

Electronic Knowledge Sharing in Oil and Gas Sector: A Grounded Theory Approach

Sureena Matayong, Ahmad Kamil Mahmood, Mazeyanti Mohd Ariffin

Department of Computer and Information Sciences,
Universiti Teknologi PETRONAS (UTP),
31750 Tronoh, Sri Iskandar
Perak, MALAYSIA
smatayong@gmail.com, kamilmh@petronas.com.my, mazeyanti@petronas.com.my

ABSTRACT

Employees' lack of participation in electronic knowledge sharing (EKS) is a subject that has been attracted to both practitioners and academicians in the field of organization and information technology (IT). The organizations employ IT tools for knowledge sharing with the purpose to manage employees' knowledge especially when they are geographically dispersed. However, the number of employees who participate for electronic knowledge sharing is still inadequate; most organizations still fail while few others are successful. With this circumstance, it is important for organization to get insight and understand to enhance the number of participation to electronic knowledge sharing. Therefore, the paper seeks to explore the concepts or tentative theories of employees' perceptions and experiences about electronic knowledge sharing to explain the behavior of employees about electronic knowledge sharing. This paper will present the grounded theory (GT) approach to conceptualize the phenomenon of electronic knowledge sharing of oil and gas sector in Malaysia.

Keywords

Electronic Knowledge Sharing, Oil and Gas Sector, Grounded Theory

1.0 INTRODUCTION

The advent of computer and information technology (IT) for the past years has changed the way people communicate and share information. Employees are depending more on computer mediated communications platforms like email, websites and electronic bulletin boards to get connected with each other (Brown & Duguid, 2000). Many knowledge management (KM) scholars and practitioners believe that these technology-based platforms can be used to facilitate sharing knowledge and create a community of

practices among knowledge workers (Razavi & Iverson, 2006).

Consequently, organizations are concentrating on implementing technology-based platform to manage knowledge like knowledge repository and electronic knowledge sharing (EKS). Despite, significant investments were made by the organizations, technology-based platform alone fail to spur and cultivate the knowledge sharing culture among the knowledge workers. Recently, both researchers and practitioners has paid attention to people factor to improve on this matter. Although there are few studies had been done to focus on human factors about knowledge sharing (Wasko & Faraj, 2005; Lin, et al. 2009; Rau, Gao & Ding, 2008), there has been relatively little in-depth research into the perceptions and experiences of employees about their knowledge sharing behavior in electronic environment especially in oil and gas sector in Malaysia.

Thus, the paper seeks to explore how employees view and experience EKS to understand and explain the behavior of employees of this phenomenon. The paper focuses on using GT approach to conceptualize EKS behavior of employees in oil and gas sector in Malaysia as well as to discuss on the outcome of this study.

2.0 BACKGROUND

Most knowledge resides in people's mind, hence when they leave, they also bring along their knowledge with them (Awad & Ghaziri, 2004). Moreover, the knowledge holders or experts in an organization are not appropriately and adequately broadcasted throughout the organization. So, people within the organization are not aware and effectively acquire the knowledge from the experts. Consequently, knowledge gap will occur and may lead to knowledge loss. This situation occurs not only in small companies but also in big organization like General Motors (GM) and oil and gas companies (Gupta & Govindarajan, 1991).

A report by the Society of Petroleum Engineers (SPE) estimated that between 1980 and 1998, the number of people working in the oil and gas companies fell from 700,000 to 300,000. At present, the age of most SPE members is at the median of 47 years old. The report predicted that in 2010, the companies will experience a 40% attrition rate among petroleum workers, and in the next 10 years the companies will lost the cumulative experience and knowledge due to retirement, and yet almost half of the workforce will be new(Leavitt, 2002).

The aim of implementing KM is to acquire knowledge from experts and make it available throughout the organizations in timely manner (Becerra-Fernandez, Gonzalez, & Sabherwal, 2004). Majority of communication took place beyond the formal structure or position in an organization (Cross, 2002). People needs knowledge to get their work done and majority of them rely on connection with other individuals to acquire the knowledge (Anand, Glick, & Manz, 2002; Wasko & Faraj, 2000).

Given the importance of KM in improving organizational performance and competitiveness, knowledge sharing (KS) is considered as the secret ingredients of productivity and innovation (Bhirud, Rodrigues, & Desai, 2005; Gumus, 2007). KS does not only improve the level of competency but also speeding up the deployment of knowledge throughout the organization e.g. the study of Toyota demonstrates that KS system can be effective for transferring and recombining knowledge because it consists of various types of knowledge. Their study provides evidence that employees who link to the KS method are able to learn faster; subsequently improving their productivities (Dyer & Nobeoka, 2000). Another study shows that the knowledge that embedded in the interaction of people provides a basis for competitive advantage to organizations because they are engaged in a collective practice, joint sense making, and learning from other experiences (Argote & Ingram, 2000). Snowden in his theory of Organic KM further agreed that knowledge may also resides in relationship, hence ones need to 'get connected' with experts to acquire the knowledge (Snowden, 1999).

KS has been identified by many researchers as a significant component for KM success (Kankanhalli, 2005; Lin, 2009; Wasko & Faraj, 2000; Williams, 2001). This activity can be supported in organizations with the growth of IT especially in terms of repository and collaborative tools for managing knowledge. The continuation of IT development and innovation has led to proliferation of various tools for sharing knowledge

electronically. Indeed, exchanging information or sharing knowledge in the electronic network environment has dramatically changed individuals' lives. Thus, many organizations recognize it as valuable practice for KM and begin to support this practice to meet business needs and objectives.

3.0 METHODOLOGY

3.1 Grounded Theory

GT is a qualitative research method that has been increasingly common to adopt in information system research area because the method is very helpful in explanation of phenomenon, developing context-based and process oriented descriptions (Hughes, 2000; Myers, 1997; Trauth, 2001; Urquhart, 2001). Moreover, this method is recommended to hard sciences as well as social sciences (Allan, 2003). GT method is a primarily inductive exploration process that is grounded in data systematically gathered and analyzed. Glaser and Strauss (1967) was first to discover this method and presented in the book "The Discovery of Grounded Theory" (B. G. Glaser & Strauss, 1967). The principle of GT is not testing the theory but building it. The researchers will use the interpretive approach to interpret the phenomenon of interested area i.e. EKS and continuously and simultaneously perform data collection and data analysis to find the concepts and theories without priori assumptions and hypotheses. As Razavi and Iverson stated that the concepts are not proven but suggested. (Razavi & Iverson, 2006).

3.2 Justification for Grounded Theory Adoption

There are few reasons for researchers to adopt this approach to explore the concept of EKS behavior of employees in oil and gas sector in Malaysia.

First, GT is a suitable method for situations where the researchers are trying to reveal participants' experiences, perceptions and build a theoretical framework based on reality (Razavi & Iverson, 2006). With this regards, researchers would like to explore the employees' experiences and perceptions from a real situations that revealed data by employees. Therefore, the most suitable method is to use GT approach.

Second, this method also will help the researchers to develop the theory of participants and give insights to the existing theories. There is a lack of theoretical foundation that helps to understand the actual electronic knowledge sharing in oil and gas sector in Malaysia particularly. To fill this constraint and limitation, the researchers will

investigate and explore this phenomenon to understand the situation within real life context where the real problem and the boundary between phenomenon and its context are not seen as being clear (Shannak & Aldhmour, 2009).

Third, GT method offers a set of procedures for coding and analyzing data which keep up the analysis close to the data and present the inductive discovery about the phenomena of study about EKS. These procedures make it easier for researchers to follow specific steps to develop theory (Charmaz, 2006). As a result, researchers are confident in the area of conceptualizing because it includes the resources of developing theoretical propositions from data itself.

Last, GT method is looking toward generating of a new topic of EKS rather than evaluating or assessing something that had already been found. So the researchers are satisfied with the approach because it can lead to the real contribution of the study at the end (Charmaz, 2006).

3.3 Differences of Grounded Theory Approach

According to McCallin, there are three versions of grounded theory, the original Glaser and Strauss, Glaserian and Straussian (McCallin, 2003). To devote valuable resources in the research and avoid of being obliged to debate and choose sides, researchers had evaluated the methodological and ideological differences between Glaserian and Straussian. (Allan, 2003; Borgatti, 2005; Bryant, 2002, 2003; Camargo, 2008; Chiovitti, 2003; Cutcliffe, 2005; Dunican, 2006; Fernandez, 2004; B.G. Glaser, 1992; B. G. Glaser & Strauss, 1967; Graham & Thomas, 2008; Locke, 2001; Pandit, 1996; Scott, 2004; Shannak & Aldhmour, 2009; Smit & Bryant, 2000; Strauss & Corbin, 1998; Walker & Myrick, 2006)

Table 1: Differences of Grounded Theory Approach adapted from Onions, the knowledge studio

Glaserian	Straussian
Starting with broad astonishment or an empty mind	Started with having general idea of where to begin
Theory is emerged with neutral questions	Theory is emerged with structured questions
Theoretical sensitivity comes from immersion in the data	Theoretical sensitivity comes from methods and tools
Conceptual theory development	Conceptual descriptions of situation
The theory is grounded in the data	The theory is interpreted by observers
The credibility of the theory, or verification, is obtained from its grounding in the data	The credibility of the theory is from the rigor of the method

Should identify a basic social process	Need to identify a basic social process
The researcher is submissive, exhibiting self-discipline and control	The researcher is vigorous
Data reveals the story	Data is structured to reveal the story
Less rigorous coding, a constant comparison of incident to incident, with unbiased questions and categories and properties evolving. Be aware of over conceptualize, identify key points	More rigorous coding and technique defined. The nature of making comparisons diverges with the coding technique. Labels are carefully crafted at the time. Codes are derived from 'micro-analysis which analyze data word by word'
Two phases or types of coding, simple (fracture the data then conceptually group it) and substantive (open or selective, to produce categories and properties)	Three types of coding, open (identifying, naming, categorizing and describing phenomena), axial (the process of relating code to each other) and selective (choosing a core category and relating to other categories to that)
Some people regards as the only 'True' GT method	Some people regards as a form of qualitative data analysis QDA

3.4 Sampling and Data Collection

In GT method, sampling is recruited according to their expert knowledge of the phenomenon study rather than the size of population (J. Green & Thorogood, 2005). Glaser and Strauss (1967) refer to this as theoretical sampling. In this study, researchers selected the participants who are closely experiencing to the situation under investigation known as key informants; they are senior managers, managers and knowledge workers at the executive level. The researchers have considered these groups as key informants because they have knowledge and experiences related to EKS. As Goulding, Green and Thorogood mentioned that key informants are those who most likely to provide information that can lead to the provisional concepts and direct the researchers to further theoretically identified samples, locations, and forms of data in order to develop theory as emerges (Goulding, 2005; J. T. Green, N., 1978).

Generally, data collection in GT method follows the standard procedures for field research (Tavakol, Torabi, & Zeinaloo, 2006). The researchers went to the oil and gas company within Malaysia and gathered the data. This study used unstructured interviews for data collection to create the theory. At the initial stage, there were 8 participants who were interviewed. The interview strategy was open-ended questions about electronic knowledge sharing in their company. This strategy was used in order to allow informants to discuss their views and

experiences of key topics to discover the research ground of what are the situations and issues related. All of interviews in this study were tape recorded with permission of the participants. Then, the transcriptions of tape recorded had been done to provide the accurate record of analysis. The procedures of analyzing data will be mentioned in the next section.

Data collection process is constant and it is ceased when further data is no longer adding to the insights already gained. This indicator calls theoretical saturation. At this point, it is not necessary for further analysis because the analytical framework is saturated (Corbin, 2008; B. G. Glaser, 2005).

Table 2: The participants' information

No.	Alias	Sex	Age	Operating Unit	Department	Position	Working Experience	Age of using internet
1	Mary	F	43	Research & Technology	Group Technology Solution	Manager	18 yrs	33
2	Saim	M	45	Academic	Library	Senior Manager	13 yrs	35
3	Sarah	F	55	Business	Technology capability and Data Management	Senior Manager	30 yrs	45
4	Lim	M	24	Business	Technology capability and Data Management	Executive	1 yr	14
5	Anna	F	28	Business	Deep Water	Executive	4 yrs	18
6	May	F	33	Business	Technology capability and Data Management	Executive	11 yrs	23
7	Ha	F	32	Training	Management	Executive	9 yrs	32
8	Julia	F	48	Training	Management	Manager	17 yrs	38

The name is alias and F = Female M= Male
 Age of using internet = Age that participants started using internet.

The first data collection started on August 2009, the participants were invited through e-mail. There were 6 females and two males from the respondents. The range of ages are mostly from 32-55 years old, only 2 persons are 24 and 28 years old. All participants knew and were aware of electronic knowledge sharing and the tools and systems provided for this activity that is available in the company.

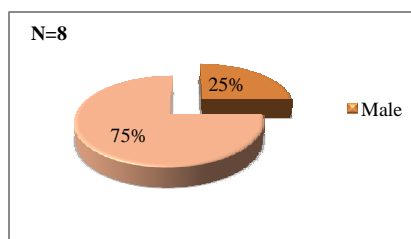


Figure 1: Description Participants' gender

Figure 1 shows the sample of the entire group of 8 participants, 25% were male and 75% were female. This can conclude that the majority of respondents are female.

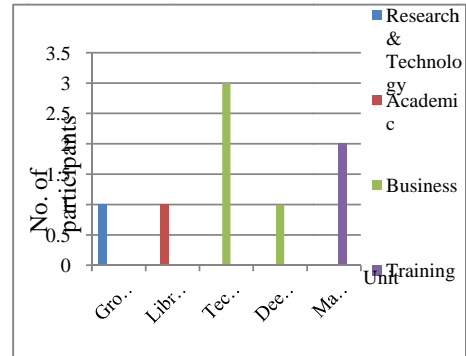


Figure 2: Description of participants' operating unit and department distributions

Figure 2 illustrates the distribution of the departments that participants are working at and the operating units that they belong to. The highest number of participants in this study were from business department which under technology capability and data management operating unit.

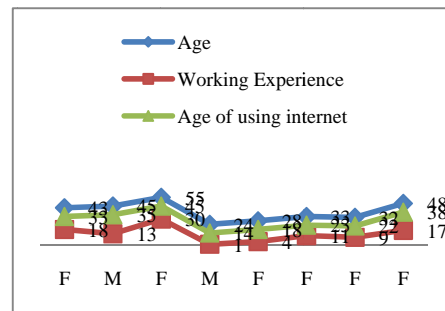


Figure 3: Description of participants' age, working experience and age started using internet

Figure 3 shows participants' age, the age starting using internet as well as years of working experiences. From the working experiences and age line, we can see that mostly participants have long experiences in working and have been allocating in this company for many years e.g. a female at the age of 55 years old; she has worked with the company for 30 years. The experience of employees is very meaningful data for this study. Moreover, if we look at age line and age of using internet line, the calculation numbers informed that mostly participants' experiences of internet usage at approximately 10 years.

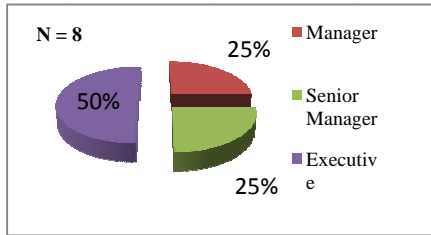


Figure 4: Description of participants' position distributions

Figure 4 shows that this study has 3 groups, 25% were senior manager group, another 25% were manager group and 50% were executive group. In actual fact, the management teams were given very meaningful data of this study because of their knowledge and experiences of the phenomenon itself.

3.5 Data Analysis

The researchers used ATLAS.TI to help for data analysis process of this study. The software helped to label the data with codes and to write theoretical notes that captured quick thoughts. The software not only helps with the abstraction process but also with the analysis of the emerging concepts and ideas by providing tools about it. Figures 5-6 below are captured from this software in the data analysis processes.

In this study, researchers performed constant comparative method of analysis with three levels, open coding, axial coding and selective coding (Strauss & Corbin 1998). according to GT approach, researchers applied the process of data collection and data analysis which suggested to run in parallel from the beginning of the research (Tavakol et al., 2006).

- Level 1 : Open Coding

The researchers identify the code in the manuscripts at this stage. The codes are called substantive codes or in vivo codes because the codifications the substance of the data and use participants' word as much as possible (Stern, 1980). However, the researchers sometimes may construct the codes based on concepts that gained from data (Mullen PD, 1978). Subsequently, a list of codes are compiled and compared against the original transcripts to make sure that the code use constantly throughout all the transcripts. (Figure 5 shows example of some codes from coding analysis). At the same time, notes will be taken of emerging concepts, the ideas at hand and the relationships between the codes (Razavi & Iverson, 2006).

(Figure 6 shows example of some emergent concepts and categories).

- Level 2 : Axial Coding

The result of this stage is shaping core categories with sub-categories. The process of axial coding will connect back the main categories with their relationships after the fracture data that being done in the first level of coding. However, the process at this level is not connecting the discrete categories that will be proceeding in selective coding (Pandit, 1996).

- Level 3 : Selective Coding

This is the most conceptual level of codes. This stage at times called theoretical constructions or theoretical building. Selective coding is the process of draw up the boundaries of codes to only those concepts and relationships that relate to core categories, resulting in a more focused theory with a smaller set of higher level concepts (Razavi & Iverson, 2006) as result of it see figure 7.

4.0 THE GROUNDED THEORY

In GT, the fundamental of analysis is to derive codes, concepts and categories. The coding of the data is the first steps during the analysis of interviews. It is a form of content analysis to find the issues among the noise of data. However, the data should not be forced by preconceived ideas or to look for evidence to support the established ideas (B. G. Glaser, 2002). Glaser suggested that if we are not sure about the process, just analyze as we see the data in front of us (Allan, 2003). Figure 5 presents some of the codes from this study. Next, Figure 6 includes the concepts and categories that are from comparison and combination of the codes. Figure 7 shows the result of this study through constant comparative method that emergence of categories.

5.0 DISCUSSION

The tentative theory described in this paper provides the result of this study about EKS behavior in oil and gas sector in Malaysia. In general, the GT approach presents the data that emerged from analysis that provides a set of propositions to understand EKS behavior in this context. First, information and resources are the concern for employees to share their knowledge electronically. Therefore, there is the relationship between the availability of information and resources and electronic knowledge sharing in oil and gas sector. Second, management and leadership play the role for employees to share their

knowledge in this environment. Third, the employees prefer to have the guidance regarding the procedures and processes to share knowledge electronically, because they are not sure what can be shared and cannot be shared as well as they are not sure regarding the process of sharing knowledge electronically. Last, the lack of system support and tools are not user friendly might hold the employees to share their knowledge in this environment.

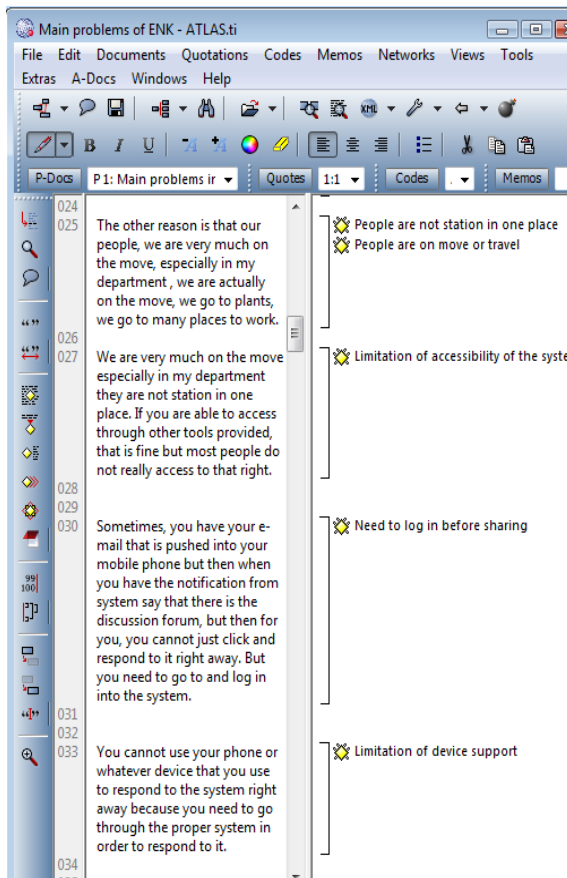


Figure 5: Example of some codes from coding analysis steps

6.0 CONCLUSION

This paper attempts to provide a better understanding of EKS behavior in oil and gas sector in Malaysia. The study presents the result through examining the key problems with sharing knowledge in electronic networked environment. This study has developed the tentative theory about electronic knowledge sharing behavior in an oil and gas company in Malaysia which could be applied to other oil and gas company in Malaysia. Besides, it illustrates the tentative theory and the practical issues of grounded theory approach to exploration

and inductive development on interactive perceptions and experiences about electronic knowledge sharing of employees in oil and gas sector in Malaysia.

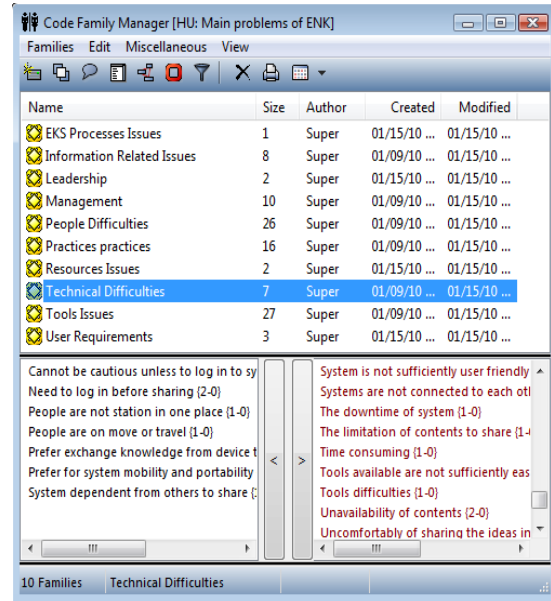


Figure 6: The emergence of codes to concepts and categories

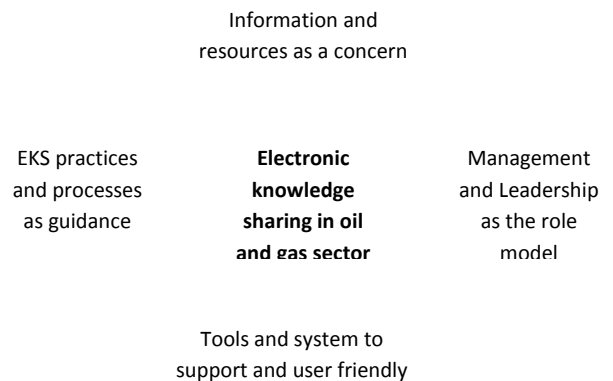


Figure 7: Tentative theory to explain EKS behavior in oil and gas sector

The GT method is recommended as a great way to generate or develop the theory that is grounded from data. The researchers are able to derive the context based theory from data collected in the field of study. The result from analysis gave insight to a better understanding to the phenomena studied and provides a theoretical foundation that helps to understand the actual EKS behavior in oil and gas

sector in Malaysia. Therefore, the outcome of this study can contribute to information system analysts and KM practitioners to understand more how the human factors play the important role in this environment. Moreover, this result can assist them to look at the holistic view of all aspects in organizations that include technology, people and processes in implementing EKS system in their organization.

REFERENCES

- Allan, G. (2003). A Critique of Using Grounded theory as a Research Method. *Electronic Journal of Business Research Methods*, 2 (1), 1-10.
- Anand, V., Glick, W. H., & Manz, C., C. (2002). Thriving on the Knowledge of Outsiders: Tapping Organizational Social Capital. *Academic of Management Executive*, 16 (1), 2002, pp.87-101.
- Argote, L., & Ingram, P. (2000). Knowledge Transfer: A Basis for Competitive Advantage in Firms. *Organizational Behavior and Human Decision Processes*, 82 (1), 150–169.
- Becerra-Fernandez, I., Gonzalez, A., & Sabherwal, R. (2004). *Knowledge Management : Challenges, Solutions and Technologies*. New Jersey: Pearson Prentice Hall.
- Bhirud, S., Rodrigues, L., & Desai, P. (2005). Knowledge sharing practices in KM : A case study In Indian software subsidiary. *Journal of Knowledge Management Practice*. Retrieved 6 January 2006, from <http://www.tlinc.com/artic1103.htm>
- Borgatti, S. (2005). *Introduction to Grounded Theory*. Retrieved from www.analytictech.com/mb870/introtoGT.htm
- Bryant, A. (2002). Grounding Systems Research: Re-establishing Grounded Theory. *Proceedings of the 35th Hawaii International Conference on System Sciences*.
- Bryant, A. (2003). A Constructive/ist Response to Glaser. *Forum Qualitative Sozialforschung /Forum: Qualitative Social Research*, 4 (1). Retrieved from <http://www.qualitative-research.net/fqstexte/1-03/1-03bryant-e.htm>
- Camargo, M. R. (2008). A grounded theory study of the relationship between e-mail and burnout. *Information Research*, 13 (4).
- Charmaz, K. (2006). *Constructing Grounded Theory: A practical Guide Through Qualitative Analysis*. SAGE publications India. Pvt. Ltd.
- Chiovitti, R. F. & Piran, N. (2003). Rigour and grounded theory research. *Journal of Advanced Nursing*, 2003, 44 (4), 427-435.
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research : techniques and procedures for developing grounded theory (3rd Edition)*. Los Angeles, Calif.: Sage Publications, Inc.
- Cross, R., Borgatti, S.P. & Parker. (2002). A Making Invisible Work Visible: Using social network analysis to support strategic collaboration. *California Management Review*, 44 (2), 25-46.
- Cutcliffe, J. R. (2005). Adapt or adopt: developing and transgressing the methodological boundaries of grounded theory. *Journal of Advanced Nursing*, 51 (4), 421-428.
- Dunican, E. (2006). Initial Experiences of Using Grounded Theory Research in Computer Programming Education. *18th workshop of the psychology of programming interest group, University of Sussex, September 2006*.
- Dyer, J. H., & Nobeoka, K. (2000). Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case. *Strategic Management Journal*, 21, 345–367.
- Fernandez, W. D. (2004). Using the Glaserian Approach in Grounded Studies of Emerging Business Practices. *Electronic Journal of Business Research Methods*, 2 (2), 83-94.
- Glaser, B. G. (1992). Basics of Grounded Theory Analysis: Emergence versus Forcing. *Sociology Press*.
- Glaser, B. G. (2002). Private Conversations in Paris.
- Glaser, B. G. (2005). Basic Social Processes. *Grounded Theory Review*, 4, 1-27.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine.
- Goulding, C. (2005). Grounded Theory, Ethnography and Phenomenology: A Comparative Analysis of Three Qualitative Strategies for Marketing Research. *European Journal of Marketing*, 39 (3/4), 294-309.
- Graham, B., & Thomas, K. (2008). Buiding Knowledge – Developing a Grounded Theory of Knowledge Management for Construction. *The Electronic Journal of business research methods* , 6 (2) 115-122. Retrieved from www.ejbrm.com
- Green, J., & Thorogood, N. (2005). *Qualitative Methods for Health Research*. London: Sage.
- Green, J. T., N. (1978). Theoretical sensitivity: Advances in the Methodology of Grounded Theory. *Mill Valley (CA): Sociology Press*.
- Gumus, M. (2007). The effect of communication on knowledge sharing in organizations. *Journal of knowledge management practices*, 8 (2).
- Gupta, A. K., & Govindarajan, V. (1991). Knowledge flows and the structure of control within multinational corporations. *Academy of Management Review*, 16 (4), 768–792.

- Hughes, J., & Howcroft, D. (2000). Grounded Theory: Never Knowingly Understood. *Information Systems Review*, 4 (1), 181-197.
- Kankanhalli, A., Tan, B. C. Y. & Wei, K. K. (2005). Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation. *MIS Quarterly*, 29 (1), 113-143.
- Leavitt, P. (2002). Applying Knowledge Management to Oil and Gas Industry Challenges. *APQC, American productivity and quality center. Released October.*
- Lin, M.-J. J., et al. (2009). Fostering the Determinants of Knowledge Sharing in Professional Virtual Communities. *Computers in Human Behaviour*, doi : 10.1016/j.chb.2009.03.008.
- Locke, K. (2001). *Grounded Theory in Management Research*. London: Thousand Oaks.
- McCallin, A. M. (2003). Designing a Grounded Theory Study: Some Practicalities. *Nursing in Critical Care*, 8 (5).
- Mullen PD, R. R. (1978). The Potential of Grounded Theory for Health Education Research: Linking Theory and Practice. *Health Educ Monographs*, 6, 280-294.
- Myers, M. D. (1997). Qualitative Research in Information Systems. *Management Information Systems Quarterly*, 21(2), 221-242.
- Pandit, N. R. (1996). The Creation of Theory: A Recent Application of the Grounded Theory Method. *The Qualitative Report*, 2 (4). Retrieved December, from <http://www.nova.edu/ssss/QR/QR2-4/pandit.html>
- Razavi, M. N., & Iverson, L. (2006). A Grounded Theory of Information Sharing Behavior in a Personal Learning Space. *ACM, CSCW, November 4-6, 2006, Banff, Alberta, Canada.*
- Scott, K. W. (2004). Relating Categories in Grounded Theory Analysis: Using a Conditional Relationship Guide and Reflective Coding Matrix. *The qualitative report*, 9 (1), 113-126.
- Shannak, R. O., & Aldhmour, F. M. (2009). Grounded Theory as Methodology for Theory Generation in Information System Research. *European journal of economics, finance and administrative sciences*, 15.
- Smit, J., & Bryant, A. (2000). Grounded Theory Method In IS Research: Glaser Vs Strauss. *Working Paper - IMRIP 2000-7*. Retrieved from www.lmu.ac.uk/inn/im/2000-7.pdf.
- Snowden, D. (1999). A Framework for creating a sustainable programme. *CBI Guide to Knowledge Management London Caspian Publishing/Confederation of British Industry 1998, Republish in Knowledge Management Year Book 1998 Butterworth Heinemann, April.*
- Stern, P. (1980). Grounded Theory Methodology: Its Uses and Processes. *Image (IN)*.12, 20-3.
- Strauss, A. L., & Corbin, J. (1998). *Basics of Qualitative Research Techniques and Procedures for Developing Grounded Theory*. USA: Sage.
- Tavakol, M., Torabi, S., & Zeinaloo, A. A. (2006). Grounded Theory in Medical Education Research. *Med educ Online*. Retrieved from <http://www.med-ed-online.org>
- Trauth, E.M. (2001). *Qualitative Research in Information Systems: Issues and Trends*. Hershey, PA: Idea Group Publishing.
- Urquhart, C. (2001). An Encounter with Grounded Theory: Tackling the Practical and Philosophical Issues. In Trauth, E. (Ed.) *Qualitative Research in Information Systems: Issues and Trends*. London: Idea Group Publishing.
- Walker, D., & Myrick, F. (2006). Grounded Theory: An Exploration of Process and Procedure. *Qualitative Health Research*, 16 (4), 547-559.
- Wasko, M., & Faraj, S. (2000). It is What One Does: Why People Participate and Help Others in Electronic Communities of Practice. *The Journal of Strategic Information Systems*, 9 (2/3), 155-73.
- Williams, M. (2001). In Whom We Trust: Group Membership as an Effective Context for Trust Development. *Academy of Management Review*, 26 (3), 377-397.