

Employee perception about knowledge management in Information Technology Industry

Dr. Varsha Jain*
Dr. Subhadip Roy**

Abstract

Knowledge management includes all the activities and practices of organization which help in identifying, creating, representing and distributing the knowledge. By knowledge management performance is improved, innovation takes place which helps in facing the competition and transfer of knowledge also takes place which helps the employee development. All these factors are associated with the organizational objectives. Therefore in order to achieve the organizational objective knowledge management is very important. Before using knowledge management in the organization, perception of the employees is to be studied thoroughly as it will be implemented on them. The present research paper will focus on the employee perception about the knowledge management which will help in formulating the strategies and in achieving the goals. More specifically, the objectives of the study will be to understand the concept of knowledge management, study employee perception about knowledge management

Keywords: Knowledge Management Practice, Knowledge Management Performance, Causality

Introduction

Organizations have realized that in the uncertain economy the competitive advantage they have is from the knowledge. In the competitive environment success depends upon quality and management of knowledge wherein they apply it in their business processes. Knowledge management depends on three components culture, strategy and technology (Hussain and Ali, 2004). In the earlier industrial era organizations used to improve their efficiency and productivity by automation and decreasing redundancy. Now, in the present scenario and in the age of knowledge workers organizations have gone for massive restructuring and have eliminated redundant workers. Organizations are now streamlining the business process by exploring smarter way of working and improving the communication. In the knowledge economy knowledge management is the method of managing and acquiring the knowledgeable workers as the intellectual assets of the organization to sustain in the competitive marketplace. It is the new strategy initiatives taken by the companies for processing data and providing information that are affecting the expertise of the individual's mind. Today, companies are making long term investment in knowledge management. It will grow by \$ 1.8 billion to more than \$ 8 billion worldwide (Dyer, 2000).

*Assistant Professor, Integrated Marketing Communication, Chair, Dissertation and MICAMINDS, Shela, Ahmedabad, India. Email: varsha@micamail.in

**Associate Professor, IBS, Hyderabad, IFHE University Campus, Dontanapalli, Hyderabad, India. Email: subhadip7@rediffmail.com

Author is grateful to the anonymous referees for comments and suggestions for improving the text and contents of the paper. Author alone is responsible for any errors/mistakes still remaining in the paper.

In such a scenario it becomes important to understand whether knowledge management practices are actually leading to better employee performance. The present study tries to address this issue of Knowledge Management. The study focuses on empirical findings from a survey done among knowledge workers in India. The study tries to find out whether knowledge management practices in organizations lead to knowledge management performance among employees. The study then tries to draw learning based on the findings from the survey results.

Defining Knowledge Management

Knowledge is that information which is contextual, relevant and is actionable. It carries more meaning as it helps in solving the problem and hence it is very valuable. There is a difference between the information and knowledge, information accumulates and knowledge evolves, knowledge can be reused but information lapse as per the time. According to Holsapple and Whinston (1996) and Zack (1999) there are six type of knowledge which knowledge management can contain they are descriptive knowledge which relates to knowing what; procedural knowledge which relates to knowing how or step by step process; reasoning knowledge which relates to knowing why; presentation knowledge which relates with the delivery of the information; linguistic knowledge which relates to interpretation of the message which is received and assimilative knowledge which is related to maintaining and improving the existing knowledge. The first three type of knowledge is the basic knowledge and last three are related to understanding and learning of knowledge so that it can be used further.

Knowledge can be further classified into advantaged knowledge which describe the knowledge; base knowledge which is integral part of the company and trivial knowledge which have very little impact on the company (Clarke, 1998). As per Ulrich (1998) another term which can be used instead of knowledge is intellectual capital which is the competent and the commitment of the individual in achieving the organization goals. It can be further classified as tacit knowledge which is accumulation of expertise, learning and understanding. It is unstructured, intangible and it is difficult to code it. Another classification is explicit knowledge which is related with the policies, goals and strategies which is tangible and it is always codified. It can be communicated to other people very easily and interpersonal interaction is also not required.

Gupta et al. (2002) contended that knowledge management is the management of the organization knowledge and their intellectual assets so that organization's performance can be improved and more value can be added in its business working. It is the process by which the unstructured expertise can be identified, selected, organized and disseminated in the structured form of information to other employees in the organization. It helps in problem solving, strategic planning and decision making. It focuses on identifying the knowledge, then exploiting so that it can be shared in the formal way and then it can be further reused. Knowledge management helps the employees to share their knowledge and the best practices, it develops the sense of responsibility of knowledge sharing, acquiring and using the best practice, producing knowledge, driving knowledge for innovation, developing networks for the experts, building customer knowledge base, understanding and

measuring knowledge value and leveraging assets which is intellectual (Barth, 2000). According to Sivan (2001) knowledge management is the art which performs the actions of organizing, storing, gathering and disseminating by using data, information and wisdom as the knowledge objects.

Malhotra (1998) says that knowledge management is the important issue in for survival and competency of organization in the present environment. There is synergy between the technology and behavioral issues for effective knowledge management. Proper information and control system is used to achieve the pre defined organization goal. New business world is uncertain and highly unstable so control system and information actually helps the organization to use the best practice or the best business process to achieve the organization objectives. There is always the need to understand the problem pertaining to the environment. The focus is not on the right answer but to find or formulate the right questions as well. It emphasizes on doing right things rather than doing things right.

Knowledge management is important for the companies because what has worked earlier for them will not work now as the market needs keeps on changing. To cope up with the change there is always a need to asses the internal business practices of the companies which is the ongoing process. Knowledge management also improves the opportunity enhancement. The goal of knowledge management is to improve organization' ability to run the core competence in the business processes effectively. The four basic objective of knowledge management is to create knowledge, improve assets of knowledge, enrich the knowledge environment and manage the knowledge assets (Davenport et al., 1998). Knowledge management is the proactive activities which supports in creating, assimilating, transferring and implementing the knowledge. It is the continuous process of understanding the organization's needs, locating the knowledge and develops the method to improve the knowledge further.

Review of Literature

Knowledge management has a strong human component. Knowledge management is successful when knowledge based culture is developed in the organization and role and value of knowledge in day to day operation is emphasized. Culture is developed for learning and innovation in the organization (Allee, 1997). For effective knowledge management there is a good balance between the organization's culture and initiatives of knowledge management. If culture soil is not fertile then even the technology and best management practices will not work successfully. For developing the culture for knowledge management positive orientation of employees is done and importance of sharing the knowledge is clearly been explained so that they don't feel the sharing is done on the cost of their job (Stenmark, 2002). For implementing the knowledge management in the organization first and fore most parameter is SWOT analysis of the organization (Zack, 1999). Huang et al., (1999) identified 10 strategies which can be used in implementing knowledge management in the organization, they are; establishing methodology which is based on knowledge management, appointing a chief or point person for knowledge management, empower knowledge employees, managing customer centric knowledge, managing core competencies, fostering innovation, learning from best practices, sourcing

external knowledge, interconnecting the communities of expertise and then reporting the measured value of knowledge assets.

Technology plays an important role in knowledge management. It helps in sharing the knowledge of employees in the organization. Intranet and expert system technologies are used by the organization for effectively managing knowledge. It also helps to establish virtual meeting place for the employees where they can collaborate their ideas and exchange their thoughts and practices. There are three perspective of intranet as the technology in the knowledge management, they are, information, awareness and communication (Stenmark, 2002). It helps in solving the problem which the organization faces in the present market. Technology also helps in reducing the expert dependency in the organization. Expert systems are used by the company to do the same. Expert programs are the advisory programs at tend to imitate the reasoning power of the experts to solve the problems. There are other applied artificial intelligence technologies which are also used by the organization. Expert systems are of great help for the organization as they reduce the cost of the organization, it helps them in such an area where hiring an employee is very expensive. Knowledge engineers are used by the organizations to manage the expert system which includes four activities they are; acquisition of knowledge from the expert, representation of knowledge by signs, symbols etc., inferring the knowledge by proper reasoning and drawing conclusions and then finally transferring the knowledge to the users (Sivan, 2001).

Wing (2000) inferred that it is not only the technology which will help the organization in knowledge management but it is also the people who work in the organization. Their cognition, personal satisfaction, security and motivation are also very important factors which are considered by the organization. Knowledge management is very people centric as it integrates the learning, creates collaboration among the people and networks the competencies of the employees. Technology cannot work unless and until the employees who work in the organization the employees of the organization voluntary participate and communicate as the true owners of sharing the knowledge. For changing the thinking of the employees reward systems are restructured and management attitude is changed towards the employees (Davenport and Prusak, 1998).

In order to implement the knowledge management successfully in the organization people factors are to be considered. Personal knowledge management system is explored to define the knowledge of individuals at different levels of organization for implementing knowledge management effectively in the organization. Every individual has learning and experience which can be used as the resource for the knowledge management. Personal factors help in shaping the domain of personal knowledge management system of the organization (Fitzgerald, 2002).

Lewin and Regine (2000) contends that performance based approach is used for effective knowledge management in the organization. In order to implement performance based system in the organizations certain fields are prepared considering focus, will and capability of the employees (Kaplan and Norton, 1996). Performance level depends on the interaction and interdependencies of all these three factors. Focus means the

definition and understanding of the proposed performance like who, when, what, how etc., will represents the strength of the employees and capability is the skills of the employees. If there is change in any one of these it has direct impact on the other factor. Optimal performance is achieved when focus, will and capability forms the self reinforcing system where there is complete balance and harmony (Smith and Sharma, 2002). A wide range of initiatives are been taken to harmonize these three factors i.e. focus, will and capability which are based on learning (Drew and Smith, 1995). They are more specifically related to the knowledge management like strategic performance level (Itami and Roehl, 1987), general performance (Dixon, 2000) and technical (Applehans et al. 1999).

Work is the process which is has resulted in it whereas working is the activity which the employees carries out to produce the result. Work is the performance and working is the behavior of the employees in the organization. There are two types of work; they are knowledge work and the manual work. Knowledge work is based on the information and manual work is based on the materials. For manual work employee's skills are required to change the form of the material. Thus, it converts the material from one form to another. Therefore, it can be said that it is tangible as the conversion can be easily seen. Knowledge work is to convert the information from one form to another which is intangible. Nature of working also differs from the manual work to the knowledge work. The crux of the knowledge organization is the work which is done in the head of the employees (Zand, 1981). Thus, it can be said that the working of the employees cannot be seen. It can also be interpreted that working behavior of manual employee is public and working behavior of knowledge employee is private. Visibility of working is higher in case of manual employee as compared to the knowledge employee. Contribution towards the result in case of manual employee is immediate whereas in case of knowledge employee it is not immediate (Nickols, 2001).

There is a shift from the manual work to the knowledge work (Drucker, 1980). In 1980 the ratio of manual work and the knowledge work was 2:1 in ratio. In the present market the percentage of the knowledge work in the information technology field is 72. in this 13% is managerial, 15% clerical and 44% technical whereas in the manufacturing company the knowledge work is only 13% (Nickols, 2004).. This happened as the locus of control over the work and working differs.

Based on the literature review it could be postulated that there is a need to understand the dimensions of Knowledge Management Practices and Knowledge Management Performance. Moreover, it is also required to understand the effect of Knowledge Management Practice dimensions on the dimensions of Knowledge Management Performance. Thus the present study had three objectives. The first and second objectives were linked to identifying the dimensions of Knowledge Management Practices and Knowledge Management Performance. The third and last objective was to find the impact of various dimensions of Knowledge Management Practices on Knowledge Management Performance.

Methodology

The methodology section is subdivided into two parts.

Item Generation and Questionnaire Development

The review of literature yielded the necessary items required for identifying knowledge management practices (KMPRAC) and knowledge management performance (KMPERF). Fifteen items were identified, each for KMPRAC and KMPERF. (Refer to Table 1 and 2) The items were included in the questionnaire and the measurement method used was a five point bipolar Likert scale. Two additional questions were included to check whether library facilities (which are very important for Knowledge Management) are present in the organization and whether the organization has a performance based reward system.

Sampling and Data Collection

The study design used was a survey using a structured questionnaire. The sample consisted of knowledge workers mostly from the Information Technology industry. The questionnaires were sent via mail to 150 respondents randomly selected from mailing lists of IT companies. A total of 99 usable questionnaires were obtained back and were used for the final study.

Data Analysis

The first phase of the data analyses included Exploratory Factor Analysis (EFA) to identify dimensions of knowledge management practices (KMPRAC) and knowledge management performance (KMPERF). Factor analysis is a commonly used technique for identify the nature of the constructs or dimensions underlying responses in a specific domain (DeCoster, 1998). The KMPRAC and KMPERF items were factor analyzed separately using Factor Analysis. The extraction method used was Principal Component Analysis along with Varimax Rotation. Following this, set of linear regressions were run using the KMPERF factors as dependent variable and KMPRAC factors as independent. This was conducted to identify the relation between KMPRAC factors and KMPERF factors. The rationale behind the use of multiple linear regressions in this case was to model the relationship between two or more explanatory variables (KMPRAC) and a response variable (KMPERF) by fitting linear equations to observed data (Cohen et al., 2003). Linear regression has been used to quantify the strength of the relationship between a set of predictor variables and a predicted/dependent variable (Cohen et al., 2003)

Results and Discussion

Majority of the respondents (90%) agreed of having a mechanism of performance based reward system in their organization.

EFA Results

The KMPRAC items were found out to form three factors with the first factor having most of the variables (Table 1). The KMO value was 0.866 and Bartlett's test was significant. Reasonable levels of communality were obtained for each variable and the factor solution explained 73.42 % of the variance. Thus the dimensions of knowledge management practices (KMPRAC) were named as: Knowledge Sharing, General KM Practices and Knowledge Grooming. The relational similarity between the items in one factor led to the naming criteria for the same (Refer to Appendix I for more EFA results).

Five factors were extracted from the KMPERF items (Table 2). The KMO value was 0.700 and Bartlett's test was significant. Reasonable levels of communality were obtained for each variable and the factor solution explained 74.26 % of the variance. The dimensions of knowledge management performance (KMPERF) were named as: Knowledge Development, Updatedness, Personal Development, Learning and Performance Enhancement (Refer to Appendix I for more EFA results).

Multiple Regression Results

The factors scores for both KMPRAC and KMPERF factors were obtained by the average score of the variables included in the factor. Five multiple regression were run using the KMPRAC factors (km1, km2, km3) as independent variables and the KMPERF factors (kp1, kp2, kp3, kp4, kp5) as dependent variables one at a time (Detailed results are given in Table 3).

In almost all the regressions, the significant independent variable turned out to be General KM Practices (km2), and the reason maybe the majority of the variables being a part of that factor. It was also observed that it had a positive impact on the KMPERF factors. In one case i.e. for Updatedness (kp2), the independent variable km1 (Knowledge Sharing) was found out to be significant at 5% level. This result was logical since knowledge sharing is supposed to lead to updatedness. In case of kp1 (Knowledge Development) and kp5 (Performance Enhancement), the independent variable km1 (Knowledge Sharing) was found out to be significant at 10% level. This can also be justified by the fact that effective knowledge sharing is intended to foster Knowledge Development and improve performance. The last point to be noted here is that the independent variable km3 (Knowledge Grooming) was found out to be significant at 10% level for the Knowledge Development (kp1) factor. This also corroborates with the literature (Barth, 2000; Fitzgerald, 2002) since better grooming of the employees should lead to better knowledge development.

Discussion

The major contribution of the study was two. First the study successfully identified the dimensions of KM Practices and KM performance in the Indian Context. Thus the study findings contributed to the literature in knowledge management in the likes of (Hunag, 1999; Stenmark, 2002; and the like). The same study could be replicated in different country/cultural contexts to validate the dimensions of KM Practices and KM performance. The second major contribution of the study was to establish a significant and positive relationship between knowledge management practices in the organizations and knowledge based performance of the employees. Thus the outcomes of the second part of the study also support literature on Knowledge Management (Itami and Roehl, 1987; Applehans et al. 1999; Dixon, 2000; Wing, 2000). Thus the study raises the importance of proper mechanisms to develop, improve and cultivate knowledge management practices across the organization. The findings suggest that proper KM practices would lead to better performance at the employee level as well as the larger organizational level.

Limitations and Scope

There are a few limitations of this study which can be addressed in future research. The sample size could be increased and the study could be repeated for a larger sample size which may render some of the variables significant which, in the present study were found out to be insignificant. The study should also be extended to academic sector since knowledge management is

becoming an important issue in education as well. Moreover an interesting extension of the study could be replicate the same in developing nation context since knowledge management practices have been more prevalent in those contexts than countries such as India. Nevertheless, the present study has made an interesting contribution to the area of knowledge management from a practical perspective.

Table 1: KMPRAC Factor Solution

Sl. No.	Item	Variable Name Used in the Analysis	Suggested Factor Name
1	On the job peer discussion	PeerDisc	Knowledge Sharing (km1)
2	Discussion about project based on new technology	Newtech	
3	Case study discussion	Casestudy	General KM Practices (km2)
4	Project Analysis	Projectana	
5	Discussion Forum	Discforum	
6	Courses offered from management institutes	Mgmtcourse	
7	Exchange of informative mails by your colleagues	Infomail	
8	E-forums	Eforum	
9	Discussion about new clients	Newclients	
10	Sharing of best practices	Bestprac	
11	Management Development Programs	MDP	
12	Offsite Training	Offsitetrain	
13	Ideation Contests	Ideation	Knowledge Grooming (km3)
14	Mentoring Program	Mentoring	
15	Professional Training	Proftraining	

Table 2: KMPERF Factor Solution

Sl. No.	Item	Variable Name Used in the Analysis	Suggested Factor Name
1	Knowledge Identification	Kidenti	Knowledge Development (kp1)
2	Knowledge Creation	Kcreate	
3	Knowledge Sharing	Kshare	
4	Increase Productivity	Inproducti	Updatedness (kp2)
5	Improved Information Flow	Iminflow	
6	Help in New Projects	Newproj	
7	Help in maintaining good peer relations	Peerrelation	Personal Development (kp3)
8	Competitive advantage	Compadv	
9	Increase Innovation	Ininnovation	
10	Target Achievement	Target	Learning (kp4)
11	Personal Development	Personaldev	
12	Makes job easy	Jobeasy	
13	Faster Learning Ability	Fastlearn	Performance Enhancement (kp5)
14	Improve Performance	Imperf	
15	Increasing Client Management	Inclientmgmt	

Table 3: Summarized Regression Results

Regression Sl. No.	Dependent Variable	Model R Square (Adj. R Square)	Model F (Sig.)	Independent Variables	Standardized Beta	t	Sig.
1	KP1	0.349 (0.328)	16.949 (0.000)	KM1	0.169	1.918	0.058
				KM2	0.444	4.837	0.000
				KM3	0.160	1.839	0.069
2	KP1	0.142 (0.115)	5.238 (0.002)	KM1	0.016	0.157	0.876
				KM2	0.382	3.621	0.000
				KM3	-0.045	-0.45	0.653
3	KP3	0.391 (0.372)	20.359 (0.000)	KM1	0.259	3.049	0.003
				KM2	0.497	5.592	0.000
				KM3	-0.033	-0.388	0.699
4	KP4	0.155 (0.129)	5.820 (0.001)	KM1	0.013	0.132	0.896
				KM2	0.394	3.764	0.000
				KM3	-0.016	-0.165	0.869
5	KP5	0.228 (0.204)	9.366 (0.000)	KM1	0.170	1.774	0.079
				KM2	0.389	3.885	0.000
				KM3	0.013	0.143	0.887

References

- Allee, V. (1997). "12 Principle of Knowledge Management", *Training and development*, Vol.51, No. 11.
- Applehans W.E., Globe, A., and Laugero, G. (1999), *Managing Knowledge: A Practical Web Based Approach*, Addison Wesley Longman, Reading.
- Barth, S. (2000). "Knowledge as a Function of X", *Knowledge Management*.
- Cohen, J., Cohen P., West, S.G., and Aiken, L.S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. (2nd ed.) Hillsdale, NJ: Lawrence Erlbaum Associates.
- Clarke, P. (1998). "Implementing a Knowledge strategy for your firm", *Research Technology Management*.
- DeCoster, J. (1998). *Overview of Factor Analysis*. Retrieved December, 26, 2012 from <http://www.stat-help.com/notes.html>.
- Dixon, N.M., (200), *Common Knowledge*, Harvard Business School Press, Boston.
- Drew S. A. W., and Smith, P.A.C., (1995) "The Learning Organization: Change Proofing and Strategy", *The Learning Organization*, Vol.2 No. 1; pp4-14.
- Drucker P. *Management*. New York: Harper and Row. 1973.
- Drucker, P. *Managing in Turbulent Times*. London: Heinemann. 1980.
- Dyer, G. (2000). "Knowledge management Crosses the Chasm", *Knowledge management*.
- Davenport, T.H., DeLong D. W. (1998). "Successful Knowledge Management Projects". *Sloan Management Review*, Vol.39 No.2.
- Fitzgerald, L.A. (2002), "The Lens That Transcends", *J. Organization Change*, Vol.15, No. 4.
- Gupta, B., Iyer, L.S. and Aronson, J.E (2000). "Knowledge management Practices and challenges", *Industrial Management and Data systems*, Vol.100, No. 1 and 2.
- Holsapple, C. and Whinston, A.B., (1996). "Decision support system: A Knowledge Based approach". West Publishing.
- Huang, K.T., Lee, Y.L. and Wang, R.W., (1999). "Quality Information and Knowledge". Prentice Hall.
- Hussain, F. Lucas, C. and Ali, M. (2004). *Journal of Knowledge Management* Vol. 5, No.2.
- Itami, H. and Roehl, T.W. (1987), *Mobilizing Invisible Assists*, Harvard University Press, Cambridge.
- Kaplan, R.S. and Norton, D. P. (1996), *The Balanced Scorecard*, Harvard School Press, Boston.
- Lewin, R. and Regine, B. (2000), *The Soul At Work*, Simon and Schuster, New York.
- Malhotra, Y. (1998). "Knowledge Management, Knowledge Organization and Knowledge worker: A View from Front Lines", *Maeil Business Newspaper*.
- Smith, P. and Laughlin, M. (2004). *Journal of Knowledge Management Practice*, Vol. 5 No.3.
- Smith, P.A.C and Sharma, M., (2002), "Developing Personal Responsibility and Leadership Traits in All Your Employees, Part 2: Optimally Shaping and Harmonizing Focus, will and Capability", *Management Decision*, Vol. 40 No. 9.
- Stenmark, D. (2002). "Information versus Knowledge: Role of intranets in Knowledge Management". *Proceedings of 35th Hawaii International conference on System science*.
- Sivan, Y.N. (2001), "Nine Keys to Knowledge Infrastructure". Harvard University.
- Ulrich, D. (1998). "Intellectual Capital = Competence * Commitment". *Sloan Magazine Review*, Vol. 39, No. 2.
- Wiig, K. M., (2000), "Knowledge Management: An Emerging Discipline Rooted in the Long History", in *Desires, C. and Chauvel, D., (Eds.), Knowledge Horizons*, Butter worth Heinemann, Boston, 2000, pp. 3-26.
- Zack, M. H., (1999). "Developing a Knowledge Strategy". *California Management Review*.
- Zand, D.E., *Information, Organization and Power*. New York: McGraw Hill, 1981.

APPENDIX I**Rotated Component Matrix: KMPRAC Items****Rotated Component Matrix^a**

	Component		
	1	2	3
PeerDisc		.901	
Newtech		.854	
Casestudy	.785		
Projectana	.723		
Mentoring			.768
Discforum	.787		.423
Proftraining			.750
Mgmtcourse	.832		
Infomail	.682		
Eforum	.890		
Newclients	.823		
Bestprac	.893		
MDP	.906		
Offsitetrain	.901		
Ideation	.897		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Rotated Component Matrix: KMPERF Items**Rotated Component Matrix^a**

	Component				
	1	2	3	4	5
Kidenti	.786				
Kcreate	.851				
Kshare	.845				
Inproducti	.716				
Imperf					.894
Inclientmgmt					.819
Ininnovation			.810		
Target			.870		
Personaldev			.655	.504	
Jobeasy				.885	
Fastlearn		.419		.737	
Iminflow		.744			
Newproj		.757			
Peerrelation		.514			
Compadv		.752			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

