

Impact of Knowledge Management Practices in Indian Automobile Industry – An Empirical Investigation

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Knowledge, knowledge workers and Knowledge Management are topics receiving increasing attention from a variety of discipline. Many have said you're moving from a post-industrial to a knowledge-based economy and a recent survey by the Journal of Knowledge Management revealed that 92% of the responding executives indicated that they worked in knowledge intensive organizations. At the same time new technologies have been developed to better enable the management of knowledge. Knowledge Management is an emerging discipline as the potential uses, features and benefits of the current incarnation of Knowledge Management are still being defined and as increasing numbers of people and organizations begin to explore this new form of communication and organizational learning.

The purpose of this paper is to identify the various factors that contribute towards Knowledge Management practices in an automobile industry in India. The researcher carried out the study by framing a structured questionnaire and the mode of communication was personal interview. Census method was observed by the researcher and the entire 124 (population) has been taken for the study. Using Statistical Package for Social Sciences (SPSS) the following statistical tools were applied for the purpose of analysis and interpretation 1. Factor analysis 2. Correlation and 3. Reliability test. Some of the major findings were derived, that will be useful, relevant and significant to the present Indian scenario.

Keywords: Knowledge Management, Organizational Performance, Learning, Research & Development

INTRODUCTION

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At the same time new technologies have been developed to better enable the management of knowledge. Knowledge Management is an emerging discipline as the potential uses, features and benefits of the current incarnation of Knowledge Management are still being defined and as increasing numbers of people and organizations begin to explore this new form of communication and organizational learning. Much work remains.

From the Nonaka's model as shown in figure 1, KM is described as knowledge creation process, which represented by spiral conversion mechanism. We believe that each

process (socialization, externalization, internalization, combination) managing organizational knowledge assets or artifacts such as lessons learned, best practices, report, technical documents and so on. We can also elaborate the model by showing some examples of KM technologies that may be applied to facilitate the knowledge conversion process such as described in (Marwick 2001).

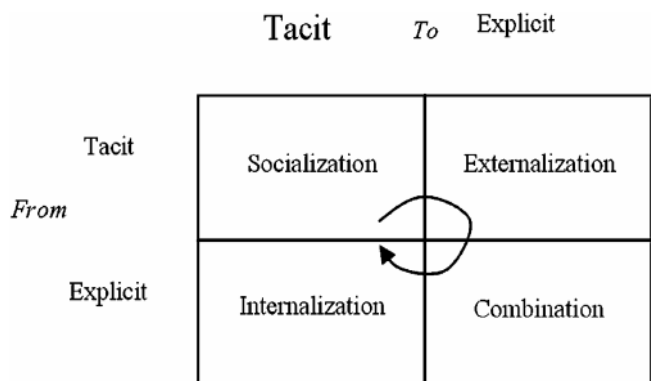


Fig. 1: Takeuchi's KM Model (1995) or SECI Model

While there are many processes of KM, such as gathering, searching, filtering, conceptualizing, projecting and transferring (Park and Kim, 2006), this study presents KM as a combination of five specific processes. These are: 1. Knowledge sharing and distribution 2. Knowledge generation and development 3. Knowledge codification and storage 4. Organization leader roles and 5. Reward systems.

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Literature Review

Daniel Palacios Marques et.al (2006) in their research work studied the connection between knowledge management practices and firm performance. Theoretical relations are tested through an empirical study carried out on 222 Spanish firms in the biotechnology and telecommunications industries. This paper shows how the firms that adopt knowledge management practices obtain better results than their competitors. The subject of principles has not been considered a dimension of knowledge management. New avenues of inquiry are opened considering this dimension. Joseph Lampel, Ajay Bhalla(2007) In their research paper they argued that the influence of Japanese management practices has led organizations towards a "naturalized" view aiming to resolve the ontological dilemmas that exist between communalism and individualism. Having conducted an extensive literature review, the paper draws on literature and examples to construct the argument that for organizations to benefit from Communities of Practice they need to balance the tension between practice and process of such initiatives. Kwong-Chi Lo, Kwai-Sang Chin (2009) This paper aims to develop a user-satisfaction-based knowledge management performance measurement model, including identifying the assessment criteria sourced from user-satisfaction-based core values, critical success factors and phases of knowledge management process. With the aid of the developed measurement model, organisations could assess the strength and weakness of their own knowledge management system and practice and then identify areas for improvement. User-satisfaction-based core values, critical success factors and five-phase knowledge management process are identified through literature review and analysis, and expert interviews, with the aid of system-modeling techniques. The seven user-satisfaction-based core values, eight critical success factors and five-phase knowledge management process are identified as the basis of the assessment criteria. M.D. Singh, Ravi Shankar et.al (2006) Knowledge management involves strategies and processes of identifying, capturing, and leveraging knowledge to enhance competitiveness. The new world of knowledge-based organizations is distinguished from the organizations of the last millennium by its emphasis on monitoring and controlling the organization by shared knowledge derived from internal and external data sources. It believes in continual transformation of the knowledge-base according to changing business strategy. The objective of this paper is to understand the KM practices in Indian manufacturing organizations, which are going through a major transition in this area. This paper reports the findings of a postal survey carried out to access the impact of KM practices in Indian manufacturing industries. Data were collected and analyzed for 71 industries under this category.

The results indicate that the main reasons why these organizations are focusing on KM are gaining competitive advantage and creating new knowledge. However, culture and financial constraints are amongst the highest ranked barrier for KM implementation.

Objectives of the Study:

- To identify the major knowledge management practices that enhance the employee's in an automobile industry in India.
- To know the relationship between vision&values and Research &Development in knowledge enhancement.

Methodology

The study is a descriptive one. Primary data was collected by the researcher with the help of structured questionnaire administered to level2 and level3 employees of R&D division. Since the study is about practicing of KM, the study was confined with R&D division and its effective practices. The total number of employees at level2 and level3 is 124. This study was carried out with all the 124 employees who are carrying out this knowledge management practices in that Automobile Industry. Due to various reasons the companies name was not disclosed in this study.

Hypotheses

1. There is relationship among the factors that enhance employee's performance.
2. There exist relationship between vision&values and R&D

Table 1
Reliability Statistics

Cronbach's Alpha	N of Items
.879	22

An examination had been made from the reliability of the data to check whether random error causing inconsistency and in turn lower reliability is at a manageable level or not, by running reliability test. From table 1 it is clear that values of Coefficient alpha (Cronbach's Alpha) have been obtained, the minimum value of Coefficient alpha obtained was .879 . This shows data has satisfactory internal consistency reliability.

Statistical Tools Used

Using Statistical Package for Social Sciences (SPSS) the following tools were administered in this study 1) Factor Analysis 2) Correlation and 3) Reliability Test.

Factor Analysis

Dimension: Knowledge Management practices

KMO and Bartlett’s Test

The individual statements on Knowledge management practices was examined using factor analysis based on 12 individual statements and the reliability of the samples collected was tested for internal consistency of the grouping of the items.

Table 2
KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.607
Bartlett’s Test of Sphericity	Approx. Chi-Square 197.018
	df 66
	Sig. .000

KMO measure of sampling adequacy is an index to examine the appropriateness of factor analysis. High values between 0.5 and 1.0 indicate factor analysis is appropriate. Values below 0.5 imply that factor analysis may not be appropriate. From the above table it is seen that Kaiser – Meyer – Olkin measure of sampling adequacy index is 0.607 and hence the factor analysis is appropriate for the given data set. Bartlett’s Test of Sphericity is used to examine the hypothesis that the variables are uncorrelated. It is based on chi- Square transformation of the determinant of correlation matrix. A large value of the test statistic will favor the rejection of the null hypothesis. In turn this would indicate that factor analysis is appropriate. Bartlett’s test of Sphericity Chi-square statistics is 197.018, that shows the 12 statements are correlated and hence as inferred in KMO, factor analysis is appropriate for the given data set.

Table 3
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.765	31.375	31.375	3.765	31.375	31.375	2.403	20.021	20.021
2	1.485	12.374	43.749	1.485	12.374	43.749	2.135	17.788	37.809
3	1.306	10.885	54.634	1.306	10.885	54.634	1.749	14.576	52.385
4	1.072	8.937	63.571	1.072	8.937	63.571	1.342	11.186	63.571
5	0.92	7.671	71.241						
6	0.766	6.385	77.626						
7	0.621	5.177	82.803						
8	0.554	4.616	87.419						
9	0.546	4.549	91.968						
10	0.465	3.878	95.846						
11	0.336	2.803	98.649						
12	0.162	1.351	100						

Eigen Value represents the total variance explained by each factor. Percentage of the total variance attributed to each factor. One of the popular methods used in Exploratory Factor Analysis is Principal Component Analysis, Where the total variance in the data is considered to determine the minimum number of factors that will account for maximum variance of data.

Rotation Method: Varimax with Kaiser Normalization

Interpretation of factors is facilitated by identifying the statements that have large loadings in the same factor. The factor can be interpreted in terms of the statement that loads high on it. The factors of a study on knowledge management

practices comprises of 12 individual statements. Out of 12 factors, 4 individual factors contribute more towards employee competencies

The factors are:

1. New features in the products are provided after studying the customer requirement.
2. Open forum helps in getting a better picture of the company strategy.
3. Training programs are scheduled on the basis of competency gap matrix.
4. SAP is used for important transactions.

Table 4
Rotated Component Matrix (a)

	Component			
	1	2	3	4
Competency gap helps in identifying knowledge gaps	.391	-.099	.697	.094
Training programs are on the basis of competency gap matrix	-.124	.184	.783	.138
Expertise from leading consultants and Institutions	.211	.382	.586	-.109
Company portal & KM portals supplements lot of information	.298	.657	.265	.302
Vision & Values are conveyed effectively	.626	.096	-.278	.327
R& D aids in Sharing of information	.442	.515	-.079	.470
Open forum helps in getting bigger picture of company strategy	-.053	.743	.013	-.091
E-publication are useful	.773	.265	.192	-.084
Knowledge is shared during meetings	.226	.742	.163	-.062
Modern aids & mails are used for knowledge sharing	.480	-.102	.196	.316
New features about products are provided based on customer requirement	.795	.232	.198	-.080
SAP is used for important transactions	.003	-.047	.104	.870

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

Table 5
Correlations There Exist Relationship between Vision & Values and R&D

		Vision & Values are conveyed effectively	R&D aids in sharing information	Open forum helps in getting company strategy	E-publications are useful	Knowledge is shared in meetings	Modern aids & mails are used for knowledge sharing
Vision & Values are conveyed effectively	Pearson Correlation	1	.469(**)	.032	.326(*)	.115	.113
	Sig. (2-tailed)		.000	.806	.011	.383	.388
	N	124	124	124	124	124	124
R&D aids in sharing information	Pearson Correlation	.469(**)	1	.186	.401(**)	.381(**)	.249
	Sig. (2-tailed)	.000		.155	.001	.003	.055
	N	124	124	124	124	124	124
Open forum helps in getting company strategy	Pearson Correlation	.032	.186	1	.201	.382(**)	-.009
	Sig. (2-tailed)	.806	.155		.123	.003	.948
	N	124	124	124	124	124	124
E-publications are useful	Pearson Correlation	.326(*)	.401(**)	.201	1	.336(**)	.221
	Sig. (2-tailed)	.011	.001	.123		.009	.089
	N	124	124	124	124	124	124
Knowledge is shared in meetings	Pearson Correlation	.115	.381(**)	.382(**)	.336(**)	1	.155
	Sig. (2-tailed)	.383	.003	.003	.009		.237
	N	124	124	124	124	124	124
Modern aids & mails are used for knowledge sharing	Pearson Correlation	.113	.249	-.009	.221	.155	1
	Sig. (2-tailed)	.388	.055	.948	.089	.237	
	N	124	124	124	124	124	124

** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

The correlation between the variables Vision & Values are conveyed effectively and R&D aids is sharing Information was correlated .469 and was highly significant, Correlation between Vision & Values are conveyed effectively and open forum in getting company strategy was correlated .032 and not significant, correlation between Vision & Values are conveyed effectively and E-publication are useful was .326 correlated and not significant, correlation between Vision & Values are conveyed effectively and knowledge is shared in meetings was .115 and which was not significant, correlation between Vision & Values are conveyed effectively and modern aids were used for knowledge sharing was .113 which was not significant. So there exist relationship between Vision and R&D.

CONCLUSION

The new world of knowledge-based organizations is distinguished from the organizations of the last millennium by its emphasis on monitoring and controlling the organization by shared knowledge derived from internal and external data sources. It believes in continual transformation of the knowledge-base according to changing business strategy. The objective of this paper is to understand the KM practices in an automobile industry in India, which are going through a major transition in this area. This paper presents knowledge management as a coordinating mechanism. Empirical evidence supports the view that a firm with a knowledge management capability will use resources more efficiently and so will be more innovative and perform better. The importance of training based on competency gap, SAP and R& D for enhancing the Knowledge of employee's is clearly pointed out in this research work.

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