

# Knowledge Management Systems and Its Functioning in Software Industry

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## Abstract

In the software industry, where knowledge and expertise are essential assets, Knowledge Management Systems (KMS) play a crucial role. KMS work with sharing information across groups and divisions. Coding, testing, and documentation are just a few of the many tasks involved in software development. Knowledge generated during these processes can be captured thanks to KMS. This paper describes how KMS works in the software industry..

**Keywords:** Knowledge, Knowledge Management System.

## Introduction

The quest for social event data, transforming it into information, dispersing information, and effectively applying information is definitely not a clever undertaking. Since the beginning of human thought, this method of transferring information has existed. Numerous earlier thinkers endeavored to distinguish and fathom the idea of information as well as to reveal the elements hidden different life's happenings. The approaches these thinkers took in their pursuit of knowledge continue to serve as the guiding principles for both applied and fundamental research. Authoritative learning, upgraded execution, upper hand, development, process joining, and progressing hierarchical improvement are the primary objectives of Information The board (KM) endeavors. (Davenport, 2000)

## Knowledge:

The idea of knowledge is one of philosophy's most important concepts. Information, truth, derivation, skill, figuring out, thinking, etc (Khataniar, 2018).

Seeing information as a significant authoritative asset is building up some momentum. In line with the interest in organizational knowledge and knowledge management, academics in information science (IS) have begun to promote a class of information systems known as knowledge management systems (Alavi & Leidner, 2001).

With the guide of information age, sharing, assimilation, and advancement, compelling information assets empower organizations to have information skill (Li et, 2020).

## Knowledge Management Systems

An organization's ability to function effectively and survive in a political, social, technological, and economic landscape that is constantly changing is dependent on its capacity to manage knowledge. Information the executives frameworks should offer help for the execution of information the board inside organizations for it to find success (Mouna Ben Chouikha Zouari, 2018).

Authoritative information the executives techniques can be robotized with the utilization of information the board frameworks. According to Riswanto & I (2021): "These systems make it easier for knowledge to be found, captured, shared, and used within an organization."

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### **Kms In Software Industry**

Knowledge management has been a strategic focus for the past two decades in the software industry, which is highly knowledge-centric in terms of technology, process, and people (Rathore, 2011). The organization's people, processes, and practices—its knowledge—are regarded as the organization's strategic asset, adding value to both individual and organizational outcomes. Because software companies are heavily dependent on knowledge, this is even more critical (Agerfalk, 2006). Organizations' development and upkeep of information systems (IS) rely heavily on knowledge management (KM). Software consulting firms benefit greatly from knowledge management (KM) because they are able to apply knowledge gained from previous projects to the completion of subsequent projects. According to Conradi (2000), software development firms have the ability to organize and make use of prior experience to facilitate learning at the individual and organizational levels.

### **Literature Review**

A knowledge management system is made up of four interdependent parts: technology, the method of managing knowledge, people, and the organizational context. Innovation is the term used to depict IT-based information the board arrangements that help authoritative entertainers in playing out the assignments remembered for the information the executives cycle (Mouna Ben and Salem Ben, 2018).

Project information plays a more grounded part than the board support, organizations ought to reinforce their administration support culture. By encouraging an air of straightforwardness, collaboration, and advancement and further developing flexibility to evolving conditions, the elements of information application enhance individuals and cycles in programming organizations and empower them to receive the benefits of lean-light-footed programming and framework improvements at scale (Valacherry, 2020). According to Blumentritt and Johnston (1999), the terms "data," "information," and "knowledge" are so closely related that they cannot be used interchangeably.

The facts that have not been processed, organized, or analyzed are referred to as "data." Most of the time, data is meaningless and doesn't help managers or decision-makers much. Since data has not been processed, it can be treated in a variety of ways based on the requirements of the user.

**Information** refers to data that has been altered and processed in accordance with the needs of users. Therefore, if the context is different, a single data content may produce distinct information contents (Klicon, 1999).

**Knowledge** is the most helpful for decision making since it has more than information and data. Since information contains something beyond information and data, it is the most important instrument for simply deciding. Data comprises of organized realities, while information comprises of mentalities, convictions, perspectives, decisions, and skill (Blumentritt and Johnston, 1999). Information joins data with encounters to show techniques and methodology utilized by others, which can be reused in the future to take care of comparative issues.

Comprehension of "general bits of insight," central regulations, or examples is reflected in astuteness. It is knowledge that is founded on moral principles, ideological frameworks, and the realization that life is erratic, full of uncertainty, and that clarity is not always possible. Wisdom is defined by the appropriate use of information.

### **Respondents Profile**

The examination is done with an Example of 300 representatives from the Product Organizations situated in Chennai. The Example incorporated all degrees of workers from high level to base level. Interview strategy is utilized to gather all the data that is expected for the review.

<b>Determinant</b>		<b>Frequency</b>	<b>Per cent</b>
Gender	Male	178	59.33
	Female	122	40.67
	Software Engineer	151	50.33

Designation	Senior Software Engineer	87	29
	Team Lead	37	12.33
	Project Manager	25	8.34
Industry Experience	Less than 5 years	87	29
	5 to 10 years	144	48
	Greater than 10 years	71	23
Experience in the company	Less than 5 years	188	62.67
	5 to 10 years	86	28.67
	Greater than 10 years	26	8.66

**Kms And Its Functioning In Software Industry**

The Information The board Framework works with the acquisition and utilization of assets to lay out an environment. People have access to information, which they can use to gather, share, and put into practice to expand their own knowledge. It is permitted and encouraged for employees to utilize their expertise for the benefit of the business.

**Time Taken To Get Relevant Knowledge**

When projects are completed within the allotted time, the company's productivity increases. For this, the accessibility of required information for finishing it becomes vital. The table underneath shows what amount of time it requires for a representative to get the important information to take care of their everyday responsibilities in the association. In Programming Industry the greatest test is finishing the responsibility inside the specified time. To keep away from time on reuse and utilizing the KMS actually, representatives need important information for finishing their undertakings. This section examines the time required to acquire relevant knowledge based on gender, designation, experience within the company, and industry experience.

**Time Taken to get relevant knowledge and Designation**

Designation	Time Taken				Total	Chi Square Value
	Few minutes	Few Hours	Few Days	Week or More		
SE	6	21	98	26	151	55.095 (d.f 9) (p=0.000)
SSE	8	23	49	7	87	
TL	5	14	9	9	37	
PM	7	12	3	3	25	
Total	26	70	159	45	300	

S.E -Software Engineer: SSE – Senior Software Engineer: TL – Team Lead: PM – Project Manager

The table indicates that the alternate hypothesis is accepted and the null hypothesis is rejected based on the employee's time spent to obtain the necessary information for their daily work and their designation level, with a chi-square value of 55.095 (d.f 9) (p=0.000). The amount of time it takes an employee to acquire the necessary information to carry out their daily tasks and their position within the organization are significantly correlated.

**Technologies Available In The Organization For Implementing Kms**

Different technologies are used by organizations to install KMS. Frequently used technologies are listed, along with information on how the technology is being used in the organization to accomplish knowledge management.

**Technologies Available**

<b>Technology</b>	<b>Frequency</b>	<b>Per cent</b>
Internet	203	67.7
Intranet	235	78.3
Extranet	65	21.7
Groupware	57	19.0
WWW server	89	29.7
Data Warehousing Hardware	25	8.3
Self Designed KM software	25	8.3
Data Mining tool/software/Knowledge	60	20.0
Total	300	100

It can be deduced from the above table that 78.3% of respondents install KMS via intranet, while 67.7% use the internet. WWW Server is used by 29.7% of organizations to install KMS. Twenty percent of respondents employ data mining software, tools, or knowledge, and twenty percent use extranets to deploy KMS in their organizations. Nineteen percent of the respondents employ groupware, and eight three percent use self-designed knowledge management software and data warehousing hardware to deploy KMS in their organizations. As is well known, the majority of respondents use intranets, but only a small percentage of businesses use self-designed knowledge management software.

**Details Available In The Knowledge Management System**

KMS holds details about the employees and the projects in the organization. The details, the organization retain in the KMS.

**Details on KMS**

<b>Details</b>	<b>Frequency</b>	<b>Per cent</b>
Designation	297	99
Name of the Employee	297	99
Employee Identification Number	291	97
Experience	276	92
Skill Sets	276	92
Place	275	91.7
Time and Date	270	90
Contact Details	261	87
Expertise	258	86
Project Name	252	84

Certification	245	81.7
Training undergone	242	80.7
Awards	230	76.7
Client Name	216	72
Knowledge updated	204	68
Copyright details	202	67.3
Knowledge Officer	201	67
Knowledge tapped	177	59

99 percent of respondents indicated that KMS contains information on the employee's name and designation, followed by 97 percent on the employee identification number, 92 percent on experience and skill sets, 91.7% on location, 90.7% on time and date, 86 percent on expertise, 84 percent on project name, 86.7% on trainings completed, 76.7% on awards, and 72 percent on client name. Of the respondents, 68% said that KMS maintains up-to-date information on knowledge, 67.3 percent said that copyright details are available, and 67% said that knowledge officers are available.

**Knowledge Update - Frequency**

KMS is updated in the Organization on a regular basis. Frequency of updation depends on the employees and their organization.

**Knowledge update**

Frequency	Frequency	Per cent
Weekly	82	27.3
Monthly	113	37.7
Quarterly	85	28.3
Yearly	20	6.7
Total	300	100

The data indicates that 37.7% of the participants indicated that their organization updates its KMS monthly, followed by 28.3% who said that updates occur quarterly, 27.3% who said updates occur weekly, and 6.7% who said notifications occur monthly. It is acknowledged that around 73% of the knowledge is not updated every week. This needs to be fixed so that workers can acquire the important knowledge they need to finish the job when it's needed.

**Conclusion:**

Storing knowledge is important for organization for their present and future works to be handled. The basic reason for storing them varies from company to company. Based on their experience level, the understanding of employees on how knowledge is stored in the organization may vary. Knowledge Management Systems are indispensable tools in the software industry, enabling organizations to leverage their collective intelligence, improve productivity, and deliver high-quality software products and services.

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