioners and researchers to learn from the successes and failures of more established types of information systems including MIS and DSS. According to the Standish Group, the implementation success rate for these systems runs at around 30%. Many argue that these low success rates are, in part, attributable to technologists' lack of understanding of the situated work practices of the systems' user communities. This has led to increasing calls for research on work practice in the field of Information Systems.

Unfortunately, it is not always clear what is meant by work practice. Furthermore, the consideration of work practice outside of its circuit of reproduction can be misleading. By circuits of reproduction we mean the reciprocal relationships through which practice creates and recreates the objectified social structures and conditions in which it occurs.

In this paper, we adopt Bourdieu's Theory of Practice to illuminate work practices and their circuits of reproduction. Relying on data that were collected during an eight-month ethnography of knowledge work practices in a US-based, Fortune 500 manufacturing firm, we focus on the situated "gatekeeping" practices of a group of competitive intelligence analysts and explore how their situated practices were at odds with the generalized "gatekeeping" practices embedded in a knowledge management technology whose implementation they themselves were advocating. We argue that their inability to see this incongruence until very late in the pilot implementation is associated with an understanding of their work practices in isolation, i.e. outside of their circuits of reproduction. © 2000 Elsevier Science B.V. All rights reserved.

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People know what they are doing,  
they know why they are doing it,  
but they don't know what doing it does.

— Townley (1993: 235; paraphrasing Foucault 1982: 787)

## 1. Introduction

As organizations are looking to information technology for solutions to their knowledge management efforts, it behooves both practitioners and researchers to identify and apply the lessons learned from the development and implementation of other classes of information systems with which organizations have had more experience. These include transaction processing systems, management information systems, decision support systems and executive information systems. Over the years, the Standish Group,<sup>1</sup> polling Chief Information Officers in the United States, has reported that only about 30% of information systems projects are deemed a success. Many have argued that system designers' failure to understand situated work practices lies at the heart of these poor implementation success rates (e.g. Grudin, 1994; Suchman, 1995), because situated practices ultimately determine the long-term effects of information technology in organizations (Barley, 1988; Wynn, 1991; Blomberg et al., 1993; Brown and Duguid, 1991; Davenport et al., 1996). Furthermore, recent research inspired by Giddens' structuration theory (Orlikowski, 1996) and actor network theory (Walsham and Sahay, 1999) emphasizes the importance of a focus on action and agency in understanding how information technology, organizations and practices shape each other.

From this line of research it follows that developers and implementers of knowledge management systems should develop information technology solutions that are consistent with the knowledge work practices of the intended user communities. This requires a practice-oriented approach. The objective of a practice-oriented approach is to focus on what people '*actually*' do rather than on what they *say* they do or on what they ought to be doing (Pickering, 1992). Suchman (1995) suggests that a practice-orientation is particularly relevant in the area of knowledge management because system designers do not have accepted models for the largely invisible and complex nature of knowledge work that knowledge management technologies are expected to support. The purpose of this research is to explore knowledge work practices as a basis for assessing the intended and unintended consequences of knowledge management technologies.

Unfortunately, it is not always clear what is meant by work practices. In its every-day meaning, the term "practice" distinguishes the abstract from the real (as in theory versus practice). It also connotes the taking of action (as in practicing what you preach), particularly repeated and rehearsed action (as in practicing a dance routine). In an academic context, practices connote intentional, goal-seeking actions that follow certain general principles of procedure (Turner, 1994, p. 8). Because they have a tacit component, practices are difficult to access and fully comprehend even by the people engaging them. Thus

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<sup>1</sup> [www.standishgroup.com](http://www.standishgroup.com). This information is published as part of their CHAOS report.

the study of practice requires attention to the mundane detail of everyday life so as to uncover the local habits, assumptions, taken-for-granted context and tacit knowledge that members of the social group have difficulty articulating (Barley, 1988; Turner, 1994; Lave, 1988). Ethnographic research methods are particularly well suited to the study of practice.

Although a careful study of ‘what people actually do’ provides important input for system design, regarding work practice merely as that which people do and the actions they take is inadequate for anticipating the long-term impacts of technology, i.e. its intended and unintended consequences. As we will show in this paper, to foresee the effects of knowledge management technology, practices need to be understood in the context of their circuits of reproduction, i.e. the reciprocal, cyclical relationships through which practice creates and recreates the objectified social structures and the conditions in which it occurs. A thorough understanding of practice thus needs to include not only what people do, but also ‘what doing it does’ (Townley, 1993, p. 235; paraphrasing Foucault, 1982, p. 787).

In this paper, we illustrate how a perspective of practice that takes circuits of reproduction into account provides a lens and a vocabulary for understanding knowledge workers’ system requirements, and for exploring the incongruence between workers’ situated practices and the idealized (or espoused) practices embedded in technologies. We rely on Bourdieu’s Theory of Practice to define work practices in the context of their circuits of reproduction. Using data from an eight-month ethnography of a knowledge management system implementation project in US Company,<sup>2</sup> a US-based Fortune 500 manufacturing firm, we apply Bourdieu’s Theory of Practice to analyze the work of one of the three groups of knowledge workers whose work practices were the primary focus of this ethnographic study. The group whose work practices we analyze in this paper is the competitive intelligence (CI) analysts. They were one of the intended user communities of KnowMor,<sup>3</sup> the knowledge management technology US Company was implementing. Specifically, we explore how the situated “gatekeeping” practices of the CI analysts were at odds with the idealized “gatekeeping” practices embedded in KnowMor. Interestingly, the competitive intelligence analysts were advocating the implementation of KnowMor, suggesting that they were unable to see the incongruence between the technology and their own work practices, at least not until very late in the pilot implementation. We argue that their inability to recognize this incongruence is associated with an understanding of their own work practices in isolation, i.e. as merely ‘what they were doing,’ rather than within their circuits of reproduction, i.e. ‘what doing it does.’

Our discussion proceeds as follows. First, we describe the research site, the knowledge management technology KnowMor, and the data collection and sensemaking method for this study. We then describe the competitive intelligence analysts’ situated gatekeeping practices and compare them with the assumptions and idealized practices embedded in KnowMor. Then, after outlining Bourdieu’s Theory of Practice, we illustrate how the circuit of reproduction it embraces, provides a conceptual scaffold for identifying the

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<sup>2</sup> In order to maintain the confidentiality of the organizations and the participants involved all company and participant names are pseudonyms.

<sup>3</sup> A pseudonym.

incongruence between situated work practices and technological solutions based on idealized notions of knowledge work. We conclude by considering the implications of using a theory of practice to better anticipate the intended and unintended consequences of knowledge management technologies.

## 2. The research site and the KnowMor project

The data we analyze in this paper were part of a larger eight-month ethnographic research project that investigated the work practices of knowledge workers engaged in the implementation of KnowMor in US Company. US Company is a US-based, Fortune-500 manufacturer of building materials. In 1995, the company recorded sales of US\$3.6 billion and employed 17,000 people at 105 manufacturing sites in 30 countries.

During the time of the fieldwork — between October 1995 and May 1996 — US Company was undergoing significant change. In 1992, US Company, for the first time in its history, sought a CEO from the outside. They hired Hunter who, for 35 years, had been with MegaCorp, one of the largest and most successful American corporations. MegaCorp was renowned for engaging in aggressive downsizing and restructuring since the early 1980s. Hunter started “refocusing” US Company, instigating a cultural transformation intended to change the organization’s mindset from an “industrial” to a more “entrepreneurial” and “technology-based” one. On Wall Street, the perception of US Company was that of a “stodgy”, “drab” and “boring” Midwestern firm. Hunter sought to reconstruct US Company’s image as a “dynamic, aggressive and strategically focused” firm with a “global identity.”<sup>4</sup> Hunter’s goal was to turn US Company into a lean and nimble “learning organization.”

The pilot implementation of KnowMor formed part of US Company’s transformation to a more flexible and competitive knowledge-intensive firm. KnowMor was built on the premise that news only constituted information when a group of people agreed that it had relevance to their organization. Its design therefore embodied an informing process of “alert–assess–escalate”, also referred to as the “gatekeeper model”. A “gatekeeper” designated a person who either had an interest in a topic area or was deemed an expert in a subject matter. His/her task was to continuously scan the environment so as to be “alerted” to relevant news, to “assess” it, and to “escalate” it, i.e. pass onto others, if it had particular importance to the organization.

To support such gatekeeping, KnowMor “profiled” electronic newsfeeds from organizations like Reuters and Dow Jones according to a set of “keywords” defined for the entire organization. Such keywords included names of products, manufacturing processes, raw materials and competitors. Based on their interest and gatekeeping responsibilities, individual users selected keywords from the organizationally defined list. News alerts that contained keywords that matched a user’s personal “interest profile” would then find their way to the user. If the user deemed the news alert significant, he/she could escalate it by increasing the “significance level” of the message and adding comments to it. Once

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<sup>4</sup> The quoted words in this section are from an article published in a magazine popular with the US investment community, 1994.

escalated, KnowMor routed the message to managers whose interest profiles were restricted to messages with elevated significance levels.

The data reported in this paper focus on the work of four competitive intelligence (CI) analysts, Jerry, Masato, Dave and Ned, who were part of the 11-member Business Research group. The CI analysts were salaried employees in US Company. Jerry had been with US Company for 18 years, Ned for 17 and Dave for 12. Masato was the newest member in the group. He had earned his bachelors degree in Procurement and Production from a local university only 2 years earlier. The rest of the Business Research group consisted of market researchers and administrative assistants. Doug was the group's leader. Due to its heavy use of both internal and external information, this department was chosen as a pilot site for both document and knowledge management technologies. Jerry, one of the CI analysts and also a key informant, was a strong advocate of KnowMor and thought of himself as the "champion" of this technology.

The KnowMor implementation failed. The project did not move beyond its initial pilot stage due to technical difficulties, a lack of critical mass (of users) and a lack of project ownership. During the eight months of fieldwork, the CI analysts were the primary users of KnowMor, and they employed it merely as a filtering device, not using any of the groupware features such as escalating messages. At the end of the fieldwork — and one of the catalysts that prompted the researcher to leave the field — a new task force charged with finding knowledge management solutions for US Company's R&D facility, identified another application for KnowMor. They planned yet another pilot.

### **3. Data collection and analysis method**

The data were collected in the following way. One of the authors (Ulrike Schultze) was a participant observer in US Company. She was in the field four days a week, from Monday to Thursday. Over the eight-month period, she spent 111 days in the field. She interviewed participants, observed them doing their work, sat in on their meetings, and tried her hand at some of their work. Throughout, she collected documents, took fieldnotes and met with the other author (Richard Boland) on Sundays to recount the events of the week. These 2–3 h Sunday meetings were used to make sense of incidents in the field, to identify themes and questions and to strategize about how the fieldworker could expose herself to situations that would begin answering these questions. Throughout this workplace ethnography, both authors were therefore engaged in the research.

Constant comparison, a technique that lies at the heart of interpretive research methods included grounded theory (e.g. Strauss and Corbin, 1990) and ethnography (Czarniawska-Joerges, 1992; van Maanen, 1988), was the primary data analysis method we used. The three groups of knowledge workers formed natural clusters for generating insights into work practices and assumptions about social structure, information and knowledge. Through reading and re-reading the fieldnotes and clustering and re-clustering them, structurational cycles relating actions to institutional structures began to emerge for each of the three groups of knowledge workers. Using Bourdieu's Theory of Practice, especially his concepts of field, habitus and practice we refined the inductively-derived structurational cycles through a more deductive approach.

The results of our analysis, as it pertains to the CI analysts specifically, are presented in the next section. We describe the CI analysts' work practices in order to illustrate the apparent fit between KnowMor and their gatekeeping practices. These gatekeeping practices included just-in-time informing, just-in-case accumulation and "why do you want to know" questioning.

In writing up this research, sections of the fieldworker's notes are inserted into the text. This strategy is used to keep the interpretation grounded in the local context and situated language in which the data were generated. The "I" in the fieldnote excerpts identifies the fieldworker herself. Also, double quotes are used to present verbatim speech used by participants in the field, whereas single quotes are used to present paraphrased speech. For a more detailed description of the fieldwork and the subsequent deskwork of analyzing and writing up the research findings, please refer to Schultze (2000).

#### 4. Data analysis: the CI analysts' work practices

##### 4.1. "Just-in-Time" informing

The task of gatekeeping required the CI analysts to scan the environment for information about the industry, US Company and its competitors. They relied on newspaper clipping services, "current awareness" services<sup>5</sup> provided by a host of vendors of on-line information, newspapers and journals, as well as sales representatives to monitor their respective industries and competitors. Besides continually monitoring and scanning the external business environment for significant events, the CI analysts also worked on projects and reports that required them to search for specific information. They had access to a variety of on-line information databases as well as the Internet. Furthermore, they relied on the Knowledge Resource Center<sup>6</sup> to search for information on specific issues.

Increasingly, the CI analysts were dealing with information that was already in electronic format. Jerry, in a meeting with a consultant who was on a retainer to help develop a document management strategy for US Company, described his work in this computerized environment in the following way:

- Jerry explained that more and more of this work was being shipped electronically; he explained how he goes out every day with modem dial-ups to "proactively look for information"; he then explained the convoluted process of converting the file into an ASCII format and putting it into cc:mail and then going through mailing lists to send news to people that needed to know; sometimes he would forget people and have to re-send the message; then he would have to deal with getting comments back from individuals etc.
- [the consultant to whom Jerry was explaining this] wanted to know specifics: how much

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<sup>5</sup> These were services that automatically delivered messages to users' email boxes on a daily or weekly basis. These "current awareness" deliveries were compiled based on keyword selection criteria specified by the users. Only articles that had been added to the database after the last current awareness run were searched for these keywords.

<sup>6</sup> US Company's corporate library.

time it took for him every day to go and get these news items from external sources; how many he would get on a “good day” and how many he would get on a “not so good day”.... he said about 20 on a good day and 5 on a bad day; she asked him how he selected the articles: he said by scanning the titles and then skimming some of them and reading some in detail; he selects these articles based on the significance they have for his clients.

- [Jerry] said the whole way of bringing this stuff into cc:mail and adding commentary in different colors and sending it back and forth between people, was a contrived means of groupware [fieldnotes: 08 February 1996].

The CI analysts’ strategy of co-locating with the divisions that they supported offered them further opportunities for adding their knowledge about US Company, its competitors and the industry to the news alerts they received. They claimed to meet daily and face-to-face with their divisions’ presidents. They also participated in high-level planning meetings. Their co-location with their clients made it possible for them to contribute their information and knowledge at the exact point in time when decision-makers wanted and needed it. The CI analysts regarded this as the best environment in which to add value and influence decisions.

- Ned feels that getting CI information used is done “better face-to-face and in small groups”; if you have large groups then you end up doing a presentation to 50 people; he called this a “dog and pony show”; with small groups you can “share information”, it is “interactive”, all of which means that the “information has more meaning than if they read it some place”;
- so the way he ensures that he has input into the decision making processes, is by interacting with the division president on a daily basis [fieldnotes from interview with Ned: 09 November 1995].

Their emphasis on getting information to decision makers quickly and “resisting the temptation to not provide anything until it is absolutely perfect,” highlights the sense of urgency surrounding the dissemination of “intelligence.” This sense of urgency was also captured in the food metaphors that the CI analysts used to stress the importance of timely information. Information seemed to be just as vital to the life of a modern corporation as food was to human life.

- Dave also does presentations once in a while but he always feels that if his audience don’t know the stuff already, then he has failed “I should have told them this 2 months ago”; he should get the information that is important to the people that need to know as quickly as possible; he needs to get the information out as fast as possible because information, like eggs and milk, “has a limited shelf life” [interview with Dave: 22 November 1995].

#### 4.2. “Just-in-Case” accumulation

To enable “just-in-time” informing, the CI analysts not only needed to scan the

organizational environment on a continuing basis, but they also needed to store this information for future reference. They thus accumulated vast amounts of industry- and company-specific information. Their overflowing file cabinets were proof of this information hoarding.

- Jerry showed me all the sources of information:
  - clipping service (paper-based, newspaper clippings stuck onto larger pieces of paper)
  - trade publications
  - hardcopy from on-line services and PR Newswire
  - annual reports from other companies (competitors)
  - photocopies of trade publications
- he said that he was the only one in the company receiving these documents and news items
- he'd been burned too many times before, throwing things away, that he now feels he needs to keep everything he can [fieldnotes: 03 October 1995].

One of the challenges to this work practice was US Company's "paperfree" initiative, which was part of the organizational transformation. The record retention guidelines stipulated, for instance, that business-related reports should be kept for no more than five years, and scientific records for no more than ten. Some reports were to be filed with the document center, others with the departments that generated them. Furthermore, each employee was only allowed to keep three filing drawers full of paper. Everything else needed to be "dumped." The CI analysts' attachment to their "Just-in-Case information" was particularly noticeable when they were forced to throw away their "junk".

- Ned also explained that you were not allowed to read the stuff that you were about to throw out... Jerry pitched in "otherwise you get all sentimental".
- Ned said that whatever information did not reside in his head was gone; "with time and money we can recreate anything," he said [fieldnotes: 29 April 1996].
- Jerry was using the following line both yesterday and today to characterize what Ned would say if someone was going to ask him a question: "I do not now recall".
- Jerry was also griping about the arbitrariness of the [document] retention guidelines; it was not about throwing out only the unimportant stuff: "they don't care"; "just give me a lobotomy," Jerry said, and at the same time he was shrugging and saying "I don't care... I just won't remember what happened last week" [fieldnotes: 01 May 1996].

The advantage of having their own stash of Just-in-Case information was that they did not have to ask for information when they needed it. The CI analysts felt that they had to hide their interest in certain information and events, because asking questions might give away more about US Company's intentions and plans than the resulting information was worth. Questions contained information and needed to be used strategically. Furthermore, asking questions opened the door to the respondent demanding, "why do you want to know?" a retort of which the CI analysts availed themselves.



#### 4.3. “Why do you want to know” questioning

The CI analysts’ protection of their “intelligence” manifested itself not only in their reluctance to throw away any of their paper, but also in challenging requestors to justify their inquiry. The CI analysts refused to answer “tell me everything you know” questions.

- Jerry was annoyed with Pete because Pete came to him saying “tell me everything you know about Division A competitors”; Jerry sat back and asked him “why”; Pete responded that they were facilitating the strategic marketing planning process and therefore needed to know something about competitors in that process; Jerry asked him what Pete understood by “facilitation”...;
- essentially, Jerry wanted to get to the point where he could tell Pete that he saw no reason to give him all this information; the Division A folks should get their information from Jerry and Jerry was talking to the leader almost daily giving him information; Jerry saw no reason to give “**my** information” to Pete so that he “can remember half of it” and give it to the Division A people [fieldnotes: 18 March 1996].

Anybody who requested information from the CI analysts had to be prepared to justify why they wanted certain information. The question the CI analysts would ask was: “why do you want to know?” This aggressive-sounding question can partly be understood in light of their mission to provide information that added value and that made a difference to the organization’s performance. Information had its costs and the “why do you want to know” question is one way of determining its anticipated benefits. Furthermore, the CI analysts did not want to satisfy a customer’s idle curiosity, nor did they want to encourage dysfunctional informing practices such as wanting to know just because others did.

one of the problems is “that people have to know because others know it”, they need information “to look smart” and “this breeds all kinds of stuff”; [Ned] told me the story of a German manager that he used to do analyses for; as soon as the guy got the numbers he would get on the phone and “bark” at the people who were responsible for the numbers; Ned thought this was “counter productive” because all it meant that everybody “needs to get the same information” which means a duplication of effort on their part and they have too much information at any rate [interview with Ned: 09 November 1995].

However, asking “why do you want to know?” also served as a strategy for collecting information. By getting an information requestor to talk about the context in which the information request had arisen, the CI analysts stayed in touch with what was going on in other areas of the organization.

Having described the gatekeeping practices of the CI analysts as a constellation of three inter-related activities, namely “Just-in-Time” informing, “Just-in-Case” accumulation and “why do you want to know” questioning, we now assess the degree to which these practices matched the practices embedded in KnowMor, so as to explore the benefits the CI analysts saw in this knowledge management technology.

## 5. The attraction of KnowMor

Jerry promoted KnowMor by pointing to the defects in their current “gatekeeping” system. These included the amount of time it took to search and source information, the difficulty of alerting everyone who needed to know about the information, and the difficulty of managing discussions about events with electronic mail.

- [Jerry] said that KnowMor would solve three issues:
  - it would get rid of proactive searching mode
  - you would not need to know who needs to know; people would “self-select” the topics they are interested in
  - people would be able to make easy commentary and all the information would be saved in one place [fieldnotes: 08 February 1996].

In his fervor of promoting KnowMor, Jerry essentially admitted to not always knowing “who needed to know.” Since omitting someone from an information distribution list could be construed as intentional “blindsiding,” an accusation that threatened to undermine the CI analysts’ position as ‘objective internal consultants’ whose interpretations of events and recommendations could be trusted, the CI analysts welcomed a technological solution to this problem.

- so then Jerry launched into his description of how he currently does his work of going into Dow Jones, downloading text, uploading it into cc:mail and then adding value, then sending it, then re-sending it to people that he has forgotten;
- he then got into a story about an article about G-industries building a plant in Poland with the help of one of US Co’s competitors; Jerry had written a comment to it and distributed it; this “elicited a comment by [the CEO]” who then forwarded it to the VP of Europe who then gave his point of view [fieldnotes: 20 November 1995].

The subtext underlying this incident was that Jerry had forgotten to add the VP of Europe to his list of recipients. This implied that the VP had been caught off guard by the CEO’s prompting for a comment from him about this development in Eastern Europe. At best, such a situation was cause for embarrassment. Had the VP had access to KnowMor (and assuming KnowMor had been operational), Jerry’s message would have magically found its way to him and he would have been able to present himself as more knowledgeable of current events. Furthermore, KnowMor would also have protected Jerry from any accusation about his competence in identifying who needed to be informed and the insinuation that his actions were a strategic, political move. KnowMor thus promised to relieve Jerry of his responsibility to select the people who needed to know, wanted to know and ought to know.

Based on a view of the CI analysts’ work practices that does not take the circuit of reproduction (i.e. ‘what doing it does’) into account, it appears that KnowMor fit their work practices well and that it represented a solution that solved the CI analysts’ problems. In the ensuing discussion we will show how the other elements of Bourdieu’s Theory of Practice, namely the CI analysts’ position in the field, their habitus and the logic of

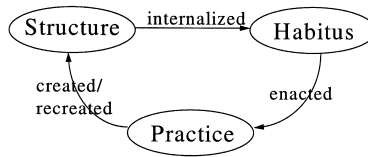


Fig. 1. Summary model of Bourdieu's Theory of Practice (Harker, 1990).

reproduction, highlight the incongruence between the situated gatekeeping practices and the generalized, espoused gatekeeping practices embedded in KnowMor.

## 6. Discussion: understanding practice through Bourdieu's Theory of Practice<sup>7</sup>

The key concepts in Bourdieu's Theory of Practice include field, habitus and practice. Bourdieu uses the concept of field (as in, a battlefield or a field of forces) to theorize society as a space of relative social positions (Bourdieu, 1998). In a field, actors struggle to maintain or improve their positions vis-à-vis other players. This is accomplished through the accumulation of different forms of capital. These include economic, cultural and symbolic capital (Swartz, 1997). Multiple fields or spheres of play define the objectified social structures that characterize a society.

Habitus refers to the orientation of actors in a field. It denotes the perceptual and evaluative schemata and the dispositions for acting that are internalized in people's minds and bodies. Habitus acts as a symbolic template for an agent's conduct, thoughts, feelings and judgments. "To speak of habitus is to assert that the individual, and even the personal, the subjective, is social, collective. Habitus is socialized subjectivity" (Bourdieu and Wacquant, 1992, p. 126).

For Bourdieu, field and habitus are reciprocally constitutive — each shapes and is shaped by the other. The interaction of habitus and field are manifest in an actor's practices, that is, their repeated and patterned behaviors. Bourdieu takes care to emphasize the relational, generative quality of his theory, in which practices that emerge from the interaction of habitus and field in a given concrete situation tend to reproduce the field. Although he emphasizes their mutual constitution and argues against a causal reading of the way field, habitus and practices interact (Bourdieu and Wacquant, 1992), Bourdieu often describes his theory as having a dominant circular path. In this causal loop of generation and reproduction, actors internalize the structure of a field as habitus (see Fig. 1). Habitus, in turn, generates practices, and practices serve to reproduce the structure of the field. It is this circuit of reproduction that we are proposing as a preferred theoretical lens for understanding work practices (and especially knowledge work practices) and for anticipating the effects of information technology in a work situation.

<sup>7</sup> Among the reasons why Bourdieu's theory is applied in this research are: (1) the fact that it provides a framework specifically for studying practices, a concept that this paper set out to explain for IS researchers and practitioners; (2) the fact that Bourdieu developed his theory based on his own ethnographic fieldwork, which gives this theory the kind of interpretive flexibility needed for the analysis of ethnographic data; and (3) Bourdieu's advocacy of reflexivity in research fit well with the field researcher's data gathering methods.

Practices are the recognizable patterned actions in which both individuals and groups engage. They are not a mechanical reaction to rules, norms or models, but a strategic, yet regulated improvisation responding to the dialectical relationship between a specific situation in a field and habitus (Bourdieu, 1973, p. 67). These improvisational actions are generated by dynamically combining past experience, the present situation, and the implicit anticipation of the future consequences of these very actions. Being determined by past conditions through habitus, they tend to reproduce the regularities and objective structures of which they are the product (Bourdieu, 1973, p. 64). It is through these circuits of reproduction that the field's objective relations are produced and reproduced in ways that both reinforce and change the field's objective structure, such as its class distinctions and schemes of classification. A study of practices can illuminate the actors' information needs only if we assume the circuits of reproduction will remain stable. Considering the way a technology will affect the dynamics of field and habitus enables us to explore how technology might disturb those practices and information needs.

Drawing on Bourdieu's Theory of Practice, we will now revisit the CI analysts' gate-keeping practices by taking into account their position in the field and their internalized habitus.

## 7. The CI analysts' position in the field

Transforming US Company to a knowledge-intensive firm was based on a new way of structuring the field of knowledge work, which included the development of a new vocabulary for classifying work into "value adding" and "commodity". Individuals and groups that failed to "add value" had no place in the organization. Their work was "commodity" and needed to be outsourced.

The competitive intelligence analysts regarded themselves as "value adding" and "true knowledge workers." Value adding work was seen as having strategic value and as being more closely associated with the organization's emerging identity as a knowledge-intensive, learning organization. It could not be outsourced because it required too much organization-specific knowledge. The struggle for position in the field of US Company centered on accumulating and being associated with the symbolic capital of "value adding" knowledge.

Given the symbolic meaning of the "value adding" label in US Company and the futility of attempts to assess the financial impacts of a piece of information, it was impossible to establish whether the CI analysts were indeed adding value. The fact that there were no plans to outsource this group suggests that others too considered them value adding. At the same time, the CI analysts complained that decision-makers were not using the information they provided. This suggests a paradox: despite the fact that the information and analyses they produced could not consistently influence the organization's performance because of decision makers' failure to use it, the competitive intelligence analysts still considered themselves value adders. This highlights just how symbolic the use of the "value adding" label was.

In their effort to present themselves as "value adding" workers, the members of the Business Research group endeavored to proceduralize their work, automate it, and

outsource as much of the “commodity” portion of their work as possible. For instance, they sought to develop relationships with market research firms that would collect and format market data that the analysts could then adapt to their customers’ specific needs by adding their own analysis and set of recommendations.

Employing more technology promised to further free them of “commodity” work by increasing their efficiency and therefore allowing them to engage in “value adding” activities. For the CI analysts, information technology was a means to an end, and that end was “intelligence.” Even though the technology changed the speed of information delivery and its form of presentation, the information content and what the CI analysts deemed relevant did not. The information that the CI analysts relied on had been available previously. The document and knowledge management technologies merely repackaged that information for easier use.

Despite the rather marginal benefits that technology offered the CI analysts, the analysts did look to technology to rid themselves of non-value adding work such as proactively looking for on-line information, retyping and reformatting it. They anticipated that this would allow them to spend more time engaged in analysis, which was the kind of “value adding” work that differentiated them from “commodity” workers and that helped them maintain their status as “true knowledge workers.”

Another way in which the CI analyst wanted to ensure their place among the “value adding” and “true knowledge workers,” was to avoid any association with information and informing practices that were perceived as “less than strategic.”

- Jerry told me that he had been working with Simon from Division A Planning in the last couple of weeks; Simon was into producing “books” about competitors; he showed me the one on [their main competitor], a 120 page wad of paper held together by a giant clamp... it was still unbound and there were lots of handwritten changes made on the pages; Jerry said that Simon wanted to “dump this book in [the CEO’s] lap” to show him how much they knew about competitors; Jerry had told Simon, that if he was really going to do that, i.e. give the book to [the CEO], “I don’t want my name anywhere on here”
- he explained that due to Simon’s style of putting planning presentations together which consisted of presenting loads of data “and then some”, the president of Division A was perceived “as being less than strategic” [fieldnotes: 29 April 1996].

The CI analysts referred to themselves as “strategic advisors,” a job description that was based, in part, on their daily contact with the decision-makers, especially the senior managers in the business units they served, and in part, on their ability to preempt questions. Instead of waiting to answer questions posed by their customers, the CI analysts saw their gatekeeping role as actively guiding strategic thinking among the VPs of US Company’s various divisions. Preempting questions was one way in which the CI analysts distinguished themselves from other information brokers in the organization, for instance the corporate librarians.

I said that I saw the librarians spending a lot of time finding the most cost effective sources and editing the information they find; Jerry said that as a customer “they have

never done anything more for me than give me the information that I asked them for”; he felt that this hardly amounted to adding value [fieldnotes: 14 May 1996].

In summary: the CI analysts’ knowledge of what was significant to US Company and who needed to know about events that were deemed significant, constituted their value-adding proposition and the way in which they sought to distinguish themselves in the field of knowledge work.

## 8. The CI analysts’ habitus

Jerry frequently referred to himself as a “gatekeeper.” On the outside of his and Dave’s offices hung a black and white cartoon defining this role. The cartoon depicted a sentinel in medieval armor on a turret overlooking the city gates. It is night. The sentinel sees a truck, marked “ACME Gate Smashers” trying to enter the city gates and he wonders (bubble over his head) “I wonder who should know this.” The salient features of this cartoon that resonated with the aspects of the CI analysts’ work included the sentinel’s watchfulness, his assessment of the gate-smashers’ attempt to enter the city as a significant event, and his questioning about who needed to be alerted about this.

As strategic advisors the CI analysts were continuously scanning the external business environment for news that decision-makers in the company “needed to know.” They prided themselves in their business knowledge relevant to the organization and about the effective use of this information. They thus claimed to know what constituted “the right person,” “the right information,” “the right format” and the “right time.” They established these by asking three questions: “who needs to know?”, “who wants to know?” and “who should know?”

They contrasted their logic of selective and situation-specific information dissemination, which they characterized as “training the gun” and “targeting” the information, with the “shotgun approach” and the ‘blasting and splattering of information’ that they believed the corporate librarians to engaged in.

- I explained to Jerry that [the newsfeed delivery system that the corporate library, i.e. the Knowledge Resource Center, was sponsoring] allowed you to forward incoming messages to people’s electronic mail boxes directly if they were not on KnowMor and therefore you would get maximal usage out of the information you pay for
- Jerry said bluntly “Yes, but I don’t want that”, i.e. that people get information via mail; he gave the following reasons: people are going to get too much stuff and then they are going to tune out and not use any of the information any more
- he said that Norma [the leader of the Knowledge Resource Center] “uses a shotgun approach to information delivery”, “she splatters information” all over; this is what she always does — he cited the example that “Norma gave Dow Jones to a bunch of people that had no business searching it”
- I suggested that it was the role of the library to make as much information available as possible; he retorted that [the corporate library] was now called the Knowledge Resource Center

- he talked about the need for an “information czar”
- he felt that Norma’s approach to information was “information to the common man”... to which I remarked “that was a rather czarist statement”
- Jerry: “more data is not going to make us smarter” [fieldnotes: 21 November 1995].

By claiming to know what the “right information” and who the “right person” was, the CI analysts attributed to themselves a certain degree of omniscience. Their belief in their superior knowledge of effective organizational informing practices was evident in their claims that the CI analysts ought to be recognized as the “information czars” who “owned” the entire knowledge management process.

Despite their interest to use information technology to make access to information more convenient, the CI analysts were opposed to the democratization of access to information. They believed that information, which they regarded as intelligence, should be restricted to a privileged group of people. As legitimate gatekeepers, they saw it as their responsibility to maintain these information privileges and to control the dissemination of information. The democratization of information thus ran counter to the logic of CI.

Ned told me about something he read on CI and there was a survey where one question “how widely do you disseminate this information” and in scoring the survey he said this question was scored negatively, implying that there were other people out there that agreed with his position that not all information should be accessible [fieldnotes: 21 March 1996].

The democratization of information access challenged the CI analysts’ privileged position as official information brokers. Open access to external information in particular eroded their ability to add value by being the first to bring information to senior managers’ attention. This implied that they needed to work harder on adding analysis, commentary and contextualizing interpretation to information so as to distinguish themselves from other information providers in the organization.

Jerry has been in a “battle to publish” with the public relations folks for a long time; he tries to get the information out there before the others, and if he does not manage to do that, he makes sure that he adds commentary (adds value) to the information which is then the reason why he did not get it out there first; he calls this his “little contest” with the leader from Marketing Communications [fieldnotes: 05 October 1995].

Furthermore, the Internet and newsfeed products made it legitimate for a wide range of people to inform themselves about US Company’s external environment. Keeping up with news about the market, US Company and its competitors fell more readily into the realm of canonical work as the medium changed from a printed newspaper, magazine or book to the computer screen. While reading the newspaper at work would have been acceptable behavior only for a privileged few, reading the same news on the screen was more widely accepted. As more people had access to information as well as time to read it at work, the strategic position of CI was being challenged.

Ned complained that US Co. was moving towards this model of open communication

where even the “lowest people in the organization” would have access to “high level information”... the idea was that CI was moving from the “strategic to the local tactical level” [fieldnotes: 7 March 1996].

As more people had the ability to monitor external information and more people considered it part of their job to stay informed of events outside of US Co, the CI analysts also had to deal with interference from people who had their own sense of what constituted “the right information” and “the right person” to inform.

- Ned came in to tell Jerry that Bob had copied a whole lot of people in Division B on S-Industries, a company that was going to merge with a company that was not yet disclosed; people in the B Division were coming to Ned all worried about what they knew about this company; Ned said he had to calm them all down and tell them that S-Industries was a small company and that it posed no threat at all; nevertheless he was upset with Bob for interfering by “blasting” this information to everyone; Ned said “give us some credit for doing our job”
- Ned turned to me and said “take him off your KnowMor list” [fieldnotes: 01 May 1996].

Bob, who had recently been transferred to B-Division from a “technology monitoring” position in US Company’s R&D facility, had forwarded a news alert about a merger in B-Industry to others that he believed needed to know. As a result Ned, the official expert on activities in the B-Industry, was inundated with questions about the identity the undisclosed party in the merger. Ned was annoyed with Bob’s interference, firstly because Ned had not been aware of the merger announcement prior to Bob’s message, secondly, because Ned did not think that the news warranted this much attention given the small size of S-Industries, and thirdly, because Bob’s actions carried the implicit accusation that Ned was not doing his job. Ned’s solution to this problem was to revoke Bob’s access to KnowMor.

In summary: *Habitus* is the set of predispositions that are the result of individuals’ or groups’ internalization of their position in the field. For the CI analysts, the *habitus* is an adjustment to and a reflection of their place as value adding workers in US Company’s field of knowledge work. The main features of the CI analysts’ disposition include their belief in their superiority as gatekeepers who had been “anointed” to determine “the right information” and “the right person.” Ascribing to themselves this superior knowledge underlined their perception of information as intelligence, access to which needed to be restricted to a privileged few. The CI analysts were thus opposed to the democratization of information, which was largely the result of the proliferation of information technology in US Company.

## 9. The reproduction circuit

The CI analysts’ practices of informing made possible the structural division between “value adding” and “commodity” work by highlighting the expertise and differentiated business knowledge that the CI analysts required to produce “Just-in-Time”, “actionable” intelligence out of vast amounts of inert, publicly available information. The sense of



urgency, ambiguity and market volatility that the analysts created through their practice of constantly monitoring the external environment, lent credence to the strategic and “value adding” status of their work. Also, their personal accumulation of unique knowledge and expertise that related specifically to US Company and its industry differentiated them from other knowledge workers in that it enabled them to preempt questions, guide inquiry and foster strategic thinking among the decision makers in US Company’s business units. Lastly, their “why do you want to know” questioning made them appear to have privileged access to a higher form of understanding about the organization. Thus their practices of informing reproduced the structure of the field of knowledge work and their position within it.

## 10. The contradictions of KnowMor

Having discussed practices in isolation as well as in the context of the remaining elements of Bourdieu’s Theory of Practice, i.e. field and habitus, we now explore the implications of considering practices within their circuit of reproduction. In our discussion above, some of the incongruence between the CI analysts’ situated practices and the generalized practices embedded in KnowMor became apparent. For instance, the CI analysts’ view of themselves as “anointed” gatekeepers was at odds with the democratization of information access and the open sharing of information that KnowMor facilitated.

Thus, an analysis that applies a theory of practice readily identifies such incongruence. However, the CI analysts themselves ultimately recognized the conflict between their situated practices and the generalized practices embedded in KnowMor. This became evident during a conversation with Jerry in June 1996, i.e. after the completion of the fieldwork. The fieldworker returned to HQ-City to report on two other companies’ experiences with KnowMor. When Jerry was told that both of these other companies were disappointed with their KnowMor implementations, he suggested a look through the assumptions around which the system was designed and the problems it promised to remedy. Among his literature about KnowMor he came across a list of problems that required a knowledge management (and therefore KnowMor) solution. The slide from a KnowMor presentation read:

### **“Value-add” solutions require Knowledge Management**

I know it may be there, but I don’t have time to look

I know it may be there, but I don’t know if it’s important enough to get it

I know it is there, but I don’t want to know unless it’s very important to me

I know this is important, but I don’t know who to tell.

In reading these problem statements critically, Jerry was particularly struck by the last one. Pointing at the sentinel in the turret depicted in the cartoon that was hanging on the outside of his office, Jerry remarked on what the sentinel was thinking, i.e. “I wonder who

should know about this” as he observed a group of people trying to crash through the city gates at night. Jerry said: “If he does not know who to tell, he should not be up there.”

During this conversation, Jerry expressed his awareness of the irony of KnowMor. KnowMor promised to relieve Jerry of his responsibility to select the people who needed to know, wanted to know and ought to know about important information and events. KnowMor also routed messages automatically based on individuals’ declaration of interest in certain topics. Thus the responsibility of staying informed fell squarely into the individual customer’s (or user’s) lap. With KnowMor, Jerry would not have to inform others; they would have to inform themselves.

Such a change in gatekeeping practices would have significant implications for the CI analysts’ position in the field because it undermined their “value-adding” proposition and their ability to differentiate themselves from other knowledge workers. One of the premises of the KnowMor system was that knowledge workers could inform others without having to know ‘who needs to know.’ This was at odds with the CI analysts’ claims of expertise and value adding role within US Company, namely knowing what constituted the “right information”, “the right time” and “the right person.”

Based on the incongruence between the CI analysts’ situated informing practices and the generalized practices embedded in KnowMor, we can argue that a successful implementation of KnowMor would most probably have resulted in such unintended consequences as challenges to the CI analysts’ privileged access to information and their selective intelligence dissemination practices. Furthermore, we propose that by paying attention to the mundane details of people’s everyday work lives and by applying a theory of practice that embraces the circuit of reproduction, both researchers and practitioners can identify and analyze critically the tacit and so taken-for-granted aspects of knowledge work. Once these are brought to light, the consequences of implementing new technologies such as knowledge management systems can be assessed with greater confidence.

## 11. Conclusions

We have argued for the importance of studying practice in its circuits of reproduction when designing technologies for strategic and complex activities such as knowledge work. Bourdieu’s Theory of Practice in which field, habitus and practice stand in a reciprocally generative relationship of production and reproduction is an especially helpful framework for understanding practice in its organizational context. In the case of US Company, the competitive intelligence analysts embraced the KnowMor system as an ideal technology to support their knowledge work. This was in part because of the way it appeared to meet their system requirements through a mimicry of their gatekeeping practices. They also supported its implementation because of a hope to free themselves from the “commodity” work of proactive, manual information searching and distributing to spend more time on the “value-adding” work of CI analysis.

As the KnowMor technology was being implemented the CI analysts became aware of how the system would undermine their ability to accumulate symbolic capital in the field of US Company. As they were freed from the “commodity” activities of search and distribution, they found themselves in a newly democratized world of information flows

in which their gatekeeping and information-producing role was increasingly challenged and contested. It was, in a sense, these very mundane practices as data collection and questioning questioners that produced and reproduced their value adding position in the field of US Company.

It is always possible that knowledge work technologies such as KnowMor could have been implemented differently and with greater success at US Company. The practices, field and habitus of CI analysts at US Company could have been reconstituted to enable KnowMor to serve not as mimicry of existing practices, but as a generative element in a new configuration of the circuits of reproduction. However, such a technology implementation would require a different kind of analysis of system requirements — one that looked not only at what the analysts do, but also at what their doing it does.

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