Journal of Contemporary Issues in Business and Government Vol. 28, No. 04, 2022
https://cibgp.com/

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2022.28.04.068

THE IMPACT OF KNOWLEDGE MANAGEMENT PROCESSES ON INFORMATION SYSTEMS: AN EMPIRICAL STUDY ON IT INDUSTRY

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Abstract

The Information Technology sector has been profoundly impacted by advances in project management knowledge. As a result, it is critical to optimize service development processes in every project. This article focuses to explore the composition of "Knowledge Management" of IT professionals. The current research proposes a model of the impact of Management Support for Knowledge Application on Project Knowledge Application and Project Knowledge Application on effective Knowledge Management in the IT industry. To conduct the current analysis, the researchers used a quantitative research approach in the form of a survey. The questionnaire was randomly distributed to 180 IT employees of various software companies. The researchers did, however, collected 165 completed questionnaires and Reliability test, EFA and Simple Linear Regression statistical methods used. It is found that that there is a positive correlation between Project Knowledge Application and Effective Knowledge Management in IT Industry professionals.

Keywords: Information Technology, Knowledge Management, Project Management, Employees

Introduction

The scientific community has long been attentive to the issue of strategic, organisational and management alignment, and various perspectives have been examined (Chan and Reich, 2007). Chandler (1962) investigated the relationship between strategy and structure in large industrial companies in the United States and pointed out the importance of alignment between structure and strategy. He also showed that economic performance is directly related to the ability of management to create strategic alignment between the position of an enterprise in the competitive product-market arena and the design of an appropriate administrative structure to support its implementation. Waterman et al. (1980) supported Chandler's point of view, showing that an enterprise is a complex and adaptive system characterized not only by dynamic alignment between strategy and structure, but by a set of seven factors: strategy, structure, systems, style, staff, skills, and goals. They proposed the '7S Model', which is still widely used in the literature today.

All these contributions highlight the importance of investigating alignment between knowledge and KMSs. Despite they only develop conceptual frameworks to analyse interaction between technologies, techniques, and people, they do pave the way for further practical implications regarding the development of Decision

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Support Systems (DSSs) driving enterprises in the process of alignment between their knowledge and knowledge management systems. This issue has also been underlined in two literature reviews on the topic of knowledge management (Durst and Edvardsson, 2012; Cerchione and Esposito, 2016).

IT companies are endeavoring inflexible to accomplish an upper hand in the concerned business as far as items, cycles, individuals and technology. The viability of these systems relies upon companies (KM) which clarifies how knowledge is made, put away, moved and applied to the items/companies and cycles (Alavi and Leidner, 2001). The knowledge living in the company as individuals, rotations and applies is measured as the essential resource that increases the value of the individual and hierarchical results. This is especially more essential to IT companies' as they are profoundly knowledge driven. The product business was an initial adopter of KM, and adequate investigates have additionally been done on KM in IT for the beyond twenty years. As IT advancement is a cooperative cycle that necessities to assemble area aptitude, mechanical abilities and interaction knowledge (Agerfalk and Fitzgerald, 2006), KM turned into an essential when the IT companies moved from the customary way to deal with the light-footed procedure.

The review is directed on National Company of Software and Services Companies (NASSCOM) - recorded IT companies in India. The NASSCOM is an exchange company of the IT and BPO industry which was set up in 1988 and according to the Indian Societies Act 1860. This company has been empowering coordinated traditions in the Indian IT industry for as far back as decade. As per (Singh et al. 2014), 73 percent of NASSCOM-recorded companies were either completely or to some extent coordinated. NASSCOM (2019) in their yearly report underlined to proceed and fortify spotlight on ability, nimbleness, execution and effect of IT development across the business as their significant point.

The whole world knowledge management is the enterprise creates different strategic and the unique superiority new way. Through the global knowledge management, may help the enterprise to be separated from the original geography boundary and the enterprise field of vision limitation, discovered customer's new demand, found the technological innovation origin, and thus produced the global first-class product and the service. In addition, can distinguish and conformity the knowledge and skill which from many place is very difficult and the cost is soaring, only then minority company which has the forward-looking judgment to be able achieve. Although its investment is much bigger than management in a place, but its repayment is also astonishing.

Integrate the global knowledge management to the enterprise strategy

Through comparison tradition transnational operations unidirectional steps and ladders' knowledge shift pattern and the global knowledge management pattern, may discover that the Indian enterprise is in passive and disadvantageous position in the former, but the Indian enterprise and other multinational corporations occupy the same position in the latter, the multinational corporation has more experience which in three stratification planes of the global knowledge management, therefore, Indian enterprise should integrate the whole world knowledge management in the enterprise strategy.

Transforms the thinking mode, utilizes the global knowledge in the management and operation

Regarding the majority Indian enterprises, thought logic usually is that hope gains other country technical transfer by our country market, is impossible to use the global knowledge on own initiative. This mainly reason is that India's majority enterprises have not "gone out" , lacks the understanding to the world market, in fact, transportation and technology of communication progress, Internet technology application, already caused the understanding information cost to be reduced greatly, moreover, along with the Indian economy

P-ISSN: 2204-1990; E-ISSN: 1323-6903
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high speed development, many enterprises has had "go out" strength and ability, is only because the vision limitation and thinking mode's barrier prevented the enterprise to step forward important one step.

Review of Literature

Lee, Shiue & Chen (2016) stated in their study that the top management should be the role model of sharing the knowledge in the organisation. However, the sharing of knowledge could be encouraged through training and providing reward schemes or resources. Top management support is a knowledge sharing enabler that increases Jordan's telecommunication firms ***(Kanaan, 2013). Sidhu et al (2007)*** emphasised that the employees would like to share their knowledge if the top management gave proper support.

Karajeh et al (2013), among Jordanian telecommunication firms' employees, it was evident that the top management support influenced knowledge sharing capability positively. According to the previous literature, there could be so many ways the top management could influence the employees to share their knowledge among themselves. Top leadership needs to have award ceremonies to appreciate the employees who willingly share their knowledge.

Lin (2007) show that top management support has a positive influence on sharing knowledge among employees. Past research conducted among academics shows no significant relationship between top management support and academic knowledge ***(Tan, 2016).*** Further, some of the previous studies that Kanaan performed have proved a significant influence between the Jordanian telecommunication industry employees' top management support and knowledge-sharing capabilities. No studies have analysed the effect of toplevel management on knowledge sharing capabilities in the Sri Lankan context.

These knowledge practices fabricate and take advantage of the association's scholarly capital actually ***(Ruckdeschel et al 1998)*** and make knowledge more noticeable all through the association. KM is the essential course of overseeing authoritative knowledge resources and resources deliberately through the cycles, for example, design, stockpiling, distribution and utilization of knowledge with the help of empowering influences like hierarchical construction, innovation, companies, individuals' capability and companies ***(Williams, et al 2000).*** Vital results, for example, hierarchical execution, development, scholarly capital and market companiesare the resolution of KM. However, the build was advocated during the mid-1990s, investigates on KMSs were critical in associations for right around thirty years.

The IT sector is described by quick evolving innovation, high work valuable open doors, key companies, worldwide business sectors, impact of network and IoT, always shifting employee necessities, course of events based undertakings and disseminated employee societies (***Majchrzak et al 2004).*** These attributes most certainly create the business exceptionally knowledge driven, and KM plays an amazing part in the development of an IT companies as it upgrades the implementation and management of the hierarchical interaction.

Apart from PKA, the board support likewise adds to KA, particularly the companies, which assume a critical part as a driver in Knowledge Management execution. ***(Ingram, P. 2013)*** proposed a progression of standards for an association to help the knowledge system design, for example, smoothing of orders, worker strengthening, accentuation on data trade (formal and casual), differentiated abilities, ceaseless input, participatory management of knowledge networks and practice. MSKA is significant in defeating boundaries, for example, worker reluctance to split knowledge, difficult credentials and deficient functional methodology. Making a decent specialized framework for KA through intranet conversation gatherings

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would be an answer for conquer the obstructions of measuring knowledge and distribution (***Nesheim, T., et al., 2011).***

Knowledge acquisition is the first step in the knowledge management process. Knowledge acquisition ability helps organizations detect the external world more rapidly in a dynamic context. It also allows them to extend the breadth and depth of available knowledge, improving their technical abilities ***(Dimovski, 2019).*** Knowledge storage was defined as procedures and systems for storing and managing information. These are frequently IT-based systems that aid in the storage and retrieval of operational knowledge ***(Ayavoo et al, 2020).*** Knowledge sharing can be considered as valuable input for innovation. It is self-evident that a company's ability to transform and use information influences its level of innovation, such as new problem-solving techniques and new products in response to market demand ***(Ben Arfi et al., 2018; Yang et al., 2018)***

Sepasgozar et al (2021) have discovered that despite technical, organizational, financial, and environmental assistance being given, construction industry practitioners are hesitant to embrace new technologies owing to behavioral aspects influenced by technology perception. As emphasized by ***Li, et al. (2019),*** in the current knowledge economy era, the construction industry has highly depended on intangible assets such as knowledge, human creativity and innovations. Further, the authors stated that existing knowledge would be replicated and exploited in perceptions in innovation decisions. Hence, knowledge impacts innovation decisions either positively or negatively

Objectives

1. To understand the impact of knowledge management on IT professionals

2. To analyze the Project Knowledge Application in the relationship ofeffective Knowledge Management in the Information Technology industry

Methodology

To conduct the current analysis, the researchers used a quantitative research approach in the form of a survey. The questionnaire was randomly distributed to 180 IT employees of various software companies. The researchers did, however, collected 165 completed questionnaires. The Likert Five Point Scale Five with the anchors being “Strongly Agree” to “Strongly Disagree” was utilized for outlining the inquiries in the survey.

Data Analysis and Interpretation

Table: 1. KMO and Bartlett's Test

KMO Measure of Sampling Adequacy.		.910
Bartlett's Test of Sphericity	Approx. Chi-Square	1398.119
	Df	88
	Sig.	.000

Table 1 shows, test is a proportion of examining sufficiency and multivariate ordinariness amongfactors. The KMO esteem in this study is .910 > 0.5 which says that the example taken is sufficient. Bartlett's Test of Sphericity esteem is .000 < 0.05, demonstrate normality among factors. Therefore, factor analysis is considered as a right method for additional examination of the information.

P-ISSN: 2204-1990; E-ISSN: 1323-6903
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Table: 2. 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	5.019	12.180	12.180	5.162	39.705	39.705	3.359	25.838	25.838
2	2.393	8.876	21.056	1.734	13.335	53.041	2.750	21.152	46.990
3	1.486	7.055	28.111	1.358	10.444	63.485	2.144	16.495	63.485
4	1.187	5.397	33.508						
5	1.130	5.136	38.861						
6	.893	4.059	42.920						
7	.852	3.871	45.791						
8	.780	3.545	48.336						
9	.703	3.195	51.531						
10	.603	2.741	54.272						
11	.513	2.331	57.603						
12	.489	2.224	59.824						
13	.474	2.153	61.9784						
Extraction Method: Principal Component Analysis.									

On the basis of Varimax Rotation with Kaiser Normalization, 3 factors have been extracted. Each factor is constituted of all those variables that have factor loadings greater than 0.5. 13 variables were clubbed into 3 factors. 3 factors were extracted from the 13 variables used in the study. These 3 extracted factors explained 63.485 per cent of the variability in knowledge management on IT professionals in the table 2.

Table 3: Rotated Component Matrix[a]

Statements	Component				
	1	2	3	4	5
We can apply our knowledge during the client negotiations.	.891				
I share ideas on knowledge application during informal meetings.	.901				
Our company gives us freedom to apply our ideas during crisis	.988				
The top management motivates us to give suggestion on generalissues	.910				
Practical knowledge has helped in negotiating with customers.		.719			
Job rotation in company help in applying knowledge in multiple areas.		.818			
Applying knowledge in projects gives me more confidence.		.871			

P-ISSN: 2204-1990; E-ISSN: 1323-6903
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Working with diverse projects gives more opportunities for knowledge application.		.899			
Effective knowledge storage			.694		
Effective knowledge creation			.797		
Effective knowledge transfer			.892		
Team Leader			.882		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 22 iterations.					

The above matrix gives the correlation of the variables with each of the extracted factors.Usually, each of the variables is highly loaded in one factor and less loaded towards the other factors. To identify the variables, included in each factor, the variable with the maximum value in each row is selected to be part of the respective factor. The values have been high lightened in each of the rows to group the 12 variables into 3 core factors excluding low loading variables.

Table 4: Determination of coefficient

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
1	.513[a]	.089	.094	0.007	1.898

a. Predictors: (Constant), Management Support for Knowledge Application.

b. Dependent Variable: Project Knowledge Application.

In table 4 indicates that positive correlation between effect of Management Support for Knowledge Application and Project Knowledge Application in IT industry. The determination of coefficient states that 89.0% of project knowledge application in IT industry is affected by the Management Support for Knowledge Application.

Table 5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.269	5	22.041	39.013	.000[b]
	Residual	312.603	215	2.196		
	Total	330.872	330			

Dependent Variable: Project Knowledge Application
Predictors: (Constant), Management Support for Knowledge Application

Table 5 shows, the Analysis of Variance (ANOVA). The p-esteem is 0.000 which is < 0.05 demonstrates that the model is measurably critical in foreseeing what Management Support for Knowledge Application

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DOI: 10.47750/cibg.2022.28.04.068

means for Project Knowledge Application in the IT business. The outcomes likewise demonstrate that the free factors are indicators of the dependent variable

Conclusion

The knowledge living in the company as individuals, rotations and applies is measured as the essential resource that increases the value of the individual and hierarchical results. This is especially more essential to IT companies' as they are profoundly knowledge driven. The product business was an initial adopter of KM, and adequate investigates have additionally been done on KM in IT for the beyond twenty years. This study which is conducted in a highly knowledge-centric software industry explored the various components of Knowledge Management processes in details and their effectiveness. Present study investigated the impact of management support for knowledge application on project knowledge application and project knowledge application on effective knowledge management. Management support for knowledge application is significantly impacting project knowledge application and project knowledge application is also significantlyimpacting on effective knowledge management in the Information Technology Industry.

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Journal of Contemporary Issues in Business and Government Vol. 28, No. 04, 2022
https://cibgp.com/

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2022.28.04.068

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