



Exploring Knowledge Management Practices and Implementation Barriers in Sri Lankan IT Projects

Jayasuriya D.R.N.^{1*} , Razi, M.J.M.¹ , Thilakerathne, P.M.C.¹ 

¹University of Kelaniya, Sri Lanka

*Corresponding Author: jayasuriyanaleen@gmail.com

ABSTRACT

Knowledge is a critical asset in an organization. IT projects are purely knowledge base projects. It is important to practicing knowledge management within IT projects to capture, store and review knowledge created while doing the project. The level of Knowledge Management parties within IT projects is unknown and what are the barriers to implement knowledge management within the IT projects is known in Sri Lanka. Further what are the prerequisite need to establish to make the successful knowledge management within IT projects is unknown in Sri Lanka. A qualitative research approach uses in this research and data collected using structured interviews from 15 IT project managers. The data collected from completed IT projects in telecommunication industry. The code matching method use to analyze the data. The results reveal that the level of knowledge management practicing within IT projects is low. Further main barriers to implement knowledge management are, limitation of time, additional resources required for knowledge management activities, project culture, lack of leadership and project organization. When considering the prerequisites to implement knowledge management within IT project environment, it is revealed that designate a knowledge managers role in IT project organization and assign responsibility to capture and manage the knowledge will support to successful knowledge management within IT projects. Further it reveals that when removing barriers to implement knowledge management practices and implementing prerequisites will increase the level of project knowledge management practices within IT projects, at the same time it affected the project cost and project timelines. Hence when addressing the barriers to implement knowledge management and addressing prerequisites, project managers need to mindful not to compromise the project management performance.

Keywords: Barriers to Knowledge Management, Level of Knowledge Management, Prerequisites for Knowledge Management, Qualitative Approach.



Received: 19.09.2024, Accepted revised version: 02.12.2024

INTRODUCTION

Background

Globalization and market competitiveness create the need, in modern organizations, to adapt their internal policies and procedures, to this, new Era called Knowledge Economy. Organizations are now focused on understanding and managing the knowledge of people so they can increase their competitiveness in the markets. (Pereira, Santos, Dias and Costa, 2021). In line to this argument, (Kariyapperuma, 2015) stated that, the world is moving fast from a production-based economy towards a knowledge-based one. Further he argued that, as a result, organizations are becoming more knowledge intensive and are increasingly dependent on innovative knowledge to create value.

Further, organizations are increasingly leveraging Information Technology (IT) as an essential tool for facilitating innovation and driving strategic change. McKinsey's State of Organizations 2023 highlights that as digital transformation reshapes the workplace.

Insight's 2023 survey points out that many IT leaders are now prioritizing robust digital transformations that include not only IT infrastructure upgrades but also strategic planning and security investments. This approach aligns IT initiatives closely with business objectives, creating systems that evolve with technological advancements and maximize the potential for long-term success.

"Project-based approaches are frequently adopted to implement information and communications technology (ICT) initiatives, enabling structured development, resource allocation, and goal setting within organizations" (Cadle and Yeates, 2008; Schindler and Eppler, 2003).

Organizational performance is enhanced when projects are completed successfully, hence, it is important managers understand project success correctly. Yet there is little agreement in the literature or in practice on evaluating project success (Meredith and Zwikael, 2019).

According to Reich et al. (2012) and subsequent analyses, a knowledge-alignment

model emphasizes that although IT projects aim to meet technical, organizational, and business outcomes, performance remains low when these areas are not cohesively managed. Furthermore, McManus and Wood-Harper (2007) highlight that IT projects frequently fall short of scope, budget, and schedule goals, underscoring the complexity and "elusive" nature of achieving satisfactory project outcomes in this field.

Despite the recognition gained by Sri Lanka for its IT capabilities, the problem besetting the industry is the low completion rate of IT projects which is bound to impact adversely on industry progress. (Fonseka, 2010). There are many reasons for failure of IT projects. While these causes of failure are quite common in IT projects, the largest stumbling block in IT projects, and one of the largest and most unrecognized reasons for failure, is the lack of proper knowledge management methodologies throughout the project management lifecycle (Brown, 2009).

Zheng, (2017) stated that Knowledge is the organization's most important strategic resource that can provide organizations with a sustainable competitive advantage.

Knowledge Management is viewed through the lens of knowledge creation, where organizations focus on converting tacit knowledge (personal, hard to formalize) into explicit knowledge (codified, transferable) and vice versa, using models like the SECI (Socialization, Externalization, Combination, Internalization) framework. (Nonaka and Takeuchi, 1995).

Knowledge management had positive relationship with implementation of projects. Langat and Kimutai, (2023). IT projects focus on knowledge yields new insights because IT projects are primarily knowledge work (Reich, Gemino and Saucer, 2012). Software companies in worldwide face issues such as continuous rework, increased development time and decreased productivity which lead to failed projects due to inefficient and ineffective knowledge management (Ahmed, Mansor, and Ahmad, (2017)

KM has become a useful tool for survival within this competitive global arena.

However, successful KM implementation should be informed by specific organizational objectives rather than a must-have initiative based on the popularity of KM as a concept. (Arthur, 2013). Companies should be aware that most knowledge-management initiatives in project-based firms have failed for a variety of reasons, which could be technological, cultural, knowledge content and project management reasons (Chua and Lam, 2005).

The article is structured on the following lines. It begins with a description of the research problem and a review of the literature relevant to the problem. This is followed by the conceptual framework and the study design. The data gathered during the field study are presented next, followed by the study findings and a discussion of the findings. The final section contains the conclusions of the study.

Problem Statement

A study on knowledge creation in IT projects emphasizes that knowledge management contributes to project effectiveness, as IT projects often serve as a medium for learning and innovation rather than simply a technical task.

IT projects are increasingly recognized as primarily knowledge-based due to their reliance on specialized expertise, constant innovation, and the dynamic creation of new knowledge throughout their lifecycle. Recent studies emphasize how digital technologies facilitate knowledge creation and sharing, particularly in project settings. Berznoy, Meissner and Scuotto, (2023) highlight how emerging digital strategies intertwine knowledge processes, creating environments that dynamically foster knowledge sharing and innovation within IT projects. Additionally, the increasing velocity of knowledge—where new insights emerge rapidly—drives the need for IT projects to continually evolve, enabling them to address emerging demands and complexities effectively.

It is required to practice knowledge management within the IT projects to capture and use this new knowledge. Since there is a

relationship between IT project success and Knowledge management, it is required to identify the level of knowledge management practice in IT projects and what are the barriers to implement knowledge management in an organization.

Also, what are the prerequisites to make the knowledge management implementation a success.

Research Objectives

In order to answer the said research problem three (03) main objectives of the study were set. By conducting the research, researcher expected to

1. To determine the level of knowledge management practice within IT projects in Sri Lanka.
2. To identify what are the barriers to implement project knowledge management within IT projects.
3. To identify what are the prerequisites to implement successful project knowledge management within IT projects.

LITERATURE REVIEW

Knowledge Management

There are many reasons for failure of IT projects. (McManus and Wood-Harper ,2007). One of the main reasons for IT project failure is the lack of Knowledge Management within IT projects. (Brown, 2009).

Knowledge management can be defined as use of information and communication technology to manage the work of the employees of the organization, or the establishment of a corporate culture focusing on promoting social processes shared between individuals, aiming to achieve a sustainable source of advantages (Ouriques, et al., 2019).

Project Knowledge management

The Knowledge management (KM) and project management (PM) are two technics that provide competitive advantages within IT industry. (Jayasena and Jayasekara, 2017). Yeong, (2010), stated that it is important to understand how knowledge could be created

via projects and how the knowledge is transferred to other project team members in the form of tacit and explicit knowledge. Tilakaratne and Abegunawardhne (2016) stated that it is essential to get the right knowledge to the right people at right time in IT projects. Langat and Kimutai, (2023); Yeong, (2010) stated that there is a positive relationship between knowledge management and successful implementation of a project. Similar argument made by Ahmed, et al., (2017) that most of the rework of projects and increase development time led to IT project failure due to ineffective knowledge management in project environment. This gap needs to be filled by proper project knowledge management. (Jayasena and Jayasekara, 2017). In line to this statement, Barclay (2010) stated that the effective project knowledge management is one strategy to improve project success in IT projects.

The effective Knowledge Management (KM) in projects environment affected by different factors. Such as available resources, KM tools, leadership, organizational culture, and project objectives and goals among others. (Alqudah and Shaalan, 2016).

Further, Alqudah and Shaalan, (2016) identified, five main stages in Project Knowledge Management Life Cycle. Such as, the knowledge creation, knowledge storage, knowledge dissemination, knowledge learning, and knowledge improvement. As per them, each phase is essential towards the attainment of overall efficiency in the integration of KM into projects.

Further Yeong, (2010), stated that, the common factors that affect both project and knowledge management are culture, process and technology.

Level of Project Knowledge Management Practice

Presently, in the IT project environment project practice the knowledge management in different levels. (Terzievaa ,2014). Some Knowledge management practices are such that, after action reviews, project status reviews, project postmortems etc. (Terzievaa,

2014).

Even there is a relationship between knowledge management practice and project success, literature reveal the knowledge management practice with IT projects at moderate level (Yusof, et al., 2019); Jayasuriya, 2018).

Contradicting to the above argument, some research found that still projects are not use knowledge management practices. (Pereira, et al., 2021). Further, it is found that knowledge transfer among employees within the Organization (Share), and the evaluation of the value or benefit of the knowledge transferred (Evaluation), are not being practised. (Pereira, et al., 2021).

Hence it is required to identify the level of project knowledge management practice with IT projects in Sri Lanka.

Barriers to implement project knowledge management

Scholars identified some barriers that affected to implement the knowledge management in IT projects environment. Main challenges are;

Handling business coach exit, (Karapetyan and Otieno, (2010); Communicating lessons learned, (Karapetyan and Otieno, (2010); Creating knowledge map, (Karapetyan and Otieno, (2010); Jayasuriya (2018); Establishing knowledge network, (Karapetyan and Otieno, (2010); Selecting appropriate team, (Karapetyan and Otieno, (2010) Storing knowledge from previous projects, (Karapetyan and Otieno, (2010);

Korkmaz and Bahidrah (2018); Organization culture (Arthur, 2013; Yapa, 2019); Poor and/or inadequate technology infrastructure' (Arthur, 2013); lack of time (Arthur, 2013; Jayasuriya 2018); Integrating different expertise (Karapetyan and Otieno, 2010); Transferring complete knowledge. (Karapetyan and Otieno, (2010); More focus on project delivery (Jayasuriya (2018); Complexity of projects constitutes the main obstacle blocking firms from utilizing knowledge in new settings (Korkmaz and Bahidrah, 2018).

It is required to identify the barriers affected

knowledge management in IT project environment in Sri Lanka.

Prerequisite to success of Project Knowledge Management

Scholars identified different prerequisite to successful implementation of project knowledge management. Such as Culture to effective knowledge sharing (Apostolou, Mentzas, and Sakkas, 1999; Kariapperuma, 2015; Pereira, et al., 2021; Priyangika and Perera, 2021), Project organization (Apostolou et al., 1999; Kariapperuma, 2015; Pereira, et al., 2021; Basnayake,

2016, Priyangika and Perera, 2021), Leadership to drive the Knowledge management (Alqudah and Shaalan, 2016; Priyangika and Perera, 2021; Basnayake, 2016), Knowledge base incentive program (Alqudah and Shaalan, 2016), Technology infrastructure (Priyangika and Perera, 2021), Knowledge Management Measurements (Priyangika and Perera, 2021), Top management support (Dissanayake and Senathiraja, 2021).

It is required to identify the prerequisite to successful implementation of knowledge management with IT projects.

RESEARCH METHODOLOGY

Introduction

The part discusses the research design, available research approaches, strategies, methods and data analysis techniques.

Furthermore, this section includes the relevant justification for each selected criterion.

Research Approaches

Research approaches have been described by Creswell (2014) as a plan and procedure to do the research which would take research from a more efficient way to details methods of data collections, analysis, and interpretation. Where Creswell (2014) stated that Qualitative studies basically deal with words. Qualitative studies help to answer the “why” and “how” questions (Rajasekar, Philominaathan, and Chinnathambi, 2013). On the other hand, qualitative approach

provides personal perspectives and experience-based answers (Hammarberg, Kirkman, and de Lacey, 2016). Most of the time in-depth investigation studies have used the qualitative approach. When considering the research questions, where it related to provide answer for “what” questions and in-depth personal perspective, qualitative research approach is the most suitable research approach.

Research method

Research methods are the tools to give correct answers for the questions (Walliman, 2011). The structured interview selected as a tool for this research. The structured interviews can be described as a set of predetermined questions used to administer the questionnaire directly through verbal communication modes with very few or zero variations and no further elaboration or follow-up question scope. Structured interviews use a fixed set of questions, ensuring that all participants respond to the same inquiries in the same order. This enhances the comparability of data, making it easier to identify trends and patterns across responses (Bryman, 2016). Further using structural Interview, it minimizes the biasness. Due to this reason structured interview method selected as a tool for this research.

The Phenomenology is use as the research methodology based on the nature of the research questions.

Data collection and Analysis

As per the Creswell, (2013) when using Phenomenology as research methodology the sample size use 10 to 15 participant. Hence sample size of 15 person considers for the data collection. The heterogeneous purposive sampling method was used to select the sample. Participants for the interviews were selected based on IT projects completed in telecommunication domain within last one year period. Interviewers were the project managers of these IT projects. These fifteen (15) projects managers represent both the telecommunication service providers as well as system integrators.

All participants were provided a clear

information about the research purpose, process, and how the data will be used. Further, ensure that the participants understand their involvement is voluntary basis for this research. The findings which hold different opinions and perceptions of project knowledge management with managing cost, scope and time of the project were analyzed using the content analysis. Content analysis provides a structured way to analyze unstructured qualitative data. By systematically categorizing data into themes or patterns, researchers can draw meaningful insights without oversimplifying complex information (Krippendorff, 2018). The respondents were interviewed face to face within approximately 60 – 90 minutes.

Validity and Reliability

The interview questions were well defined in order to validate the interview data. (Krippendorff, 2018). Regularly revisit and refine coding categories as the analysis progresses, to maintain the data reliability.

Results and Discussion

This is going to be elaborate different findings obtained over structured interviews conducted in order to collect required research data. For the analysis of interview data, it is used pattern matching method.

Respondents' details for interviews

In that research fifteen (15) interviews were carried out successfully according to the structured interview guidelines. All the interviews were conducted with the IT project managers in telecom industry projects. As this research carried out in IT project success with project knowledge management, the sample of the experts was a heterogeneous purposive sampling, which helped to select those with experience and knowledge in the research area, in different contexts and different age groups. The interview respondents, who had to have more than 5 years projects in telecom industry implemented in Sri Lanka. The sample selected includes participants from different age categories. Hence it was possible to get ideas based on their different

Importantly, selected sample contended

with different level of industry practices related to success. Following table 4.1 illustrates the profile of the respective interviewees.

What is the level of knowledge management practice within IT projects?

Half of the respondent mentioned that project knowledge management does not practice presently. Respondent I7, I9, I10, I11, I12 and I14 said that they use at lower level. Respondent I8 and I15 said that they use the project knowledge management in their projects.

I1 respond that only the lesson learns documenting and no further usage of those lesson learns. Respondent I1, I2, I7, I10, I14 and I15 said that they presently practice lesson learn logs in their projects.

Respondents I3, I6, I7, I8, I10, I11 and I15 said that they have practice knowledge share between business team and technical team. Respondent I3, I11, I14 and I15 said that they have maintain the project meeting minutes where it captures the critical decision taken during the project. I9 stated that some of the knowledge capture during the project.

I6 response that if new person assigned to the project, previous project knowledge transfer to him for easy understand the customer requirements.

I13 stated that, effective project knowledge management in implementing a project will involve documenting system configurations, documenting system requirements, documenting solution, testing results for future reference and improvement, etc.

I3 specifically said that, since the project took almost over three years some trained team members promoted, and some were transfer for other division. That make a loss to the project. Further he said that it is an additional cost to maintain logs. But he thinks that it will be an investment.

When considering the response, it reveals that only half of the respondents stated that they use knowledge management within their projects. Hence the project knowledge management practice averagely at low level in Sri Lankan IT projects. Where literature review

identified similarity that some projects use knowledge management, some project moderately use knowledge management, and some project does not use project knowledge management at all. Further, response reveals that knowledge sharing practicing within IT projects at different level as knowledge management method. Lesson learns logs, project meeting minutes are practicing within some projects.

What is the level of knowledge management practice within IT projects?

Half of the respondent mentioned that project knowledge management does not practice presently. Respondent I7, I9, I10, I11, I12 and I14 said that they use at lower level. Respondent I8 and I15 said that they use the project knowledge management in their projects.

I1 respond that only the lesson learns documenting and no further usage of those lesson learns. Respondent I1, I2, I7, I10, I14 and I15 said that they presently practice lesson learn logs in their projects.

Respondents I3, I6, I7, I8, I10, I11 and I15 said that they have practice knowledge share between business team and technical team. Respondent I3, I11, I14 and I15 said that they have maintain the project meeting minutes where it captures the critical decision taken during the project. I9 stated that some of the knowledge capture during the project.

I6 response that if new person assigned to the project, previous project knowledge transfer to him for easy understand the customer requirements.

I13 stated that, effective project knowledge management in implementing a project will involve documenting system configurations, documenting system requirements, documenting solution, testing results for future reference and improvement, etc.

I3 specifically said that, since the project took almost over three years some trained team members promoted, and some were transfer for other division. That make a loss to the project. Further he said that it is an additional cost to maintain logs. But he thinks

that it will be an investment.

When considering the response, it reveal that only half of the respondents stated that they use knowledge management within their projects. Hence the project knowledge management practice averagely at low level in Sri Lankan IT projects. Where literature review identified similarity that some projects use knowledge management, some project moderately use knowledge management, and some project does not use project knowledge management at all. Further, response reveals that knowledge sharing practicing within IT projects at different level as knowledge management method. Lesson learns logs, project meeting minutes are practicing within some projects.

What is the impact of not practicing project knowledge management and barriers to implement project knowledge management?

Majority of respondent said that new knowledge does not capture during the project affected to operation of the system. Respondent I3, I6, I10, I11 and I15 said that it will ease the operation when capture the knowledge during project period. I12 stated that when similar project going to implement, similar effort needs to be done to complete the project.

I9 specifically stated that, lack of practice in project knowledge management will lead to, inefficient decision-making, reduced productivity, limited innovation, and poor risk management.

Table 1: Demographic Information

Code	Designation	Experience (No. of Years of)	Type of Organi- zation	Key Expertise Areas re- lated
I1.	CIO	30 Years	Operator	• Project manager • Project sponsor
I2.	Senior Engineer	12 Years	Operator	• Project manager
I3.	General Manager	25 Years	Operator	• Project Manager • Project sponsor
I4.	Project Manager	10 Years	System Integrator	• Project Manager • Software Developer
I5.	Project Manager	20 Years	System Integrator	• Software Developer • Project Manager
I6.	Project director	25 Years	System Integrator	• Project Manager • Project sponsor
I7.	Deputy General Manager	15 Years	Operator	• Project Manager • Software developer
I8.	Project Manager	8 years	Operator	• Project manager • Software developer
I9.	Project Manager	8 Years	System Integrator	• Project Manager
I10	Project Manager	5 Years	System Integrator	• Project Manager
I11	System Engineer	14 Years	Operator	• Project Manager • System Integrator
I12	Project Manager	5 Years	Operator	• Project Manager
I13	Project Manager	5 Years	System devel- oper	• Project Manager • Software developer
I14	Deputy General	14 Years	Operator	• Project manager

When considering the barriers to project knowledge management, some respondents said that due to additional time required for maintain documenting the knowledge develop during the project time, they were not capturing the project knowledge. Respondent I6, I7, I8, I9, I10, I13 and I15 mentioned that they need additional time and resources to document the knowledge. Due to that they were not practice the project knowledge management. In line to the response, I8, I10, I11 and I15 said that due to project time limitation, they cannot capture the project knowledge. Respondent I9, I11 and I13 said that due to project cultural issues it is difficult to practice the project knowledge management. Respondent I9, I11 and I13 said that lack of leadership and organization structure also are barriers for the project knowledge practice. Responder I2 said that not given proper priority for knowledge management where more technical problem had to resolve during the project. Further due to system integrator had to change during the project highly affect to the project implementation where at the beginning of the project he gains certain knowledge about the company requirements, company process knowledge lost after he left the project. Respondent I6, I7, I8 and I15 said that project members reluctant to document the knowledge and experience is another barrier for project knowledge management.

I3 response that, company should have a policy to not allow transfer staff to transfer before completion of the project. It is required additional resources to log all the activities and lessons during project period and additional resources will cost to the project.

I6 mentioned that keeping knowledge capturing make ease the operational team life. Further he mentioned that another barrier for knowledge management is that most of the time staff assigned for assignment basis hence there is no permanent nature of their jobs and they move one company to another company within short period. Hence there is no requirement for them to log the new knowledge.

I7 responded that the lack of understanding about the knowledge management and poor awareness about the advantages that company can gain by knowledge management is another case. I15 response that there are several advantages with maintain project.

knowledge management where it will be useful for the system maintain purpose.

The results indicated that poor project knowledge management leads to recurrent failures in projects. I12 stated that when similar project going to implement, similar effort needs to be done to complete the project. This is in line with the literature where (Ahmed, et al., (2017) stated that most of the rework of projects and increase development time led to IT project failure due to ineffective knowledge management in project environment. Further literature identified a relationship between project knowledge management, and project success (. Langat and Kimutai, (2023); Yeong, (2010).

Further I9 specifically stated that, lack of practice in project knowledge management will lead to, inefficient decision-making, reduced productivity, limited innovation, and poor risk management. This is prove by the literature where non practicing knowledge management increase the

Some respondents said that due to additional time required for maintain documenting the knowledge develop during the project time, they were not capturing the project knowledge. This is in line with the literature finding that time limitation is a barrier to implement knowledge management. Arthur, (2013); Jayasuriya (2018).

Some responders identified the culture as a barrier for implementation of knowledge management. This too captured in literature, where culture identified as a barrier to implement knowledge management. (Arthur, 2013; Yapa, 2019).

Some responders identified leadership and organization structure as a barrier to implement knowledge management. Where literature did not identify the leadership as a barrier to implement knowledge management.

Respondents identified more focus on project technical components and not priority to implement knowledge management. This is inline with literature finding. Where literature identified that more focus on project deliverable as a barrier to implement knowledge management (Jayasuriya, 2018).

Further respondents identified that lack of awareness about knowledge management as a barrier to implement knowledge management. In line to this response, literature find that communication of lesson learn (Karapetyan and Otieno, 2010) and developing knowledge maps (Karapetyan and Otieno, 2010; Jayasuriya, 2018) as barrier to implement knowledge management.

Another barrier that respondents identified is the knowledge loss during the project when project member leave from project team. This is similar to the findings of literature where, integrating different expertise (Karapetyan and Otieno, (2010) and transferring complete knowledge (Karapetyan and Otieno, (2010).

What are the prerequisites to implement successful project knowledge management within IT projects?

I7 response that Management should provide some mechanism to reward the staff who willing to share their knowledge. I9 response that designating a knowledge management lead or team responsible for capturing and organizing project information. Further I4. Conduct regular knowledge-sharing sessions and post-implementation reviews to learn from each deployment.

I11 Identify the critical knowledge and implementing the processes to follow the knowledge repositories, documentation and sharing.

I12 Designating a knowledge management lead or team responsible for capturing and organizing project information.

I12 Conduct regular knowledge-sharing sessions and post-implementation reviews to learn from each deployment.

I13 1. Designating a knowledge management lead or team responsible for capturing

and organizing project information. 4. Conduct regular knowledge-sharing sessions and post- implementation reviews to learn from each deployment.

When compare the response with literature findings, Alqudah and Shaalan, (2016) identified the Knowledge base incentive program. Responders also identified the establishment of knowledge base incentive scheme as a prerequisite.

Literature identified, leadership to drive the Knowledge management (Alqudah and Shaalan, (2016); Priyangika and Perera, 2021; Basnayake, 2016). In line to this, respondents identified that leadership required to drive the capturing knowledge.

Literature review identified that, Technology infrastructure (Priyangika and Perera, 2021) as a prerequisite to successful implementation of project knowledge management. In line to these responders identified that requirement of proper knowledge management system.

Literature review identified that culture and organization structure as prerequisites for successful implementation of project knowledge management. But responders did not identify those factors as prerequisite for successful implementation of project knowledge management. Further designating a project knowledge manager role within a project organization is a new prerequisite that identify this research. Where it needs to be responsible for knowledge capturing during the project duration.

CONCLUSION

The results reveal the lower level of practice of knowledge management within IT projects in telecommunication industry in Sri Lanka. Further barriers to implement the knowledge management identified as short period of time, lack of awareness about knowledge management, project structure and poor leadership. The prerequisites to successful implementation of knowledge management include paying incentives for knowledge sharing, leadership to drive and encourage knowledge management practices within IT

projects.

When removing some barriers will add extra cost to the project or add additional time to project timeline. Such as add more resources to capture, and management knowledge will increase the knowledge management practices within the IT projects and same time it will add additional cost to project. If try to capture new knowledge without add any resources will affect the project timeline. When add new role to project structure it will increase project knowledge management as well as add additional cost to project. Hence removing barriers to knowledge management will increase the knowledge management and at the same time affect the project management.

Similarly, when addressing prerequisites such as provide incentives for knowledge sharing, will increase the knowledge management and at the same time it affects the project cost. Hence when addressing prerequisite to knowledge management affect the project management.

Further increase the knowledge management practices gain most of the benefits in long run where it supports to improve the success rate of future projects. But considering the additional time required and additional cost require for the knowledge management activities directly impact to the ongoing projects. This may be a reason that project managers not highly supportive to implement the knowledge management activities.

Another main barrier of implementing a knowledge management is the project culture. Due to short period of time, it is not easy to change the project culture within short period. If the project team built with experience person who implemented project knowledge management, then it is much ease to implement knowledge management activities. Otherwise, it is required to have awareness sessions to practice the knowledge management activities. This increases the lower level of practicing knowledge management within IT projects as well as affect the project cost and timeline.

Hence by addressing barriers to implement

knowledge management and addressing prerequisite to knowledge management will increase the level of knowledge management from lower level to higher level, at the same time it negatively affects the project management performance in IT projects. Therefore, project managers need to careful when increasing the level of knowledge management without compromising the project management performance.

A designation of knowledge manager within the project organization is a new prerequisite identify from this research.

REFERENCES

- Ahmed, Z., Mansor, Z., and Ahmad, K. (2017). An analysis of knowledge management challenges in agile global software development. *Journal of Telecommunication, Electronic and Computer Engineering (JTEC)*, 9(3-4), 63-66.
- Apostolou, D., Mentzas, G., and Sakkas, N. (1999). Knowledge networking in supply chains: a case study in the Wood/Furniture Sector. *Information Knowledge Systems Management* 1 (3/4), 267-279.
- Alqudah, O. A. A., and Shaalan, K. (2016). Effective Knowledge Management in Projects: Characteristics and Integration Information and Knowledge Management. *www.iiste.org ISSN 2224-5758 (Paper) ISSN 2224-896X (Online) Vol.6, No.8, 2016*
- Arthur, E. N. L. (2013) Knowledge Management Initiatives and Implementation: a qualitative meta-analysis of public and private organizations. <https://core.ac.uk/download/pdf/37411287.pdf>
- Basnayake, W. B. M. D. (2016). The Effect of a Team's Knowledge Management Practices on Team Performance in Sri Lankan Software Development Companies and Business Process Outsourcing Companies. <http://dr.lib.sjp.ac.lk/handle/123456789/10190>
- Barclay, C. (2010). Knowledge management

- practices in IT projects: an exploratory assessment of the state of affairs in the Caribbean. Paper presented at PMI® Research Conference: Defining the Future of Project Management, Washington, DC. Newtown Square, PA:Project Management Institute.
- Bereznoy, A., Meissner D. and Scuotto, V. (2023) The intertwining of knowledge sharing and creation in the digital platform based ecosystem. A conceptual study on the lens of the open innovation approach. *Journal of Knowledge Management*. DOI: 10.1108/JKM-10-2020-0769
- Brown E. D., (2009). *A Social Approach to knowledge Management in Projects*. Social Project Knowledge Management.
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Cadle, J. and Yeates, D. (2008). *Project Management for Information Systems*. 5th Edition. Fifth edition published 2008. Pearson Prentice Hall.
- Chua. A. and Lam, W. (2005), Why KM projects fail: a multi-case analysis. *Journal of Knowledge Management*. VOL. 9 NO. 3 2005, pp. 6-17, Q Emerald Group Publishing Limited, ISSN 1367- 3270 DOI 10.1108/13673270510602737
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches/ 3rd ed. p. cm*. SAGE Publications India Pvt. Ltd. ISBN 978-1- 4129-6557-6 (pbk.)
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE Publications.
- Dissanayake, P. and Senathiraja, R. (2021). Factors Associated with Knowledge Sharing Capabilities of IT Professionals in Sri Lanka. *FGS - CJMR Journal - March 2021 - Volume 06 - No 01* (13 - 52). ISSN: 2362-0633
- Fonseka, A. T. (2010), *Factors Affecting the Completion of Information Technology Projects in Sri Lanka*. URI: <http://dr.lib.sjp.ac.lk/handle/123456789/9927>.
- Hammarberg, K., Kirkman, M. and de Lacey, S. (2016). *Qualitative research methods: when to use them and how to judge them*. *Human Reproduction*, Vol.31, No.3 pp. 498–501, 2016.
- Insight's 23 Survey report. 2023 Insight Intelligent Technology Report: Are We Entering a New Era of Innovation?. www.hk.insight.com
- Jayasuriya, DRN (2018). *Knowledge management challenges in telecom IT projects implementation*. URI: <http://dl.lib.mrt.ac.lk/handle/123456789/9927>
- Jayasena, S. and Jayasekara, KR (2017). Effect of Knowledge Management in IT Project Management for Project Success. <http://dl.lib.uom.lk/handle/123/16326>
- Kariyapperuma K. A. S. K. (2015). *Knowledge Management for Service Innovation: A Study of Sri Lankan Business Service Organizations*. *NSBM Journal of Management*, Vol-1, 2, December 2015.
- Karapetyan, A. and Otieno, R. (2010). *A Study of Knowledge Management Challenges in Project Management: Case of Start-up Projects in Swedish Incubators*. <https://www.diva-potential.org/smash/get/diva2:397225/fulltext01.pdf>
- Krippendorff, K. (2018). *Content Analysis: An Introduction to Its Methodology*. Sage Publications.
- Korkmaz, K. A., and Bahidrah, S. (2018) *Implementation of Knowledge Management in Construction Projects*. *Journal of Advancements in Civil Engineering & Technology*. Vol.2.10.31031/ACET. 2018.02.000539
- Langat, M. C. and Kimutai, G. (2023). *Knowledge management practices and implementation of projects at The Tea Research Foundation in Kenya*. *International Academic Journal of Information*

- Sciences and Project Management, 3(7), 145-154.
- McKinsey's The State of Organizations 2023. www.mckinsey.com
- McManus, J. and Wood-Harper, T. (2007) Understanding the Sources of Information Systems Project Failure. Journal of the Management Services Institute, 51, 38-43.
- Meredith, J. and Zwikaël, O. (2019). When is a project successful? IEEE Engineering Management Review, 47(3), 127-134.)
- Nonaka, I., & Takeuchi, H. (1995). The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford University Press.
- Ouriques, R. A. B., Wnuk, K., Gorschek, T., & Svensson, R. B. (2019). Knowledge management strategies and processes in agile software development: a systematic literature review. International journal of software engineering and knowledge engineering, 29(03), 345- 380.
- Pereira, L., Santos, J., Dias, A. and Costa, R., (2021). Knowledge Management in Projects. International Journal of Knowledge Management. Volume 17 • Issue 1 • January- March 2021
- Priyangika, S, and Perera, R. (2021). Determinant of successful knowledge management in software development industry in sri Lanka.Proceeding of the Open University Research Sessions (OURS 2021).
- Rajasekar, S., Philominaathan, P. and Chinnathambi, V., (2013) Research Methodology. https://www.researchgate.net/publication/2174858_Research_Methodology
- Reich, B. H., Gemino, A. and Sauer, C. (2012). Knowledge Management and Project-based knowledge in IT projects: A model and preliminary empirical result. International Journal of Project Management,30(6), August 2012,pp 663-674.
- <http://dx.doi.org/10.1016/j.ijproman.2011.12.003>.
- Schindler, M. and Eppler, M.J. (2003). Harvesting project knowledge: Review of project learning methods and success factors. International Journal of Project Management, 21(3), pp. 219-228.
- Tilakaratne,G.H. and Abeygunawardana, R. A. B. (2016). Usage of Knowledge Management Techniques in IT Based Company in Sri Lanka: A Case Study. 13th International Conference on Business Management 2016.
- Terzieva, M. (2014) Project Knowledge Management: how organizations learn from Experience. International Conference on Project MANagement / HCIST 2014 - International Conference on Health and Social Care Information Systems and Technologies.
- Walliman N.,(2011). Research Method, Basics. Routledge publications. 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN
- Yapa, S. T. W. S. (2019) Issues and Barriers in Implementing Knowledge Management in a Business School in Sri Lanka. Department of Decision Sciences University of Sri Jayewardenepura, Sri Lanka. E- mail: samanyapa@sjp.ac.lk. <http://dr.lib.sjp.ac.lk/handle/123456789/8907>
- Yeong, A. (2010). Integrating knowledge management with project management for project success. Journal of Project, Program & Portfolio Management. Vol 1 No 2 (2010) 8-19.
- Yusof, M. N., Yahaya, N. M., Awang, N., Hassan, N. N. B. N. and Cheen, K. S. (2019). The Challenges In Implementing Knowledge Management Practices In Construction Industry. International Journal of Engineering and Advanced Technology (IJEAT). ISSN: 2249-8958 (Online), Volume-8 Issue-5C, May 2019.
- Zheng, T. (2017) A Literature Review on

Knowledge Sharing. Open Journal of
Social Sciences, Vol.5 No.3, March 16,
2017