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Charmaine Barreto  
*Florida Atlantic University*

Robert Heckman  
*Syracuse University*

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# Understanding Knowledge Sharing Motivators within Knowledge Management Initiatives

**Charmaine Barreto**

Florida Atlantic University  
cbarreto@fau.edu

**Robert Heckman**

Syracuse University  
rheckman@syr.edu

## ABSTRACT

This study investigated the phenomenon of knowledge sharing (KS) within a knowledge management (KM) effort. The study sought to identify what motivates employees to participate in KS. The study investigated whether the antecedents of organizational citizenship behavior served as motivators for KS. It also employed research from the areas of impression management and knowledge sharing culture to help understand the sharer's motivations.

Methodologically, the study used a multi-site, case study approach. Data were elicited *via* self-administered questionnaires, and in-depth, semi-structured interviews at two large organizations. The study's findings show multiple motivators engaged respondents at both organizations to partake in KS. While the role of fundamental individual goals in the display and quality of formalized knowledge sharing was identified *via* the interviews, the role of social exchange and personal/organizational norms in the display of formalized knowledge sharing was identified *via* the surveys.

The study makes contributions to several existing theories. The study's findings also had several pragmatic implications for the sharers, developers and designers of KM initiatives, and managers and leaders.

## Keywords

Knowledge Sharing, Knowledge Management, Organizational Citizenship Behavior, Impression Management, Culture, Case Study, Theory of Reasoned Action

## INTRODUCTION

In an attempt to achieve a sustainable advantage that will set them apart from their competitors, organizations are adopting knowledge management (KM) practices (Nonaka & Takeuchi, 1995; Nahapiet & Ghoshal, 1998). KM is believed to enable the organization to methodically acquire, store, access, share, maintain, and reuse knowledge from different sources. One of the direct consequences of the KM effort has been an impetus toward knowledge sharing (KS) (Prusak, 2000; Alavi & Leidner, 2001). Consequently, this study sought to investigate this phenomenon of KS.

Organizations have adopted two main approaches when implementing KM (Apostolou & Mentzas, 2003). The process-centric approach views KM as a social communication process wherein knowledge is inextricably linked to the individual responsible for its development. In this approach, KS mostly occurs in a person-to-person manner and information technologies are mainly used as communications media *versus* repositories. In contrast, the product-centric approach views KM as mainly comprising the creation, storage and reuse of documents that may be stored in computer-based repositories. Regardless of the approach, it is clear that organizations that implement KM in a useful way must be open to the idea of information/knowledge sharing.

## RATIONALE FOR STUDY

Research shows that increased information sharing can lead to improved organizational efficiency, innovation, flexibility, and learning (Sproull & Kiesler, 1991). Despite an increased interest in KM and hence, KS, not enough empirical research has been conducted on KS, particularly from the viewpoint of the knowledge sharers. Process-centric KM efforts have focused on encouraging person-to-person social communication that may/may not be mediated by information technologies. However, many organizations have found it difficult to sustain such behaviors (O'Dell, 1996, 1998). One of the primary reasons for such KM failures may be attributed to a lack of understanding as to what motivates employees within an organization to share knowledge.

Furthermore, existing models of KM and hence, knowledge creation, KS, and knowledge reuse fail to incorporate the sharer in their conceptualizations. This may in fact be a gap in such models. One of the assumptions being made in models such as Nonaka's SECI model or Marquardt's (1996) four-stage KM model or O'Dell's six-stage model of KM is that KS occurs magically. Such models do not account for the role of individual employees in the process. Thus, there is a need for empirical

research to determine how and why employees share knowledge within a KM context. This need is further reinforced by many failed/sub optimal attempts to build systems and processes that supposedly enable KS without understanding when and why employees will share. By understanding sharers' motivators for partaking in KS behaviors, this study sought to demystify existing KM models to some extent.

There are many aspects of KS that merit further research. In this study, however, the purpose was to investigate the reasons why employees participate in KS. A review of the literature suggested that people using KM initiatives may share knowledge to display citizenship-like behaviors, to manage other's impressions of them, because they have a culture that is conducive to sharing, or because there are rewards or recognition attached to such behavior. Consequently, this study employed literature from these areas.

## THEORETICAL PERSPECTIVE

Organizations have found that it is imperative that there be active participation from people who are involved in the process of creating, sharing and utilizing knowledge. There is no doubt that KS contributes to the KM initiative. As such, this study delved into the area of KM to acquire an understanding of its current state and to identify concepts that would aid in an understanding of the concept and role of knowledge as perceived by knowledge sharers in the KM process<sup>1</sup> and an understanding of the distinction and pragmatism of formal vs. informal KM. Finally, the literature in KS was used to identify the various modes of knowledge sharing and the role of KS systems and processes in enabling such modes (Sveiby, 2001).

### Organizational Citizenship Behavior

This study also used research conducted in the organizational citizenship behavior (OCB) literature. Like OCB's, KS behaviors that are sought after within KM initiatives are often not specific components of the employee's job contract. Thus, KS behaviors may actually depict OCB's which are defined as "contributions to the maintenance and enhancement of the social and psychological context that supports task performance (Organ, 1997, p. 91)."

Several empirical studies have identified four types of antecedents of OCB's (Bolino, 1999; Organ, 1988, 1990, 1997; Organ & Ryan, 1995). These are individual characteristics, substitutes for leadership characteristics, organizational characteristics and leadership characteristics (Podsakoff et al., 2000). Given the similarity between OCB and KS, this study investigated whether the antecedents of OCB are also antecedents of KS. Based on the research on OCB antecedents, several antecedents were explored as potential antecedents of the knowledge sharing behavior (see Table 1).

### Impression Management

Recent OCB research has delved into another body of literature called Impression Management (IM) from the field of psychology. IM is mainly concerned with how people try to affect the images others have of them (Rosenfeld et al., 1995). IM includes behaviors that are self-serving or impression enhancing. Eastman (1994) and Bolino (1999) suggest that people may display helpful behaviors because they want to be perceived as likeable or because they want to manage other's impressions of them. Such behaviors are often misread as being OCB's. Since helpful KS behaviors could also be motivated by goals of impression enhancing, the authors pursued the IM literature in explaining the KS behavior (see Table 1). The impression management motives yielded by the literature are a *desire to maintain a positive image* and *to avoid creating a negative image*.

### Knowledge Sharing Culture

This study employed some of the variables identified in the KS culture area. Leidner (1998) and Gruber (2000) suggest that norms and practices within a department play a role in KS behaviors. Brown and Starkey (1994) suggest that organizational culture has an effect on people's attitudes towards sharing information. Through a case study, they conclude that the manner in which the phenomena of communication and various aspects of information unfold are actually manifestations of deep beliefs/values/attitudes. As such, it is important to understand the influence of the organizational culture on KS.

The most dominant view of culture is one elucidated by Schein (1996), who views organizational culture as "the set of shared, taken-for-granted implicit assumptions that a group holds and that determines how it perceives, thinks about and reacts to its various environments (p.234)." According to Schein (1996), culture can be analyzed at three different levels: artifacts, espoused values, and basic underlying assumptions.

Of particular interest to this study was the level of espoused values, which includes the set of derived beliefs/norms/values and moral/ethical rules that remains conscious within an individual and that can be explicitly articulated. These espoused

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<sup>1</sup> For instance, through a survey of existing literature, Alavi and Leidner (2001) indicate that in their implementations of KM, organizations have viewed knowledge as either being a qualification, process, object or state of mind.

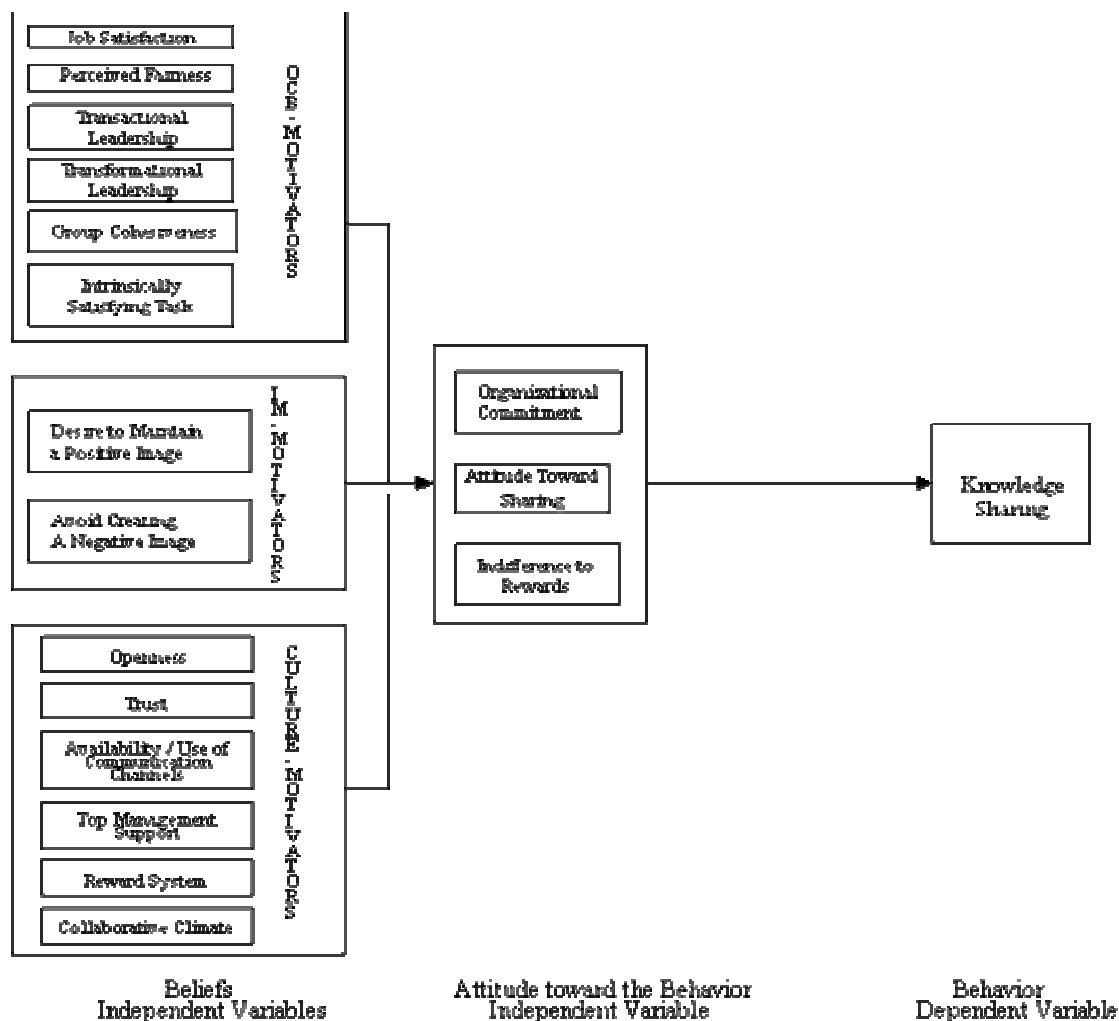
values serve to guide group and organization members in dealing with situations and exhibiting specific behaviors and decisions. By investigating people's beliefs/norms/values towards KS, this study focused at this level of culture.

A review of the pertinent literature suggested that the knowledge-sharing culture can be consistently attributed to the following beliefs/norms/values. These are openness, trust, availability and use of different communication channels, top management support of the sharing of knowledge, collaborative climate, and the reward system in the organization (Gruber, 2000; Hamel, 1991; Bachmann, 1998; Aldrich, 1979; Anderson & Narus, 1990; Bradach & Eccles, 1989; Von Krogh, 1998; Earl & Scott, 1999; Sveiby, 1996).

### Overarching Framework using the Theory of Reasoned Action

Together, the three areas provide a possible framework for data collection and analysis. This list of variables is by no means exhaustive. Rather, this study attempted to explain a portion of the variance in the knowledge sharing behavior. Furthermore, rather than using common sense or intuition to juxtapose the various variables, this study used the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980), to provide a framework with which to study the impact of the various belief and attitude variables on KS.

For the sake of simplicity, the framework only depicts unidirectional and bi-variate relationships. This is in spite of the fact that the literature clearly shows some instances where the antecedents correlate with each other and other instances where the antecedents appear to be the consequences of the behavior (OCB in this case). Including all the possible relationships would have rendered the framework much too complicated to be useful or to be realistically studied. Furthermore, TRA also includes a subjective norms component which can be viewed as the person's perception of the social (or normative) pressure exerted upon him or her to perform the behavior. Since impression management addresses this issue, specific variables that address subjective norms were not included in this study.



**Figure 1: Framework for Antecedents of Knowledge Sharing Behaviors using the Theory of Reasoned Action****METHODOLOGY**

This study used a multi-case study approach. Yin (1984) defines the case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used (p. 23).” The case study method is a preferred strategy in the social sciences when “how” or “why/what” questions are being investigated. Further, the case study method is appropriate when the phenomenon under investigation is not easily separated from its context (Yin, 1984). This study sought to investigate KS at the workplace. This behavior is not understood very well. We know that it occurs, but we are not sure why it occurs. Context plays a strong role in whether people choose to share knowledge or not. It also plays a role in how people choose to share knowledge and what they perceive the benefits/problems of KS to be. Hence, it was deemed necessary to study the phenomenon in-depth, and in as naturalistic a setting as was possible.

**Research Design**

Specifically, data were collected at two geographically dispersed, large organizations (hereafter referred to as Germanium and Hippocrates). In keeping with the case study approach of triangulation, this study used concurrent, complementary modes of data collection. Employees’ perceived motivators for KS were concurrently elicited *via* face-to-face/telephone interviews and self-administered, close-ended surveys. While the survey was restricted to ascertaining if antecedents of OCB and IM, and aspects of culture served to be significant motivators of KS<sup>2</sup>, the open-ended interviews were used to identify other possible motivators of KS, thereby attempting a more holistic view of the KS behavior. Documentation from the data sites was also reviewed to determine the firms’ mission, organization, culture, and KM practices. Conducting the Germanium case study first helped improve data collection efforts at the second case site.

**Questionnaire Design**

The questionnaire was developed using existing, psychometrically-tested scales that measure traditional OCB antecedents, IM motives, knowledge sharing culture dimensions, and attitude toward KS. The only new scale developed and tested (in three iterations) was the KS scale. Table 1 provides a list of all variables used, their definitions and a point of reference for the scale utilized.

Variable	Definition	Description of Measure
Job Satisfaction	Refers to the feelings an employee has about his job (Smith et al., 1969).	Three-point scale with a total of 15 items (AJDI, (Stanton et al., 2002a) (Yes/No/Don’t Know)
Perceived Fairness	Perceived Fairness is operationalized as distributive and interactional justice. Distributive justice refers to the fairness of the outcomes an employee receives Interactional justice taps into the fairness of the interactions that enacted the organization’s formal procedures (Niehoff & Moorman, 1993).	Two seven-point scales with 5 items on distributive justice (Price & Mueller, 1986) and 6 items on interactional justice (Moorman, 1991) (Agree/Disagree)
Organizational Commitment	Refers to an individual’s affective attachment to an organization (Allen and Meyer 1990).	Seven-point scale with 8 items (Allen & Myer, 1990) (Agree/Disagree)
Leadership Behavior	Refers to transformational and transactional leadership. Transformational leadership refers to behaviors by leaders that motivate their followers to transform their motives, beliefs, values and capabilities so that the follower’s own interests and personal goals match the vision for their organization (Podsakoff et al., 1996). Transactional leadership motivates followers through rewards and discipline (Bass, 1985).	Two seven-point scales with 16 items on transformational leadership (Podsakoff et al., 1996) and 5 items on transactional leadership (Podsakoff et al., 1984) (Agree/Disagree).
Group Cohesiveness	Refers to the how closely knit and cohesive work groups are within the organization.	Seven-point scale with 6 items (Podsakoff et al., 1993b) (Agree/Disagree)

<sup>2</sup> In the interest of enhancing response rates and not engaging in dust bowl empiricism, a decision had to be made to restrict the number of variables operationalized in the survey. Further, the study was designed so that the interviews could identify most of the other, significant motivators of KS not identified in the survey.

Variable	Definition	Description of Measure
Indifference to Rewards	This is part of leadership substitutes, where leadership substitutes refer to “a person or thing acting or used in place of another ...{that}... renders relationships and/or task-oriented leadership not only impossible, but unnecessary (Kerr & Jermier, 1978, p. 395). Indifference to rewards refers to the inherent disposition of an employee toward rewards (Podsakoff et al., 1993).	Seven-point scale with 6 items (Podsakoff et al., 1993b) (Agree/Disagree)
Intrinsically Satisfying Task	This is also part of leadership substitutes and refers to that characteristic of a task that provides intrinsic value to the employee (Podsakoff et al., 1993).	Seven-point scale with 5 items (Podsakoff et al., 1993b) (Agree/Disagree)
Desire to maintain a positive image	Refers to an employee's intention to get something from others (Rioux & Penner, 2001).	Six-point scale with 5 items (Rioux & Penner, 2001) (Unimportant/Important)
Avoid creating a negative image	Refers to an employee's intention to avoid negative evaluations (Rioux & Penner, 2001).	Six point scale with 5 items (Rioux & Penner, 2001) (Unimportant/Important)
Trust	The expectation shared between employees that they will meet their commitments, stated or implied, to each other.	Seven-point scale with 3 items for trust in peers (McAllister, 1995) (Agree/Disagree)
Openness	The willingness to communicate and interact with colleagues in an organization (Strata, 1989).	Seven-point scale with 5 items (O'Reilly & Roberts, 1976) (Agree/Disagree)
Availability and Use of Communication Channel	The extent to which choices in communication channels are available and the extent to which they are used (Gruber, 2000)	Two four-point scales -- One with 12 items for communication channels (Never/Always) and the other with 10 items)
Top Management Support	Top management support reflects the extent to which respondents perceive support from upper management (Gruber, 2000).	Four-point scale with 5 items (Never/Always)
Reward Structure	Rewards are typically expressed across two major dichotomies: Intrinsic and extrinsic rewards (Herzberg, 1959). Intrinsic rewards comprise the good feelings employees derive from the work itself. Extrinsic rewards refer to visible rewards (Beer, 1981).	Intrinsic rewards are addressed through <i>intrinsically satisfying task</i> above, and extrinsic rewards are addressed through <i>indifference to rewards</i>
Collaborative Climate	Refers to general leadership and coworker behaviors that contribute to a collaborative climate.	Five-point scale with 5 items (Sveiby, 1996) (Agree/Disagree)
Sharer's Attitude to Knowledge Sharing	Refers to respondent's attitude toward the behavior of knowledge sharing.	Five-point scale with 5 items (Sveiby, 1996) (Agree/Disagree)
Knowledge Sharing	Refers to the interactive people-to-people (mediated or not) dissemination of knowledge between and among individuals and groups (Davenport, 1998).	Developed five-point scale with 12 items on knowledge sharing behavior (Agree/Disagree).

Table 1. Construct and Variable Definitions and Location of Construct/Variable on Questionnaire

### Interview Design

KS was also operationalized using semi-structured, open-ended interviews that were composed of questions which attempted to elicit from the interviewee a specific formalized KS experience in terms of the behaviors and values s/he deemed to be manifestations and explanations of motivators. The critical incident technique (Flanagan, 1954) was used to situate the interviewee in a KS experience he/she had that stood out in his/her mind as being very good/very bad. While situated in a positive/negative sharing incident, the respondent was asked to describe why he/she partook in the KS.

The data collection effort at Germanium returned 151 usable surveys indicating a response rate of 31%. Furthermore, 22 respondents were interviewed. At Hippocrates, the data collection effort returned a total of 171 usable surveys and 31 respondents were interviewed. It is difficult to establish a precise response rate. It was estimated by the key informant that approximately 700 employees had been targeted *via* the Intranet broadcast call for survey participation, which would imply an approximate response rate of 24%.

## Data Analysis

Exploratory Factor Analysis was employed to determine the dimensionality of the KS construct. The solution reflected a single dimension KS construct. The survey data were also analyzed using multiple regression.

Conceptually, the interview data analysis was inspired by the viewpoints delineated by Miles and Huberman (1994). They view qualitative data analysis as comprising three simultaneous activities, which are: data reduction, data display and conclusion drawing/verification. There is a substantial overlap across the three activities.

Further, in order to check the reliability of the data analysis, the authors conducted two types of reliability checks. The first reliability check determined if others would code a KS incident using the same codes employed by the authors. Using the percentage agreement index (PAI) (Miles & Huberman, 1994), an inter-judge reliability measure was determined to ascertain how closely the judges' codes matched those of the authors. The PAI is defined as the proportion of the number of classification decisions (i.e., a decision consists of coding an utterance as a given code) that were in agreement compared to the total number of decisions<sup>3</sup> made. The PAI were 89% and 91% respectively. A second reliability check was conducted on the robustness of the motivator classification scheme. A judge was presented with a list that included all the motivator codes mined from the interviews. The judge was then provided with some training and asked to cluster the codes into higher order meta-categories. This clustering effort yielded a PAI of 87%.

## FINDINGS

### Germanium Analysis

The Germanium survey analyses yielded four antecedents of KS ( $R^2 = 0.24$ ). Using the TRA as a guide for hierarchical regression, belief variables were first entered into the regression equation and this explained about 16% of the variance in KS. After the attitude variables (*organizational commitment*, *attitude to knowledge sharing* and *indifference to rewards*) were also entered, the model explained 24% of the variance in KS ( $F_{13, 126} = 4.298$ ,  $p < .0005$ , Standard Error = .585, Adjusted R square = .236).

The motivators of KS were sharers' perceptions of their *attitude to knowledge sharing*, *organizational commitment*, their beliefs about *satisfaction with their job*, and their beliefs about whether their *coworkers are trustworthy* or not. Of these, *attitude to knowledge sharing* was the best predictor. Due to a suppression effect<sup>4</sup>, *trust* had an inverse, counter-hypothesized effect on formalized KS. The regression analysis suggests that respondents were more motivated to partake in KS when trust between coworkers decreased. This is a contra-hypothesized effect in that common sense and much research (e.g., Sveiby and Simons, 2002) indicate that trust among peers should positively influence KS. Since a suppression effect masked the true effect of trust on KS, much credence cannot be given to this observation. Thus at Germanium, the antecedents of KS appears to be a combination of employees' positive attitude to KS, feelings about the organization and their jobs.

### Hippocrates Analysis

The Hippocrates survey analyses yielded six antecedents of KS ( $R^2 = 0.29$ ). The first model (using the belief variables) explained about 19% of the variance in KS. After the attitude variables were added, the model explained 29% of the variance in KS ( $F_{15, 152} = 5.528$ ,  $p < .0005$ , Standard Error = .60, Adjusted R square = .29).

The motivators of KS were sharer's perceptions of their *attitude to knowledge sharing*, *organizational commitment* and *indifference to rewards*, and their beliefs about whether they are *satisfied with their leaders*, perceptions of *leadership behavior*, and the importance of *impression management*. Of these, *transactional leadership* was the best (albeit inverse) predictor. Again, the inverse relationship between *transactional leadership* and *formalized knowledge sharing* is attributed to a suppression effect. *Indifference to rewards* also had an inverse effect on formalized KS, which was expected. Thus at Hippocrates, the antecedents of KS appears to be a combination of positive attitude to KS, feelings about the organization and their job. This is identical to the Germanium case.

<sup>3</sup> Only decisions that led to an utterance being tagged as a specific motivator (e.g., social skills development) or a specific effect (e.g., Articulation/Dialogue Results in Learning) were considered. None of the decisions about coding incidental information was included in this total

<sup>4</sup> According to Cohen and Cohen (1984), "the term suppression can be understood to indicate that the relationship between the independent variables is hiding or suppressing their real relationship with the dependent variable, which would be larger or possibly of opposite sign were they not correlated (p. 95).

### Cross Case Analysis

The two cases differ in that employees at Hippocrates were also motivated to share when they were satisfied with their leaders and these leaders did not have a transactional leadership behavior (i.e., contingent rewards systems). A respondent at Hippocrates indicated that she and her colleagues appreciate positive reinforcement rewards but not contingent rewards. To her, the former is indicative of respect for and appreciation of her work while the latter is disrespectful and tantamount to treating her like a child. Furthermore, employees share more when they are not indifferent to rewards and when they can use the sharing behavior to manage others' impressions of them. See Table 2 for a comparison of the motivators of KS between the two cases.

Predictor Variable	Germanium Beta	Hippocrates Beta	P(Germanium, Hippocrates)
1. Norms/Beliefs about Sharing Culture (Trust)	-.30	-	.002
2. Job Satisfaction (Work at Present Job)	.25	-	.03
3. Attitude to Knowledge Sharing	.31	.31	.002; .001
4. Organizational Commitment	.22	.22	.04; .025
5. Leadership Behavior (Transactional Leadership)	-	-.45	.000
6. Job Satisfaction (Supervision)	-	.33	.003
7. Substitute for Leadership (Indifference to Rewards)	-	-.26	.009
8. Impression Management	-	.20	.007

**Table 2: Significant betas from multiple regression equations of formalized KS at Germanium and Hippocrates**

Employees at both organizations share when they have positive attitudes to KS, positive feelings of their organization and satisfaction with their jobs. However, they differ in that employees at Germanium appear to be more intrinsically motivated whereas employees at Hippocrates are more extrinsically driven.

The interview data, on the other hand yielded mostly similar results for both cases. Employees often perceived aspects of KS to be an integral part of their jobs. Both cases strongly suggest that employees are motivated to partake in KS because they mostly anticipate extrinsic and intrinsic rewards for themselves. In both cases, employees indicated that they shared in KM settings because it would get their job tasks done (in-role tasks), make their jobs easier, and lead to some form of valued visibility for themselves. Employees also indicated that self-improvement – affective or cognitive – played a role in motivating their KS. Finally, employees were also motivated to share when they perceived overall benefits for the company.

Both cases also pointed to the role of sharers' perceptions of norms within the company and their own personal beliefs/attitudes on their KS behavior. While the frequencies were low (eight out of 22 respondents at Germanium and seven out of 31 respondents at Hippocrates), this category of motivators effectively ties together the survey and interview findings about motivators of KS. The survey questionnaire tapped into the role of organizational and personal norms, beliefs and attitudes on KS. In identifying personal and cultural, norms and attitudes as motivators of their KS, respondents alluded to the importance of values and norms in promoting/discouraging KS. The fact that the occurrences of this category were not very high is befitting. The normative model utilized in the surveys explained an average of 30% of the variance in the KS variable. A large portion of the variance in KS remains unaccounted for by this normative model. It is the author's belief that some of this unaccounted variance is explained by the findings inductively derived from the interviews.

The interview analyses rendered the following motivators of KS across both organizations.



Category	Germanium (% of Respondents, n = 22)	Hippocrates (% of Respondents, n = 31)
<b>Interview Analysis of Motivators of Formalized Knowledge Sharing</b>		
<b><u>Intrinsic Rewards for Sharer</u></b>	<b>64%</b>	<b>68%</b>
Self Improvement – Affective	41%	52%
Self-Improvement – Learning	23%	42%
<b><u>Extrinsic Rewards for Sharer</u></b>	<b>100%</b>	<b>84%</b>
Perceived Rewards for the Sharer	91%	74%
In-role Task	45%	45%
Recognition, Reputation and Respect	36%	23%
Makes Job Easier	32%	35%
Perceived Rewards for the Recipient	41%	29%
Perceived Rewards for the Company/Organization/Work Group	59%	58%
Overall Company Benefits from it	32%	23%
Enhance Process/Product/Tool	27%	19%
Customer Satisfaction	0%	29%
<b><u>Dispositional</u></b>	<b>36%</b>	<b>32%</b>
<b><u>Norms/Attitudes/Beliefs about Knowledge Sharing</u></b>	<b>41%</b>	<b>23%</b>

**Table 3: Summary of Interview Derived Motivators of Formalized KS across Both Case Study Sites**

Thus, some of the major findings of this study are as follows:

- Respondents engage in formalized and informal KS sessions and their categorization of formalized KS is often contrary to perceptions espoused in the literature.
- Respondents typically do not perceive a KS incident as one bounded session. Rather, it comprises a series of KS sessions that cumulatively comprise a bigger project.
- Multiple motivators engage respondents at both organizations to participate in KS. While the role of fundamental individual goals in the display and quality of KS was identified *via* the interviews, the role of social exchange and personal/organizational norms in the display of KS was identified *via* the surveys.
- Extrinsic rewards (tangible) for the sharer emerged as the most prevalent motivator followed by intrinsic rewards (affective/cognitive/social) for the sharer. Employees indicated that they mostly share in formalized settings because they expect that it would get their job tasks done (in-role tasks), make their jobs easier and lead to some form of valued visibility for themselves. Employees also indicated that self-improvement - affective or cognitive - played a role in motivating them to partake in formalized KS.

## DISCUSSION AND IMPLICATIONS

### Revisiting Knowledge Management

In keeping with contemporary research, in articulating their KS efforts within the interviews, respondents varied between treating knowledge as a qualification, process, object or a state of mind (Alavi & Leidner, 2001). The most prevalent view of sharers across both organizations was they viewed knowledge as a state of understanding gained through experience and reciprocal learning. This contradicts the formalized approaches to KS adopted by both organizations. Hippocrates and Germanium adopted KM initiatives where knowledge is viewed as an object. This is manifested by major deployment efforts toward developing and managing knowledge reservoirs with an emphasis on organized access and retrieval of content. In these initiatives, knowledge is also viewed as a process in that both organizations focus on knowledge flows and to some extent, the process of generating and disseminating knowledge. This incongruity between the apparent views held by the designers/champions of KM efforts *versus* the apparent views held by the sharers contradicts the views posited by Alavi and Leidner (2001).

Furthermore, it suggests that sharers found ways to adapt existing tools and processes to a form that was more amenable to the demands and rigor of their jobs and personalities. According to Leonard-Barton (1988), "mutual adaptation is the reinvention of the technology to conform to the work environment and the simultaneous adaptation of the organization to use the new technical system. (p. 254)" Thus, to derive benefits from the tools and processes deployed by the organization, its employees discern and implement some form of mutual adaptation.

### Revisiting Knowledge Sharing

Respondents across both organizations described incidents where knowledge exchange occurred *via* externalization/socialization between employees and knowledge internalization occurred within the sharers. Few to no incidents were described where knowledge was captured in repositories, or where knowledge re-uses occurred. However, embedded in most of the KS incidents described by sharers were undertones of being able to enhance their own or another's capacity to perform.

Using Sveiby (2001) at the literature review stage, the authors identified four possible knowledge-sharing scenarios that were expected to be salient to KS at the workplace. Both organizations showed an overwhelming occurrence of *knowledge transfers/conversions between individuals* as evidenced *via* initiatives such as training programs, forums, mentoring programs, and rotation programs at Germanium; forums, lessons learned presentations, mentoring programs, and training programs at Hippocrates. In their descriptions, sharers sometimes pointed to KS scenarios where *knowledge transfers/conversions occurred from individuals' competencies into internal structures* (e.g., manuals and software code at Germanium; repositories/manuals/emails at Hippocrates). Note also that the aforementioned examples in the previous category can and do embed aspects of this scenario.

While the key informants and pertinent organizational documentation indicated an emphasis on *knowledge transfers/conversions from internal structures to individual competencies*, respondents failed to identify this scenario in their descriptions. A few respondents at both organizations did mention that the tools/processes that they had created as a result of KS were being used to disseminate knowledge beyond the work group or department. However, it did not occur with enough regularity to warrant classifying this scenario as prevalent. It appears to be much more of an espoused scenario *versus* an actual outcome.

Finally, the last of the four scenarios refers to *knowledge transfers/conversions within internal structures* i.e., the effective integration of all the tool and processes and systems that enable KS. This type of KS was absent in respondents' accounts of their KS at Hippocrates or Germanium. This may be attributed to the fact that formalized deployment of KS efforts is relatively new and is still evolving at the two organizations.

The above discussion points to the incongruity between espoused benefits of KS tools and processes *versus* actual perceived benefits. While these organizations appear to have implemented tools and processes to enable capturing bodies of knowledge and information in reusable systems, employees have to have adapted such systems to enable more transfers/conversions between individuals. This supports Leonard-Barton's (1988) contention that both the employees and tools/processes must adapt to each other.

### Revisiting the Theory of Organizational Citizenship Behavior

This study was premised on the parallels drawn between OCBs and that of KS. Consequently, the study adopted most of the empirically established antecedents of OCB and proceeded to ascertain if these antecedents held within the sharing context. The results were lukewarm.

Only two of the four established *Attitudinal* OCB antecedents emerged as significant antecedents of KS in one or the other organization. These were *Job Satisfaction (Supervision; and Work at Present Job)*, and *Organizational Commitment*. Of these, only *Organizational Commitment* emerged as an antecedent in both organizations whereas two different facets of *Job Satisfaction* emerged as significant antecedents of KS. *Indifference to Rewards* (a *Substitute for Leadership* variable) emerged as a significant antecedent of KS only at Hippocrates.

While *Leadership (Transactional)* emerged as a significant antecedent, due to a suppression effect, it showed an anomalous pattern in that it had an inverse effect on formalized KS. Further, *Attitude to Knowledge Sharing* (not an OCB antecedent) emerged as a strong antecedent of formalized KS at both organizations.

Based on the findings, it is more likely that KS is different from the typical OCB. On the one hand, the social exchange theory aspect of OCB seems to hold in the KS setting. The significant antecedents do suggest that sharers partake in KS in order to create some type of social exchange. On the other hand, there is no clear-cut indication that KS is the same as OCB.

The OCB antecedents failed to consistently serve as motivators of KS. This view is further supported by the interview data where in-role job and other non-OCB type factors emerged as frequent motivators.

### Revisiting Impression Management Theory

Recall that *Impression Management* is the process by which individuals attempt to control the impressions others form of them (Goffman, 1959). *IM* emerged as a significant antecedent of KS at the Hippocrates organization. This occurred in spite of the fact that the *IM* scale used in the study has been criticized (Rioux and Penner, 2001).

The interview data also revealed *IM* to be an important motivator of KS. Table 2 shows that this either emerged blatantly and was categorized as *Perceived Rewards for the Organization* or emerged subtly and was categorized as Recognition, Reputation and Respect. Furthermore, the interview data that elicited the effects of KS supports the works of Leary and Kowalski (1990) who posited that employees engage in *IM* because it helps them achieve their goals, creates positive images of themselves and because they perceive a discrepancy between their current and desired image. The latter emerged overwhelmingly across both organizations as an effect of KS (and hence *IM*) for the same respondents who indicated that they were motivated to share because they sought to build their reputation and visibility.

Although not overwhelmingly present in the survey analysis, manifestations and effects of *IM* emerged in the interview analyses. This suggests that the theory of *IM* and its ensuing empirical research can significantly add to understanding KS within work environments.

### CONCLUSIONS

The findings and lessons learned from this study have several implications for future research. These can be summarized in five main directions: Explore the TRA model of KS using other statistical tools such as structural equation modeling, confirm the interpretive findings in the present study using positivist research methods confirm/disconfirm some of the inconclusive survey findings, test/update/refine the KS behavior scale psychometrically, and design studies that focus on impression management and culture as explanatory factors of the KS behavior.

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