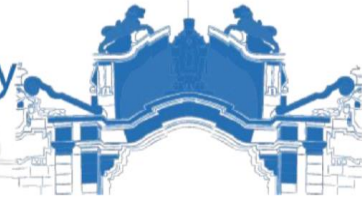




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# **COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES**

## **SCHOOL OF INFORMATION SCIENCE**

### **HRM KM platform for FH Ethiopia**

**ELIAS GIRMA MARCHA**

**Addis Ababa, Ethiopia**

**September 2021**

**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF NATURAL AND COMPUTATIONAL**  
**SCIENCES**  
**SCHOOL OF INFORMATION SCIENCE**

**HRM KM platform for FH Ethiopia**

**ELIAS GIRMA MARCHA**

A thesis submitted to School Information Science in partial fulfillment of the requirement for the Degree of Master of Science in Information Systems.

September 2021

**ADDIS ABABA UNIVERSITY**  
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**SCHOOL OF INFORMATION SCIENCE**

**M.SC. IN INFORMATION SYSTEMS**

**HRM KM platform for FH Ethiopia**

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Date

## DECLARATION

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I declare that this thesis is my original work and has not been submitted for a master degree in any other university.

Elias Girma

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This thesis has been submitted for examination with my approval as university advisor.

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September 2021

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## **ACRONYMS**

DS	Design Science
DSRM	Design Science Research Methodology
FHE	FH Ethiopia
GDP	Gross domestic product
HR	Human Resource
HRM	Human Resource Management
ICT	Information Communication Technology
INGO	International Non-Governmental Organization
IS	Information System
IT	Information Technology
KB	Knowledge Base
KM	Knowledge Management
KMF	Knowledge Management Framework
NGO	Non-Governmental Organization
UN	United Nation
UNDP	United Nations Development Program

## ABSTRACT

The practice of integrating knowledge management into the human resource management function of the FH Ethiopia projects is the subject of this research. The enhancement in project human resource management processes and functions will eventually result in an improvement in the performance of an organization. The advantages of implementing an integrated approach between HRM and KM, in which one encourages and supports the other in order to improve organizational efficiency and employee performance.

The main objective of this research is to develop an integrated project HRM platform for FH Ethiopia to enhance the KM practices in the way of improving organizational performance. The main objective of the study was accomplished by identifying gaps. A proposed conceptual framework enables FH Ethiopia to integrate KM in project HRM processes. Especially, FH Ethiopia is a project-based organization and project HRM needs big attention in terms of retaining knowledge (tacit) that obtained throughout the project implementation. The study attempts to answer three research questions that focuses on enhancing organizational performance. These questions are intended to bridge the gap between knowledge management practices and human resource management operations. The study effectively addresses the issues by developing methods that, in turn, improve employee and organizational performance.

The study uses design science research methodology to answers the research questions. Experts of the organization look upon the proposed conceptual framework, which developed as per the design requirement. The research approach for this thesis was established based on six procedures to answer the research questions. Experts from the organization were selected for interviews based on their valuable contribution to the study. Their input gives crucial data for the researcher about the current setup of KM in the organization. The researcher uses documents and performs a physical observation to understand the culture and awareness of staff towards KM.

This study has substantial implications for organizations that are predominantly project-based. The study shown that project managers, team leaders, and team members should think about leveraging prior project knowledge and experiences. Generally, this study contributes in the organizational initiatives to strengthen knowledge management practice by developing comprehensive knowledge management policy/strategy compatible with organizational strategy, enhance the level of employee awareness regarding the concepts and benefits of knowledge management, implement a knowledge management system and revive employees to take an active role in knowledge management initiatives that enhances organizational performance. The findings of this research have major management consequences, especially for project-based organizations.

**Keywords: Knowledge Management, Human Resource Management, Project management, Project based organizations, information technology, organizational culture, organizational knowledge, organizational performance.**

# CHAPTER ONE

## INTRODUCTION

### 1.1. BACKGROUND

Jennex (2005) defined KM as the process of systematically applying knowledge from prior decision-making experiences to current and future decision-making activities with the goal of increasing the organization's performance. In addition, Jennex (2005) viewed a KM system as that system created to facilitate the capture, storage, retrieval, and reuse of knowledge. This perception of KM and KM systems holistically combine organizational and technical solutions to achieve the goals of knowledge retention and re-use in order to improve organizational and individual decision-making.

Successful knowledge management systems encourage the flow of information and sharing of knowledge and information in all operations (Lemlem, 2017). Organizations can encourage cooperation, teamwork, and the free exchange of knowledge and best practices between the organization, operational partners, and international agencies by forming Knowledge Networks and communities of practice.

Projects are mainly considered as temporary endeavors. Knowledge management considers the problems of continuous learning, which involves knowledge inheritance in project context. At the same time, knowledge is an area of interest in organizations and a source of competitive advantage for many companies. Appropriately managing of knowledge helps to enhance organizational performance. Therefore, in order to address the problem of knowledge transfer in project environment, project-based organization needs to pay attention for the processes of knowledge management.

Knowledge management is not only a technology or a set of methodologies; it is a discipline that comprises people, processes and technology. Knowledge management advances the efficiency and effectiveness of an organization. Moreover, Knowledge management practices involve a knowledge base, knowledge sharing, collaboration and knowledge reuse to efficiently enhancing and supporting education. Knowledge Management encompasses theories, models, processes and technologies that support the development of knowledge assets. By managing knowledge capital that exists in both explicit and tacit forms, knowledge management enhances an organization's ability to learn from its surroundings and integrate knowledge into organizational operations and strategy.

The advantages of implementing an integrated approach between human resource management and knowledge management, where one promotes and supports the other in order to improve organizational efficiency and employee performance (Banerjee, 2013, Svetlik and Stavrou-Costea, 2007). Knowledge management (KM) is about developing, sharing and applying knowledge within the firm to gain and sustain a competitive advantage (Petersen and Poulfelt, 2002). KM has been widely used by firms and organizations in order to improve decision-making, product innovation, productivity and profits (Edvardsson, 2006). The question is how project human resource management (HRM) benefits from KM. Knowledge is dependent on people and a core of project HRM is people. Therefore, people are an intersection between knowledge management and project HRM.

The core business of the HR function is to nurture employees in accordance with the corporate plan, choose and hire people, educate and train employees, critically evaluate their performance, motivate them, and foster a learning culture (Evans, 2003). Hansen, et al. (1999) argue that there are two strategies for managing knowledge and they term these strategies 'codification' and 'personalization'. The strategy of codification refers to the codification of knowledge and its storage in databases where accessed and used by anyone in the company. Organizations embracing knowledge management invest heavily in ICT for projects like intra-net, data warehousing and data mining, knowledge mapping (this involves identifying where the knowledge is located in the firm), and electronic libraries. This increases effectiveness and growth, as Hansen explains 'The reuse of knowledge saves work, reduces communications costs, and allows a company to take on more projects' (Hansen, 1999).

The best way to reinvent HRM by itself is through its contribution to effective linkages between HRM and KM. The rapid growth of technology has led to an economy where competitive advantage bases on the successful application of knowledge (Lengnick-Hall & Lengnick-Hall, 2003). Traditional HRM functioned under narrow operational boundaries; in the knowledge economy, the role of HRM needs to expand, looking both within and outside the organization. The traditional focus on managing people has broadened to managing organizational capabilities, managing relationships and managing learning and knowledge (Ulrich, 1997; Lengnick- Hall & Lengnick-Hall, 2003).

## **1.2. MOTIVATION OF THE STUDY**

The intention of the researcher to study on this topic arise from the potential of KM that enables individuals and organization to stimulate innovation and enhance performance. From the past readings and experience of the researcher, there is a clearly visible gaps in many organizations on how knowledge flow and is disseminated throughout the departments. This gap triggers the researcher to study on the subject and proposes an integrated project HRM platform. Readers of this study should pay attention for the outputs and recommendations of the research work. Additionally, any interested researcher or student can use the findings of the study for future study.

It will also be valuable resource for academicians, decision-makers, and anybody else who is interested in knowledge management.

### **1.3. ABOUT FH ETHIOPIA**

A Global History of FH/Food for the Hungry established in the aim of serving the most vulnerable for over 45 years. In 2017, FH/Food for the Hungry served over 14 million people in more than 20 countries through relief and development activities. FH has now around 2,600 staff actively working to end physical and spiritual hungers in some of the most diverse and difficult areas of the world. The story behind Food for the Hungry is one that provides inspiring evidence for the fact that one person can truly make a difference in ending poverty. In the mission called One Man to a Global Mission, in 1970 they began to intensify a burden for the world's most vulnerable people in the heart of a man named Dr. Larry Ward. Having worked at World Vision for several years, Larry exposed the realities and plight of the poor from all around the world. January 1971 the first Board of Directors assembled and "Food for the Hungry" established in the United States (fh.org).

In 1980, the first step toward Larry Ward's vision of an international body became a reality with the founding of Food for the Hungry International (FHI) in Geneva, Switzerland. The mission would now expand to implement unified relief and development programs in locations all over the world through an international partnership of supporting "national organizations" or "affiliates". Japan International Food for the Hungry (JIFH) was established a year later in 1981. In 1984, Dr. Ward retired and Dr. Tetsunao Yamamori became Food for the Hungry and FHI's second president. Canadian Food for the Hungry (now FH Canada) first registered as an official charitable organization in 1988. Korean Food for the Hungry International and Food for the Hungry/United Kingdom both established in 1989.

FH has been active in Ethiopia since 1984 working in a wide range of sectors including child development, health, nutrition, food security, education, disaster risk reduction, and emergency assistance. FH Ethiopia (FHE) has more than 900 fulltime staff. In 2019, FHE addressed 4.6 million people. Currently FH Ethiopia operates in Amhara, Tigray, Benishangul Gumuz, Oromia, Sidama, Southern Nations Nationalities, and Peoples regions. Each one of the regions has one or more than one project areas. In Amhara region there are 7 distinct project areas, In Tigray there is one project focuses on refugees, In Benshangul Gumuz there are two projects focuses on conservative agriculture, In Oromia region there are three projects focuses on child sponsorship and in Southern Nations Nationalities & People region and Sidama region there are one project each focus on child sponsorship.

Many project management researches indicate that successful project management always require a better application of appropriate knowledge, process, skills, tools, and techniques that can have a significant impact on project success. The main objective of project management is to

ensure a project is completed at the required scope defined by the stakeholders, within project budget, on time and delivers a quality product or service as the end result. Knowledge sharing is core in KM, which suggests that providing adequate motivators and removing obstacles to knowledge and experience sharing will result in more efficient and effective knowledge sharing in projects, increasing the likelihood of project success.

#### **1.4. EXISTING SYSTEMS IN FH ETHIOPIA**

FHE is one of the earliest NGO's in Ethiopia but a very few technological tools are implemented across the organization. Most of the staff at head office and project offices use basic computer applications like word, excel, power-point and email in their daily activities. The top management team has no any system that to helps them for in decision-making. In three departments, there are information systems like MS Dynamics – For financial data tracking and reporting, World Link 2/3 – to track beneficiary's information and Smart Sheet – for data organization and analysis. Even though the organization implemented these systems, there is no effective mechanism to manage the knowledge generated from the systems as well the processes.

A predominantly used application among the staff is google drive, which helps them to share files to their colleagues. Each person has a responsibility to manage his/her own files and there is no centralized file management system in the organization. The IT policy of the organization states that each document downloaded or created on the organization equipment belongs to the organization. However, there is no mechanism implemented to ensure this. The lack of knowledge management system in the organization costs them a lot in terms of organizing their data, interpreting and sharing organizational knowledge.

## 1.5. PROBLEM STATEMENT

Lack of an integrated platform to manage knowledge is visible in many organizations. Now a day, many studies and tools are evolving in the area of KM but implementation in our country is not satisfactory. Not only that, the integration between KM and HRM, as well as their influence on organizational and employee performance, remains a contentious subject in our country that merits further study. In Ethiopia, development aid organizations fulfill a crucial role in speeding up the development activities. The most important roles of these organizations are organization of aid efforts, associate development planning, building development capacity, and investing in infrastructure and humanitarian aid.

Implementing KM systems should be done after the organization determine their goals and strategies (Rus and Lindvall, 2002). Actually, most of KM developments failed because organizations did not have good KM development methodologies (Lawton, 2001). Some organizations focus on managing documents instead of managing knowledge. This is an easy mistake to make, because many tools advertised as KM tools address document management rather than knowledge management (Rus and Lindvall, 2002).

FH Ethiopia is a non-governmental developmental organization that focuses on implementing projects that focus on coordination of aid efforts, supporting development planning, building development capacity, and investing in infrastructure and humanitarian aid. These activities are undergoing in a project manner and has a specific period and resource. In the organization there is no knowledge management process regarding project-based knowledge in particular. The most regular Knowledge Management activity is, saving project documentation on hardcopy. The project managers and employees (the project team members) communicate frequently via e-mails, phone call, meetings, hardcopy materials and presentations. New employees know about the existing work process by contacting the relevant person and asking questions.

Besides most of the project managers and team, members work on more than one project concurrently and they might start a new project work after finishing one. There are no IT tools in the organization that support knowledge management activity but they use document-sharing tools like google drive and dropbox. Additionally, most of the time, employees communicate through telephone, project managers handle the project by their own experience than using knowledge management to review previous projects. The other difficulty is almost all staff is hired in a contract bases and there is no permanent staff who stayed for long in the organization to share his/her experience. Unless and other wise a KM is implemented, extracting and sharing knowledge and learn from previous projects is very difficult.

Knowledge management practices is one of the considerable gaps observed in of the organization. Documents in the organization are stored in the individual computers but these documents are not processed to generate a meaningful insight. Sometimes documents are also lost

due to a maintenance operation performed in the computers. Sharing knowledge from one staff to the other is also difficult and depends on the willingness of the experts. There is no systematic way to create, share and store knowledge in the organization.

Landaeta (2015) stated, in a project-based organization, appropriate project analysis did not occur, and there is a lack of a complete process for knowledge management, which inhibits companies from properly transferring knowledge. Duffield & Whitty (2015) expresses that even though there are abundant thoughts and concepts, there is miniature practical guidance regarding effective methods that successfully support the organization to learn from past project experiences.

Evans (2003), points out knowledge is dependent on people and that project HRM issues, such as human resource planning, acquiring the project team, developing the project team and managing the team usually occurring at least once in a project or several times in different phases if the project made up of many phases. There is a clear role for the HRM functions in helping firms to identify the crucial knowledge base on which their competitiveness depends, ensuring its appropriate development, and reviewing structures and process, both formal and informal, which help or hinder the integration of knowledge base with decision making process.

The survival of developmental and humanitarian organizations always depends on the availability of fund for each projects or programs. This dictate them to hire their staff in a contractual basis. Whenever projects phase out, project staff's employment terminate immediately, but the organization may not be completely closed out. Since most of the organization have more than one projects, they will continue their activities with the staff at hand. Therefore, such organizations should have a mechanism to exchange the staff knowledge and experience in to organizational knowledge.

Furthermore, numerous researchers are conducting significant study on the application of knowledge management in different sectors. Some of the research works are; indigenous knowledge management (Mariye & Marie-Claude Boudreau, 2010), agricultural knowledge management (Getahun, et. al, 2013) and knowledge management in health care institutions, Knowledge management practice on different organization such as knowledge management in education sectors (Rahel & Ermias, 2011) and enabling knowledge Sharing in the Work place: the case of commercial bank of Ethiopia (Temtum, 2013). In addition, a research paper presented in 2020 by Mekedes Asema focus on designing project knowledge reuse framework that could help a project base organization to manage their knowledge and reuse it in effective and efficient manner. This paper has a very good insight in terms of integrating knowledge management in project-based organization but does not cover the integration with HRM functions. She particularly focused on increasing project knowledge reuse within and between projects inside the firm. However, HRM functions needs an integration with KM process in order to have a successful knowledge transfer among projects. The integration between KM and project HRM in the main focus of this research.

## **1.6. RESEARCH QUESTIONS**

- I. What are the positive and negative practices of the current knowledge management activities in FH Ethiopia?
- II. What type of framework is appropriate for knowledge based HRM processes?
- III. How can an integrated knowledge management platform be developed for project HRM of FH Ethiopia?

## **1.7. OBJECTIVE OF THE STUDY**

### **1.7.1. General Objective**

The general objective of this research is to develop an integrated project human resource management platform for FH Ethiopia to enhance the knowledge management practices in the way of improving organizational performance.

### **1.7.2. Specific Objectives**

The specific objectives of this research are -

- I. To assess the current Knowledge management practices in FH Ethiopia.
- II. To propose a framework for Knowledge-Based HRM Processes.
- III. To develop an integrated project HRM platform.

## **1.8. SIGNIFICANCE OF THE STUDY**

This paper has the following advantages: FH Ethiopia will answer whether knowledge dissemination throughout the departments of the organization is satisfactory or not, the organization will understand its readiness for technological advantages and get a conceptual framework that can be implemented in the organization which supports project HRM that leads enhancement of organizational performance.

Outputs and recommendations of this research work are open for further review and other similar organization can adopt the proposed framework. Moreover, the findings of the study will be made available for future researchers or students who may be interested in carrying out more research in this area and it will also be a valuable resource for academicians, decision-makers, and organization executives in terms managing knowledge as a capital.

## **1.9. SCOPE AND LIMITATIONS**

The study's scope is confined to organizational practices, information technology, and organizational knowledge among FH Ethiopia employees with the goal of improving organizational performance. The research would be more complete if it included a few additional international non-governmental organizations (NGOs) and UN agencies operating in Ethiopia. Even though knowledge management (KM) is one of the technical advantages that companies may employ extensively, this research focuses solely on KM benefits and practices in connection to project HRM.

## **1.10. ORGANIZATION OF THE THESIS**

The thesis has seven chapters. The first chapter contains an introduction that includes an overview of the study, the motivation of the researcher, statement of the problem, the objective of study, significance of the study, and the scope of the study. The second chapter contains related literature review including Knowledge management, project knowledge management, and the integration of project-based organizations and knowledge management, as well as related works in the field. The third chapter discussed the methodology of the study, which is design science, data collecting methods, and data analysis and interpretation methods. The fourth chapter concentrated on data presentation and analysis. The fifth chapter included the design and integration of the project HRM platform. The prototype of the suggested framework is demonstrated in Chapter six. The final chapter, Chapter seven, provided a conclusion and recommendation.

## CHAPTER TWO

### LITERATURE REVIEW

This chapter deals with the major concepts of knowledge and knowledge management in relation to project HRM. The chapter contains related topics that will give a significant background for the readers. Then the paper outlines what project, project management, the alignment of project management and knowledge management in the mirror of project HRM. The challenge encountered by project-based organization regarding knowledge management and the enabling factors of knowledge management on project-based organizations is discussed. Additionally, related researches are reviewed in order to show the research gap in the study area.

#### 2.1. TERM/OPERATIONAL DEFINITION

The following list provides the main concepts in KM that introduce the reader to the concepts and the associated language within this developing discipline.

**Corporate memory** – the aggregate experiences and knowledge within an organization, often embodied in long serving members of staff, particular processes and systems, archives and also in the organizational cultural (Sue and Chris, 2003). An effective application of corporate memory is very helpful to avoid making of the same mistakes twice. Learning should be in the place to maximize organization memory otherwise a previously unsuccessful approach might not work and show an overly leading corporate memory that stifles creativity and innovation. It is remarkable to note that management styles such as ‘down-sizing’ and the high intensities of early retirement have adverse influence on corporate memory. KM has key role in this regard.

**Data mining** – the process of inspecting or manipulating a data warehouses to discovery applicable information. Due to the information overload extracting from the available stored information become difficult time to time (Jacoby, 2002).

**Explicit knowledge** – used to refer to written information shared, communicated and transferred from one place to another in a structured way. Some of the examples for explicit knowledge in an organization includes the contents of databases, operating procedures, documented processes, rules, procedures, regulations etc (Sue and Charis, 2003).

**Tacit knowledge** – It is true that each codifying and structured transferring each knowledge is not possible but some involves personal and context specific knowledge that is not explicit. Tacit knowledge is a knowledge embedded in people’s experiences and linked to their own beliefs and perspective. Part of the aim of many knowledge management initiatives is to make the tacit knowledge of individuals explicit, by bringing it into the public domain (Sue and Charis, 2003).

**Information economics** – the study of the value of information to an organization by estimating its cost. Largely used in the concept of ‘knowledge brokering’ to determine the appropriate cost for acquiring information (Jennex, 2005).

**Knowledge analysis** – a knowledge analysis used to describe a detailed analysis of the strengths and weakness of a ‘knowledge source’ (Dalkir, 2013).

**Knowledge audit** – the process of identifying what knowledge the organization holds and where it located, together with the knowledge that the organization required. A knowledge audit covers the skills and knowledge of people as well as the entire intellectual assets of an organization (Ing & Gudmudur, 2013).

**Knowledge engineer** – most of the time knowledge engineer refer to a person involved in expert systems development (Sue and Charis, 2003).

**Knowledge mapping** – this involves identifying where knowledge exists (usually inside an organization but it can include external sources) and producing a guide to locate it – whether a simple directory listing or a more sophisticated Web page with hyperlinks to databases, archives etc. The idea is that the knowledge map used to navigate through the knowledge resources and find the relevant knowledge or source of knowledge (Sue and Charis, 2003).

**Knowledge needs analysis** – this phrase used to describe the process of identifying the knowledge requirements to deliver a particular objective and the ‘gap’ with what currently exists (Sue and Charis, 2003).

**Knowledge organization** – this phrase used in various ways. It can refer to an organization, whose primary assets and/or products are intellectual, or an organization that has mastered the art of leveraging value from its knowledge, or simply an organization that values knowledge (Jacoby, 2002)

**Knowledge planning** – knowledge planning generally encompasses an analysis of future requirements in terms of systems, people and technology. It will also involve planning for the ‘retirement’ and replacement of those resources (Dalkir, 2013)

**Knowledge preservation** – used to refer to capturing and archiving knowledge and systematic processes for ensuring knowledge is not lost (Sue and Charis, 2003).

**Knowledge requirements** – the ‘know how’ – people, information, systems and the infrastructure that an organization needs to deliver its objectives (Sue and Charis, 2003).

**Knowledge technology** – this often used to refer to IT systems (particularly expert and ‘artificial intelligence’ applications) (Sue and Charis, 2003).

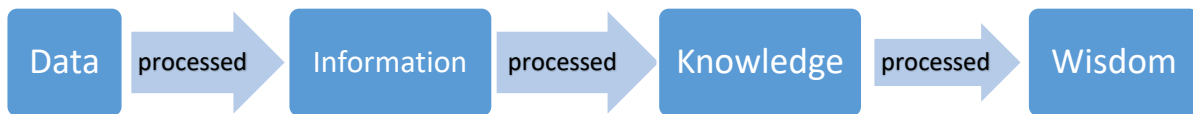
**Knowledge transfer** – for some practitioners this viewed from the tactical perspective of converting knowledge into working solutions. For others, it seen as the ability literally move

knowledge from one place to another (whether a physical place such as an office block or a mental place such as a person's mind). In a merger or acquisition where people may be leaving, their knowledge needs to be capture and transfer to the new organization (Jennex, 2005)

**Knowledge worker** – someone whose basic ‘tools of the trade’ are their knowledge and experience. Traditionally associated with high paid individuals, either employees, contractors or consultants. Sometimes used to refer to people who work with information. In the knowledge economy, most employees are becoming knowledge workers (Sue and Charis, 2003).

## 2.2. DATA, INFORMATION, KNOWLEDGE AND WISDOM

We understand that the development of industry created industrial era, with the same fashion the development of information technology systems, and the internet, has created the era of information. It has been a long-held belief by many philosophers that knowledge is power and that knowledge stems from understanding of information; information, in turn, is the assigning of meaning to data.



*Fig 2.1 Data, information, knowledge, wisdom*

### 2.2.1. Data

The concept of data commonly referred as ‘raw’ data – is a collection of text, numbers and symbols with no meaning. Data therefore has to be processed or provide with a context, before it can have meaning. For example, 3, 6, 9, 12, cat, dog, gerbil, rabbit, cockatoo, 161.2, 175.3, 166.4, 164.7, 169.3 these are meaningless sets of data. They could be the first four answers in the 3 x table, a list of household pets, the heights of 15-year-old students but without a context we don't know, etc.

### 2.2.2. Information

Information is the result of processing data. This results in facts, which enables the processed data used in context and have meaning. Information is data that has meaning. Data on its own has no meaning. It only takes on meaning and becomes information when it is interpreted. When that data processed into sets according to context, it provides information. Information is usually the processed outcome of data. When data is processed into information, it becomes interpretable and gains significance. Information can be about facts, things, concepts, or anything relevant. It may provide answers to questions like who, which, when, why, what, and how. For

example: 3, 6, 9 and 12 are the first four answers in the 3 x table, cat, dog, gerbil, rabbit, cockatoo is a list of household pets, 161.2, 175.3, 166.4, 164.7, 169.3 are the heights of 15-year-old students, etc.

### **2.2.3. Knowledge**

When someone memorizes information this often referred to as ‘rote-learning’ or ‘learning by heart’. We can then say that they have acquired some knowledge. Another form of knowledge produced from understanding information that given to us, and using that information to gain knowledge of how to solve problems. Knowledge can therefore be acquiring and remembering a set of facts, or the use of information to solve problems. The first type often called explicit knowledge. This knowledge can easily pass on to others. Most forms of explicit knowledge can be stored in certain media. The information contained in encyclopedias and textbooks are good examples of explicit knowledge.

Tacit knowledge is the second category. It is the type of knowledge, which is tough to impart just by writing it down. For example, the fact that Paris is France's capital is explicit knowledge, which can easily write down and comprehend by others. However, the capability to speak a new language, make bread, code a program, or operate sophisticated machinery necessitates the acquisition of extra knowledge (such as that obtained via experience) that is not always explicit and are difficult to pass on to other users.

### **2.2.4. Wisdom**

According to Western classifications, wisdom can divide into two categories: Sophia (theoretical wisdom) and phronesis (practical wisdom), the former emphasizing how to discover, interpret and understand knowledge, the latter emphasizing emphasis on the practical use of knowledge. According to the Eastern classification, wisdom can be divided into natural intelligence and intense wisdom, the former coming from art, with culture emphasizing intuitive thinking and visual thinking, the latter coming from science. The emphasis on logical thinking, certainly, both require creative thinking.

Wisdom also refers to the ability of advanced biology to have greater comprehensive understanding based on neural organisms, covering perception, knowledge, memory, understanding, association, emotion, logic, recognition, calculation, analysis, judgment, culture, etc. Average, tolerance, decision making, etc. Wisdom forces people to understand profound people, things, events, society, and universe, present, past and future.

## **2.3. BASIC CONCEPTS OF KNOWLEDGE**

Obviously, knowledge created from the origin of humankind. Philosophers, Western to Eastern, gave stress on the root of knowledge. Humankind has obtained and forms new knowledge

that allow them to comprehend and modify to the world they tenanted, and renovating it according to their needs. (Faucher, 2010).

From the primeval time knowledge was disseminated orally, then in writing; but it was limited to a low circle of educated people. From the time when the period of ancient Greeks the concept of knowledge has been vigorously studied. K. Henderson has expressed that ancient Greek peoples often confronted technological progressions track race due to a Platonic mind or body schism (Henderson, 1995).

This contemporary world is going through an era in which knowledge is a basic commodity, knowledge streams have highlighted as the most important factor of economy. Moreover, knowledge has transformed into a competitive advantage. In such a situation, those organizations can hope to survive which rely on their knowledge itself rather than their physical assets (Davenport & Prusak, 1998).

Knowledge or "intellectual capital", could be in three forms, namely: (1) Human capital (evidenced in staff's knowledge, skills and talents); (2) Structural capital (comprised of systems for codifying, storing, transmitting and sharing knowledge); and (3) Customer capital (resulting from connections between organizations and clients, vendors and partners) (Soliman, F. and Spooner, K. 2000).

To the organization, knowledge defined as what people know about customers, products, processes, mistakes and success (Audrey and Smith, 2001). There are many arguments in the literature stressing that knowledge is the subject for companies to focus on because of the increasing competitive market place. For instance, in usual economies, the bases of capital are land, labor and capital (Civi, 2000). However, in this 21st century, other bases of capital are emerging. It takes many forms: technology, innovation, science, expertise, creativity and information. In another word, it is knowledge. Thus, knowledge is certainly the best resource and the only sustainable competitive advantage.

In a growing number of countries, with expanding firms contributing, this knowledge is migratory in some forms, embedded, and slow to retrieve in other forms (Civi, 2000). Building on this, Nonaka (1995) pointed out that successful companies are those that consistently create new knowledge, disseminate it widely throughout the firm and quickly embody.

### **2.3.1. Explicit knowledge**

Explicit knowledge is the one that attain easily and is often expressed or documented in a formal, systematic manner - frequently in words and numbers, and individuals may communicate it to others easily. Examples include management directives, executive orders, and policy manuals, meeting minutes, technical documentation and reference guides. Explicit knowledge is clearly formulated or defined easily expressed without ambiguity or vagueness, and codified and stored in database. Since it is easily shared and communicated, most organizations have captured this

knowledge in ordered repositories, systems or operating technologies of the firm, thus making it available to all members of the organization. Three types of explicit knowledge reside in a firm: cognitive knowledge, advance systems skills and system understanding (Meso and Smith, 2000)

1. **Cognitive knowledge**, also termed “know what”, is the “basic mastery of a discipline that professionals achieve through extensive training and certification”
2. **Advance skills** or “know how” refer to the “ability to apply rules of a discipline to complex real-world problems.”
3. **System understanding**, also termed “know why” is the deep understanding of the web of cause and effect relationships underlying a discipline.

### 2.3.2. Tacit knowledge

Tacit (subjective) knowledge on the other hand is the unarticulated knowledge that is in a person’s head, which is often difficult to describe and transfer (McCampbell et al., 1999). It includes lessons learned, expertise, judgments, rules of thumb and intuition (Audrey and Smith, 2001). It resides within the individual and is difficult to express in words. There is a great wealth of tacit knowledge inside people’s heads and embedded in the way we do things. Every employee has a wealth of tacit knowledge deeply rooted in his/her actions and his/her commitment to a particular craft or profession, a particular technology, a product market or the activities of a work group or team (Meso and Smith, 2000). It is vital for business success that tacit knowledge shared so that, when people leave, their knowledge does not disappear with them (Bagshaw, 2000).

Tacit knowledge is usually subconscious, internalized, and the individual may or may not be aware of what he or she knows and how he or she accomplishes particular results. Tacit knowledge can be attained through dialogue, storytelling, and sharing of best practices and lessons learned. It usually is rooted in an individual's experiences, intuition, insight, judgment, and knowledge of organizational values. Individuals with tacit knowledge are usually considered to be experts within their organizations and frequently sought out for guidance and input. In this case, it is very important for an organization and individuals to capture and codify such knowledge, in order to be aware of it and be able to share it with others.

Rediscovering the knowledge of an employee who has gone can be a very long and expensive process. Tacit knowledge can also reside in the culture of the firm (Meso and Smith, 2000). An example by Meso and Smith (2000) is self-motivated creativity, which refers to the will, motivation, and adaptability for success exhibited by employees working within certain corporate cultures. They further elaborate that it is difficult to identify the precise cause of care-why.

However, literature on KM acknowledges that high levels of care-why significantly enhance overall performance of the firm (Meso and Smith, 2000). Nonaka and Takeuchi (1995) have also established a dynamic model of knowledge creation. In this model, they explain a critical assumption that human knowledge created and expanded through social interaction between tacit

knowledge and explicit knowledge (Civi, 2000). This interaction known as "knowledge conversion" and their belief is that explicit and tacit knowledge are not very different. They interact with and interchange into each other in the creative activities of human beings. Nevertheless, Fawzy and Keri (2000) argue that joining tacit with explicit knowledge could be a very complex task and, in some circumstances, may not be possible. In other words, they state that reconciling what is in employees' minds with what is stored in databases requires extensive research and, in spite of major advances in knowledge-based technologies, this task is still in its infancy.

## **2.4. ORGANIZATIONAL KNOWLEDGE, LEARNING, CULTURE AND TECHNOLOGY**

### **2.4.1. Organizational knowledge**

Successful knowledge management employs a variety of different methods to organizational knowledge, including its acquisition, application, and sharing. Accumulation refers to the greater the efficiency of knowledge building (internal, external; through internalization or externalization) in an organization. Whereas usage refers to the efficiency of employing existing knowledge in an organization. Sharing refers to the formal or informal transfer of knowledge among the organization's departments. Organizational knowledge is a determinant of long competitive advantage and outperformance. This approach has enabled the development of the knowledge-based organization, which is an extended version of the resource-based organization. (Choo and Bontis, 2002). Instead of viewing organizations as system that mix the use of physical, financial, and human resources, the knowledge base view of the organization emphasizes the organization as a site for the creation, dissemination, and application of knowledge and other forms of intellectual resources in order to gain a competitive advantage. Thus, knowledge-based view of an organization with outstanding organizational performance stems from their disparities in knowledge creation and utilization.

Knowledge management strategy is a new concept in knowledge management studies. Knowledge management strategy relates to an organization's overall approach to focusing its resources on two knowledge domains: knowledge exploration and knowledge exploitation (March, 1991). Furthermore, knowledge strategy represents an organisation's conscious decision to allocate more resources to knowledge exploration, which supports the revealing, exploration, or acquisition of new knowledge, or knowledge exploitation, which is the gradual refining or utilization of current knowledge. Knowledge exploration primarily driven by innovation, whereas knowledge exploitation focused on efficiency (Levinthal and March, 1993).

Notwithstanding the conceptual relationship between knowledge strategy and organizational success, practical research on the subject is limited. Furthermore, the limited experimental research that have been done to investigate the relationship between knowledge strategy and organizational performance. Establishing a successful knowledge management

system in an organization highly correlated to a strong organizational strategy. Without strategic implementation of KM, organizations may find it challenging to obtain reliable information about their operations. Most companies today consider KM as an important strategy for their survival and competitiveness (Hwang 2003).

Effective interventions are necessary to establish a relationship between knowledge management and business strategy (Lang, 2001). Some of the techniques that businesses consider as KM adoption strategies include knowledge acquisition strategies, knowledge transfer strategies, and customer focus strategies (Wiig, 1997; Manasco, 1996). KM also considered as a strategic resource, giving competitive advantage and acting as a driver for implementation of an organizational strategy. Understanding the link between KM and organizational performance helps implementation of KM into organizational strategy (Carlucci and Schiuma, 2006).

#### **2.4.2. Organizational learning**

Interaction between the individual and the workplace is determinant factor of learning in a given organization. Billett (2004) has argued that the nature of individuals' participation depends both on the extent to which the workplace provides opportunities to participate and to extend to which individuals choose to engage in opportunities available. Thus, the workplace creates the possibilities but how individuals participate and interact in workplaces is central to their learning.

Fuller and Unwin (2004) have presented a continuum of expansive–restrictive work communities, which describes how the work community fosters or constrains its members learning. An expansive work community offers opportunities to take part in many different communities of practice, whereas a restrictive work community limits the opportunities of participation.

According to Fuller and Unwin (2004), three types of learning opportunity are central to the creation of expansive learning environments:

- (a) The chance to engage in diverse communities of practice at the workplace and outside,
- (b) The organization of jobs in a way that it fosters the opportunities for employees to co-construct knowledge and expertise and
- (c) The chance to deal with theoretical knowledge in off the job courses (leading to knowledge-based qualifications).

Organizational studies on workplace learning have also stressed that it is the duty of a work organization to create encouraging environment and other preconditions for learning of individuals, groups and the whole work communities. Space for learning and thinking often called for Nonaka and Konno (1998) have described this kind of learning space with a Japanese concept Ba that means a shared space for emerging relationships. Ba can consist of physical, virtual or mental spaces or from their combinations, and it provides a forum for developing individual and collective knowledge. For example, a team can be a Ba for the individuals and a network of

organizations can be a Ba for organizations. The benefit of Ba is that by participating in it individuals, teams, or organizations can surpass their own perspectives or boundaries.

Nonaka and Konno (1998) have distinguished between different types of Ba. Originating Ba for socialization (a space where people can meet face-to-face and share feelings, experiences and mental models). This is the primary Ba where knowledge creation process begins. Interacting Ba provides space for externalization that is for making tacit knowledge explicit. Here, people share their mental models, reflect, and analyses them. Cyber Ba represents the combination phase of knowledge creation: explicit knowledge combined with other explicit knowledge. This can take place, for example, in online networks, documentations and databases. Finally, Exercising Ba supports the internalization of explicit knowledge to tacit knowledge in a process where explicit knowledge used in action. If we examine any workplace from the framework of Ba, it recognize some workplaces and networks between them provide different forms of Ba, while there are also workplaces where these kinds of learning space and time cannot be found.

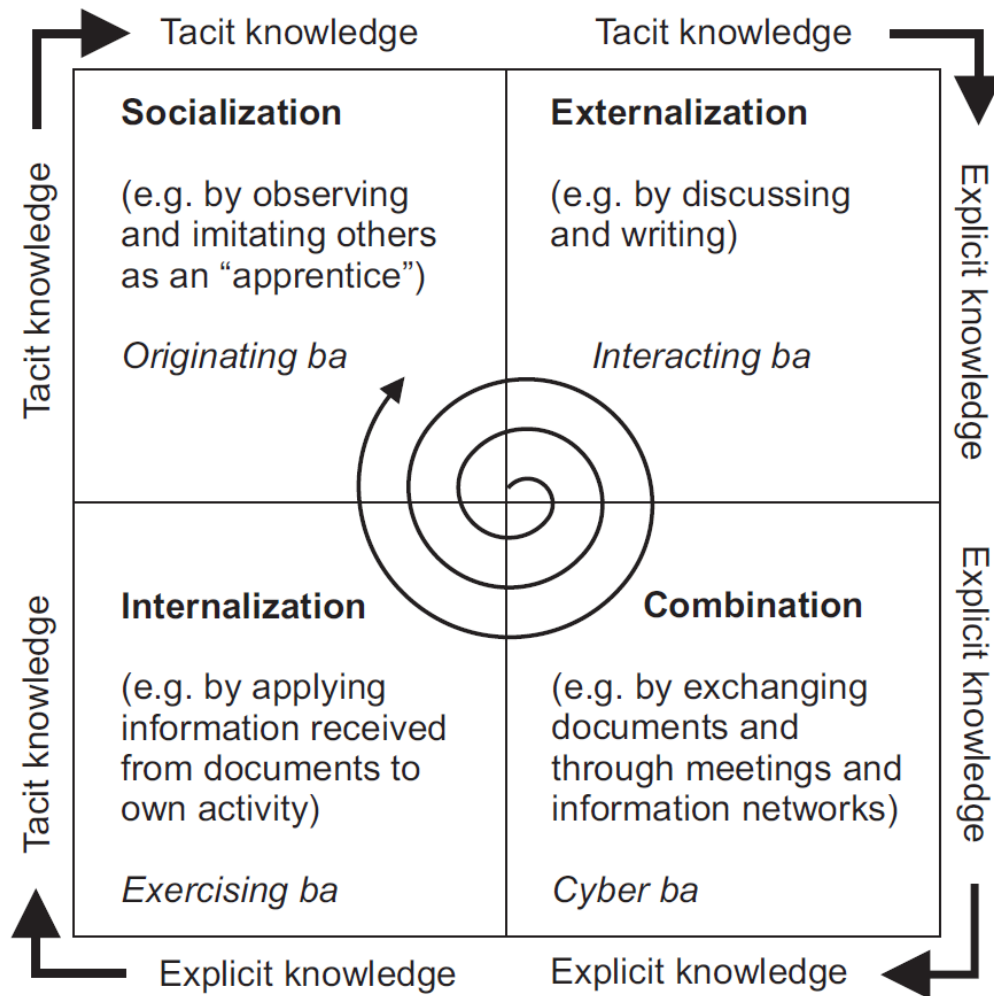


Fig2.2. Different forms of learning space, ba (Nonaka and Konno, 1998)

### **2.4.3 Organizational Culture**

Organizational culture is composed of common values and standards that give meaning to employees in the organization and provide them with standards for behavior. An organization's culture is observed in the norms of expected behaviors, beliefs, philosophies, routines, and representations adopted by its staff, and it changes through time (Mathis and Jackson, 2010). Organizational culture makes a substantial contribution to knowledge management because it establishes the fundamental precepts, values, and conventions that govern why and how knowledge generated, shared, and utilized in an organization. An organization may gain a competitive advantage by acquiring and using knowledge about its activities, as well as through embedding organizational knowledge into organizational cultures.

When KM is seen via the lens of compliance, it creates the appearance that there is a top-down, hierarchical division of labor in place, with one section of the company accountable for acquiring and another for providing information for collecting and generating knowledge. In fact, successful KM is dependent on each employee accepting their responsibility as 'knowledge citizens,' whose value proposition to the business is the amount to which s/he engages in the whole knowledge cycle. Staying up to date on procedure and cumulative evidence, innovations and advances in one's subject matter area, disseminating ongoing work, questions, and learning points with colleagues, and playing an active role in dialogues to influence corporate thinking, policies, and solutions. This is not an internal or compliance-driven process, but rather one that requires an open and external perspective based on computational measures such as cooperative peer support, fairness, integrity, professional growth, and individual professional learning in the public domain of the development sector (UNDP, 2014)

Implementation of KM in an organization is not a difficult procedure because staff are already in the habit of utilizing undefined KM in their everyday activities provided. As a response, corporate culture is on the verge of assimilating KM. During the implementation of KM inside an organization, the cultural backdrop must consider in terms of employee capacity and acceptance (Gumbley, 1998). Additionally, the strategy to KM adoption partially connected to the inner culture of the organization. Accordingly, when organizational cultures are rigorously bureaucratic, communications become more formalized and structured, with restricted involvement, resulting in knowledge sharing within a mindset imposed by the top management (Lang, 2001). Most of the time organization knowledge condensed in service employees; knowledge tends to be rolling between the top management and the operational staff. Effective human resources management achieved through instilling knowledge at all organizational levels. As a result, in order for KM to be effective, businesses must develop a culture that fosters knowledge sharing in order to expedite organizational performance achievement (Robbins, 2003).

#### **2.4.4 Information Technology**

Technology is essential for properly organizing and sharing knowledge. Organizations may use technology to develop the infrastructure and tools needed to support the growth of KM (Mathi, 2004). IT enables companies to make use of knowledge to improve organizational efficiency and effectiveness (Lang, 2001). Consequently, IT offers a conducive atmosphere for learning and collaboration among an organization's staff. For example, expert systems employed in companies to gather and manage knowledge (Gumbley, 1998). Gumbley (1998), on the other hand, claims that, while tools exist to manage knowledge, technology cannot only be an important success element in establishing a successful KM environment in organizations. Davenport and Prusak (1998) agree with them, stating that the importance of IT in KM is overstated. However, the preceding studies show that KM may help a company gain a competitive advantage by integrating the expertise and application of IT knowledge. IT knowledge is a critical instrument for facilitating KM activity in organizations for improved performance.

The significance of knowledge management is in enhancing individuals, group, and organizational productivity via the use of knowledge management technologies, i.e. information technology. The information technology component of knowledge management is collecting knowledge and using IT technologies. The higher the level of capturing knowledge (explicit or tacit) with information technology tools, the better the KM; and usage of IT tools indicates the higher the quality of tools, accuracy of information, user acceptance, utilization, and ease of access, the greater the KM effect on organizational performance.

KM tools range from simple e-mail programs to complex collaborative platforms built particularly to foster community development and identification. Knowledge repositories, expertise access tools, e-learning applications, discussion and chat technologies, synchronous interaction tools, and search and data mining tools are all examples of tools.

There is a distinction between information management and knowledge management. Collecting, organizing, and processing of data is the emphasis of information and information management. Data that is reliable and timely is essential for efficient knowledge management, but it is only one piece of the puzzle. Knowledge management may derive from information, but it also necessitates an analysis of the information and data, as well as an understanding of that analysis. It also allows for the application of such knowledge in future practice. It is not enough for a company just "having knowledge"; it must also be able to connect and use that knowledge in order to achieve better results.

To be more competitive in the age of the e-economy, business organizations must reevaluate their business processes and incorporate KM techniques into them. According to Mathi (2004) and Awad and Ghaziri (2004), knowledge management is the ultimate competitive advantage for today's businesses. KM is entrenched in a variety of critical domains, including economics, information management, the corporate environment, and human psychology. Similarly, Hwang (2003) in his article quotes "Managing knowledge is a skill, like financial acumen, and managers

who understand and develop it, will dominate competitively". To build a KM environment and to be a competitive company, the suitable desired environment in which the organization may accept new concepts must chose (Nonaka, 1998). The incorporation of KM and the adoption of a culture that encourages knowledge sharing can improve organizational performance (Hwang, 2003).

The overarching purpose of knowledge management is to produce value by leveraging, improving, and refining the firm's competencies and knowledge assets in order to fulfill organizational goals and performance targets. As a result, implementing knowledge management includes various dimensions, including: a) Organizational: the correct procedures, environments, culture, and systems; b) Managerial: the proper leadership, strategy; c) Technological: the proper systems, tools, and technologies - properly applied. d) Political: The assistance in implementing and maintaining processes that include nearly all organizational activities and may be costly to accomplish (both in terms of time and money) and frequently do not have a straight visible return on investment.

## **2.5. CONCEPT OF KNOWLEDGE MANAGEMENT (KM)**

KM is defined in many ways and from various perspectives; interestingly, no single description can clarify the entire picture, since different authors saw KM from various perspectives. The study of knowledge, on the other hand, dates back to ancient Greece. Previously, individuals shared talents, which is an indirect method of controlling knowledge. The more formal study of knowledge management as a distinct study is significantly more recent. KM has been intertwined with many other fields of study, including technology, human resource management, business, management, economics, and many more. Moreover, knowledge management is a developing subject of specialty in a variety of fields, including information science (IS). Various disciplines are contributing to and influencing the maturity of KM in their own unique ways.

The accord of knowledge by it itself differ from scholar to scholar. Some perceive knowledge as a commodity like any other, which can be stored and made independent of time and place. Others see knowledge as social in nature and very dependent on context (Ingi & Gudmundur, 2013). However, all agree on a mechanism should in the place to manage knowledge successfully. KM is not the only tool that resolves all information and knowledge creation difficulties. However, using KM, better performance attained by collaboration between individuals or groups. Besides, KM requires storage for information and knowledge, which is open to organization member for searching critical information, knowledge or the best practices. Thus, KM must consider as an organizational process used to attain improved performance due to effective knowledge sharing and organizational learning, recognizing and developing competencies, and gaining from individually different skills and knowledge.

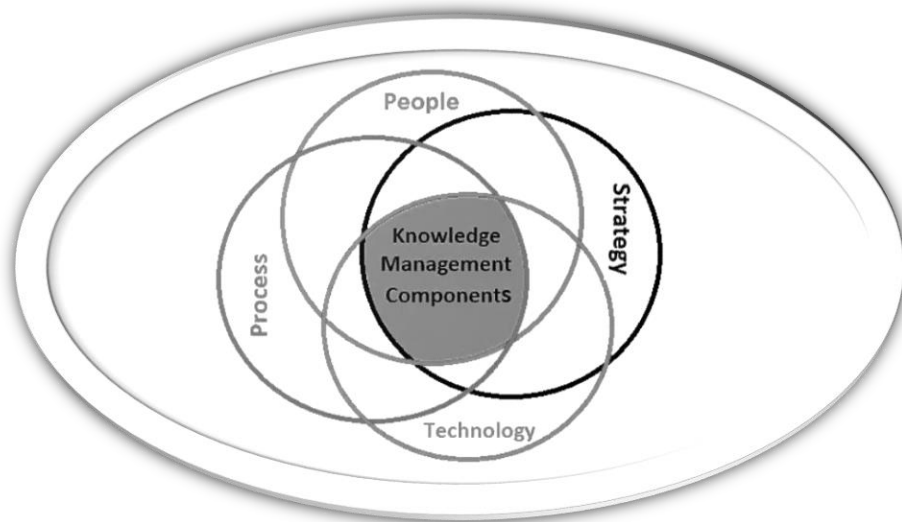
KM is about developing, sharing and applying knowledge within the firm to gain and sustain a competitive advantage (Petersen and Poulfelt, 2002). The attractiveness of the discipline

amplified promptly in the last decade, and it has become a vital topic of management philosophy. In addition, KM has been widely used recently by firms and organizations in order to improve decision-making, product innovation, productivity and profits (Edvardsson, 2006). KM is a flourishing field of research and interesting to both academics and professionals (Bontis and Serenko, 2009). Practitioners work in an environment of rapid environmental change and information overload, which increases the need for knowledge in order to make sense of large quantities of disparate information and data (Malafsky, 2003).

Organizations utilize a variety of KM methods and approaches to identify, represent, and disseminate knowledge, expertise, intellectual capital, and other kinds of knowledge for efficiency, utilization, and transfer of knowledge and experience within the organization. It is sufficient to address critical concerns of organizational adaptability, survival, and competency when they challenged by unforeseen environmental change (Sunil Kumar Agrawal 2013). Therefore, KM supports an organization in creating, assimilating, disseminating, and applying its knowledge.

Knowing the components of knowledge management enables you to pay attention to these components so that the results, in the end, return to knowledge management as a whole. The components of knowledge management denote to the features that knowledge management contracts with to create or use knowledge in the organization. There are four components of knowledge management: People, Process, Technology, and Strategy.

These four components of the knowledge management system grasp the significance of the pillars on which the entire knowledge bases systems and decision-making processes be dependent. Therefore, missing in either of these will cause difficulty leading to the failure of the systems. Hence, appropriate attention should apply to these components by the organizations for nourishing the antagonism and making headway further.



*Fig2.3. components of knowledge management*

**People:** are the ultimate holders of knowledge and responsible for boosting knowledge management. Therefore, the plan is to increase people's efforts, make them involved in internal processes and to teach them the benefits of sharing. Moreover, knowledge requires thinking, planning, and execution. Without people, KM functions cannot achieve.

**Process:** The knowledge management process increases the human-to-human interaction and develops a healthy relation between them. The knowledge does not consistently flow; it is like a water tap that only drips when someone turns on the tap. Knowledge management processes enable you to gain an understanding efficiently. The goal of knowledge management processes is to obtain, create, gather, and share knowledge. A knowledge process is incomplete without these goals.

**Technology:** The use of technology is necessary if someone is planning to share the knowledge. Therefore, the success of a company is in direct proportion with the use of the latest technology. Therefore, with the technological sector's rapid advancements, a company or an organization must keep up with the latest trends. If someone has enough content to share with others, he needs a platform that can help post his material to see them.

**Strategy:** The strategy must construct by keeping in mind the tools, roles, and budget and the positive impact of knowledge management on the organization. A proper strategy on utilizing the required tools in a low-cost budget will increase the organization's worth. It is necessary to understand the needs and demands of the organization to achieve success. An organization is successful only if it follows the needs and demands of the customers. Different strategies designed to aid in understanding the needs and demands of the masses and help in gaining proper knowledge.

## **2.7. KNOWLEDGE MANAGEMENT IN PROJECT ENVIRONMENT**

Individuals and organizations learn from experience and through time the probability to gain knowledge about themselves, about the way they work and about their customers become more and more. However, the learning process may not be a natural process or there is a structured way in order to learn and share as much lessons as possible from every project or experience. It is true that in today's dynamic marketplace and under continuous competitive pressure, organizations often tend to concentrate on moving faster from one project to another rather than worrying about their learning processes.

Sound knowledge management is critical to the delivery of current and future project performance in any project-based organization (Olivier Serrat, 2021). Knowledge is a strategic asset that may use to gain a competitive advantage. Project management methods, on the other hand, often specify common project stages, procedures, templates, or activities that repeated across several projects. Documenting choices and assumptions about resources, time, quality

requirements, prices, and so on is a good method to save and communicate critical information: What is the purpose of the project, or what problem is it attempting to solve? What are the project's goods or deliverables going to be? Who will be involved in the project, and how will those involved in the project? Moreover, in the end, experience enhances the definition of project management best practices (Grillitsch, Müller-Stingl, Neumann, 2007).

Projects should be designed and implemented as a knowledge carrier, not products. Project environments should open up for learning, it is essential to recognize that projects are not all the same. Realizing this will help project-based organizations maximize opportunities for knowledge management both within and across projects by applying techniques appropriate to the nature of the projects. Conveniently, Rodney and Robert (1993) have shown that projects fall into four discrete types, which are Well-Defined Goal and Methods, Well-Defined Goal, Poorly Defined Methods, Poorly Defined Goal, Well-Defined Methods and Poorly Defined Goal and Methods.

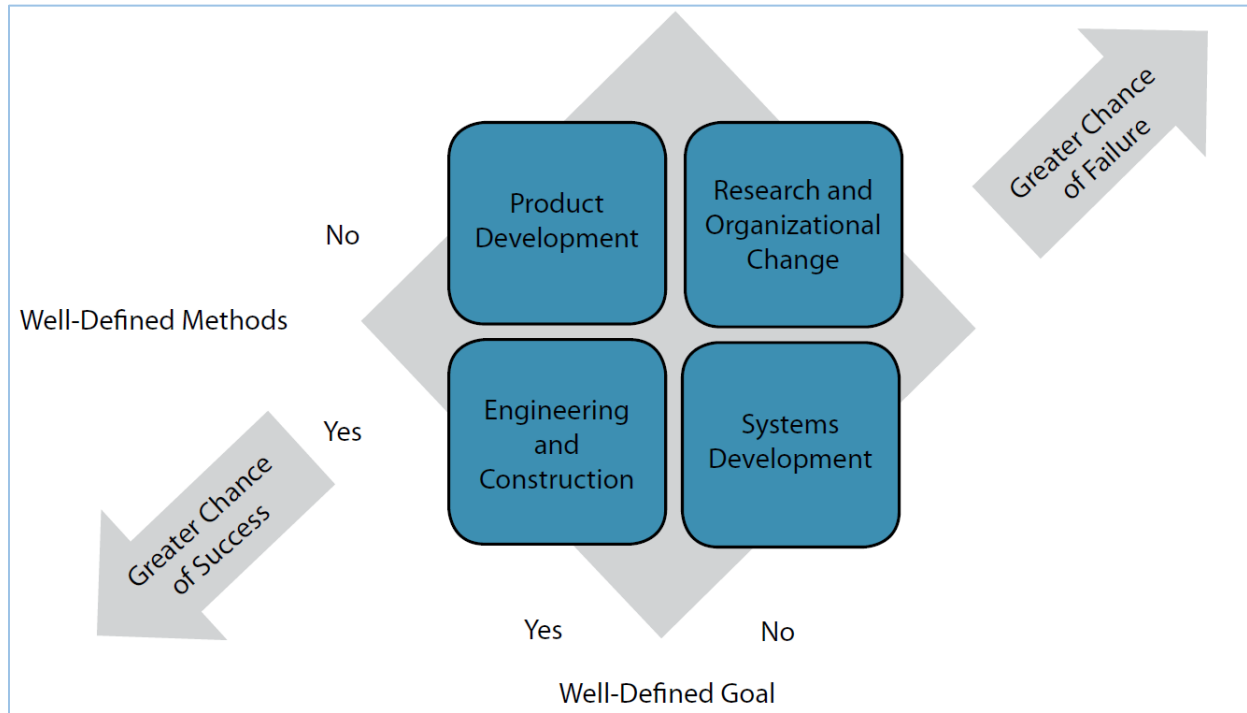
***Well-Defined Goal and Methods:*** In this type of project environment, main activities of knowledge management include regular, effective meetings and presentations during which team leaders lead skilled implementers in well-defined activities set against milestones, communicate experiences and learning, and hold problem-sharing sessions or project clinics. Briefings organized with effect to support knowledge sharing in a structured project environment allowing sequenced communication, connection, collaboration, and capitalization.

***Well-Defined Goal, Poorly Defined Methods:*** has a well-defined goal but poorly defined methods. For this case, while the functionality of the required product known, how that is to be achieved is not sufficiently clear. In this type of project environment, advisable aids to knowledge management include collaboration mechanisms to identify peers who may have encountered and dealt with similar problems in the past.

***Poorly Defined Goal, Well-Defined Methods:*** has a poorly defined goals and well-defined methods. In these instances, in the search for sharper definition of the goal, milestones representing completion of lifecycle stages come to the fore but should not blind team members to the complicated and complex and to the need for emergent strategies, with willingness to embrace failure on the way. In this type of project environment, useful aids to knowledge management center on people issues and the sponsoring of informed dialogue. Coaching and mentoring, knowledge facilitators, and internet forums would all score highly as team members agree on the goal in close working relationships.

***Poorly Defined Goal and Methods:*** has a poorly defined goals and methods encompass research and organizational change projects. From the onset, team members must define the mission, engage in scenario planning, navigate and practice the strategy, refine the objective, and assiduously cater to team building and engagement. There is no stable project configuration: inspiration, negotiation, and communication are paramount in a conflict-prone state of affairs. In this type of project environment, valuable aids to knowledge management include (i) harnessing

top talent, (ii) being flexible about the procurement of new skill types, (iii) stimulating creative thinking, (iv) identifying peers in and outside the organization, (v) tapping internal knowledge markets, and (vi) managing change.



*Fig2.4. Categorizing Project Types (Source: Adapted from Rodney Turner and Robert Cochrane. 1993. Goals-and-methods Matrix: Coping with Projects with Ill-Defined Goals and/ or Methods of Achieving Them. International Journal of Project Management. 11 (2). pp. 93–102.)*

## 2.7. KNOWLEDGE MANAGEMENT AND PROJECT HUMAN RESOURCE MANAGEMENT

Knowledge as an asset and knowledge management as processes gained significant awareness in both strategic management, and strategic human resource management literature, as a method to enhance performance and obtain competitive business advantage. HRM effectiveness in general relies on KM practices as well as on standards of management’s strategic alignment (people, firm, knowledge) and vice versa, KM has examined as a factor effecting HRM performance (Figueiredo et al., 2018). From the perspective of strategic human resource management, the collection of integral human resource activities that support an organization’s strategy leads to the sustainability of a competitiveness.

According to Bounfour (2003), knowledge management is a process "Infrastructure, procedures, technical, and administrative instruments used to generate, share, and apply information and knowledge both inside and outside of organizations. In addition, KM viewed as

"a repeated procedure of treating actionable knowledge that outcome through individual, teamwork and organizational learning to enhance the performance. Dalkir (2013) defines knowledge management as "the implementation of a comprehensive strategy for fostering the growth of knowledge in an organization." In this area, knowledge is made up of people' views, expertise, knowledge, and values, which are justified during societal interactions between participants (Nonaka & Takeuchi, 2004) to produce knowledge with a practical value and entrenched in organizational processes as a whole (Davenport & Prusak, 1998).

Researches suggests that organizations must adopt knowledge management, which enables knowledge creation and storage. Knowledge management based on resource-based perspectives that regard knowledge as an essential strategic resource, and it consists of information and knowledge, which is at the heart of HRM performance improvement techniques. Furthermore, KM supports and influences both models of HRM growth and competitive advantage (learning and performance) (Akdere, 2009). Thus, knowledge management methods implemented so that organizations may efficiently harness their actionable knowledge to improve their performance. In broad sense, human resources can contribute to innovation through supporting organizational practices that improve knowledge management. (i.e., acquire, generate, storage, share, utilize, and evaluate) throughout the firm (Sunalai & Beyerlein, 2015).

Alavi and Leidner (1999) identified three main aspects of knowledge management: (i.e. information, technology, and culture). In the first aspect, managers perceive knowledge management not just as a system for storing and retrieving knowledge, but also as a means to track who maintains and transfers knowledge. Managers link KM with available technologies on the technological side. This technology serves as the foundation for organizational activity, including the Internet and intranet, data, and tools such as decision-making tools, search engines, and multimedia resources (Alavi & Leidner, 1999). The technical capacities include information technology infrastructure, integrated databases, and the capacity to self-operate current systems, expert systems, and a collaborative collection of online and e-mail products.

Organizational learning, communication, and intellectual property nurturing are cultural components of knowledge management (Alavi & Leidner, 1999). Teamwork and knowledge sharing are examples of cultural abilities (Wild & Kenneth, 2008). A good cooperative culture must build for a successfully implementation of knowledge management practices. If the culture of the organization does not facilitate and encourage the sharing and dissemination of knowledge, then knowledge management will encounter many challenges (Tiwari and Saxena, 2012).

HRM is an important factor in gaining competitive advantages. Human resource management defined by Tiwari and Saxena (2012) as "a process to expand experience for boosting performance and its areas that contain firms, teamwork, individuals and communities of practice". Human resource management has the ability to convert other resources into output (products and services) (Yeganeh & Su, 2008). According to some academics, people management is more difficult than technological management. Furthermore, other similar organizations may

mimic other resources such as technology, but not human resources (Akdere, 2009). Effectively managing and regulating the skills and knowledge ingrained in employees' minds will generate more value in order to get a competitive advantage and increase organizational performance (Zakaria & Hashim, 2015).

According to the preceding discussion, human resource management is defined as "a set of actions and rules that influence attitudes, policies, and staff performance with the goal of leveraging competitiveness, learning ability, and improving performance" (Zakaria & Hashim, 2015). According to Gope (2018), human resource management techniques that promote individual learning, inspire and retain people, and facilitate knowledge acquisition and sharing will all improve organizational performance. Furthermore, their research indicated that traditional human resource management responsibilities improved to assist the attainment of company goals, support employees, and develop performance.

Therefore, according to Theriou & Chatzoglou (2014), organizations that follow better human resource management practices fulfill high performance through creating human resource practices supported by knowledge management and organizational learning capacity, and in return, building of organizational capabilities. Many proposes that better human resource management practices are not only related directly to organizational capability, but also indirectly related to the processes of organizational learning capability and knowledge management. Indeed, human resource management acquires a primary role in potentiating and facilitating knowledge management and learning processes (Figueiredo et al., 2016). Thus, if human resource management is on managing individuals efficiently, and if people's most valuable resource is knowledge, then KM and HRM are closely interconnected (Svetlik & Stavrou-Costea, 2007).

Studies from differing viewpoints have investigated the kind and quality of KM and HRM connections, and it is widely agreed that human resource management is not knowledge management (Pillania, 2009). According to Svetlik and Stavrou-Costea (2007), knowledge management is more complex than human resource management since it encompasses managing intellectual property rights as well as the transfer of individual and organizational knowledge. Notwithstanding, (Svetlik & Stavrou-Costea, 2007) stated that KM and HRM share common techniques, targets, and strategies when creating business components, entities, cross-functional collaboration, communication flow, and connections within and across organizations. Furthermore, they proposed an integrated and holistic approach between knowledge management and human resource management, so that when we compare the knowledge management process with human resource management processes, we will discover that both share different functions and processes. For a long time, literature has backed the assertion that employees are the most valuable corporate asset, especially when it comes to achieving successful knowledge management systems.

Employees are the means of transportation for knowledge generation, dissemination, and application. (Nilsson & Ellström, 2012), stressed that the overall organizational success is

progressively connected with identifying, recruiting, managing, and retaining high performers or talented individuals to meet the present and future demands of an organization. As a result, the HR function's primary goal is to nurture personnel in line with the company's strategic plan, choose and hire employees, educate and train them, critically assess their productivity, encourage them, and promote a learning culture (Edvardsson, 2006). Indeed, having more talented employees than the competitors is a source of human capital advantage (Medina & Medina, 2015). Human capital, according to Shaw (2013), can satisfy the requirements for long-term benefit. HRM expenditures targeted at improving the workforce's knowledge and experience to better integrate human capital.

As a result, HRM practices such as recruitment and selection, education and training, performance management, and incentive schemes are critical for properly managing knowledge (Santoro & Usai, 2018) and add value significantly to the overall the knowledge flow, i.e., knowledge acquisition, transfer, and integration in the organization (Figueiredo et al., 2016). Zhou (2018) demonstrated that various HRM practices (internal communication, training, and performance assessments) contribute an essential role in assisting businesses to increase absorptive capacity and improve knowledge transfer during mergers and acquisitions. Knowledge sharing strategies should incorporate into strategic business objectives, human resource strategies, and organizational culture to promote and sustain ongoing collaborative behavior (O'Neill & Adya, 2007).

## **2.8. KNOWLEDGE MANAGEMETN AND HUMAN RESOURCE MANAGEMENT STRATEGIES**

Hansen, et al. (1999) argue that there are two strategies for managing knowledge and they term these strategies 'codification' and 'personalization'. The strategy of codification refers to the codification of knowledge and its storage in databases, where it is accessed and readily used by anyone in the company. These organizations invest heavily in ICT for projects like intra-net, data warehousing and data mining, knowledge mapping (this involves identifying where the knowledge is located in the firm), and electronic libraries. This increases effectiveness and growth, as Hansen explains 'The reuse of knowledge saves work, reduces communications costs, and allows a company to take on more projects.' (Hansen, et al., 1999, p.110).

Knowledge transferring is closely related to exploitative learning, which is inclined to refine existing capabilities, technologies, and force through standardization and reutilization, while it is, at the same time, risk-averse (Clegg and Clarke, 1999). The strategy of personalization refers to personal development of knowledge shared mainly through direct person-to-person contacts. Dialogues, learning histories, and communities of practice are among the techniques that used in order to facilitate tacit knowledge sharing and based on the logic of 'expert economics'.

These are used primarily to solve unique problems, where rich, tacit personal knowledge is needed, such as in strategy consulting. Personalization and explorative learning relates closely

where explorative learning is associated with complex search, basic research, innovation, risk-taking and more relaxed controls. The stress is on flexibility, investment in learning and the creation of new capabilities (Clegg and Clarke, 1999). The codification and personalization strategies help to frame the management practices of the organization as a whole, as outlined in the below table.

	<b>Codification Strategy</b>	<b>Personalization Strategy</b>
<b>General Strategy</b>	Develop an ICT system that codifies, stores, disseminates and allows re-use of knowledge	Develop networks for linking people so that tacit knowledge can be shared
<b>Use of ICT</b>	Invest heavily in ICT	Invest moderately in ICT
<b>Human Resources: Recruitment and Selection</b>	Hire new college graduates who are well-suited to the re-use of knowledge and the implementation of solutions	Hire MBAs who like problem solving and can tolerate ambiguity
<b>Training and Development</b>	Train people in groups and through computer-based distance learning	Train people through one-to-one mentoring
<b>Rewards Systems</b>	Reward people for using and contributing to document databases	Reward people for directly sharing knowledge with others

*Table 2.1. Knowledge Management Strategies - Source Hansen, Nohria and Tierney (1999).*

The above table indicates, Hansen, Nohria and Tierney's study makes several useful contributions to HRM. First, it links both KM and HRM to the competitive strategy of the firm; that is to say, it is not knowledge in and of itself that is important for competitiveness, but rather how knowledge is used to strategic goals. Second, this view emphasizes the need of determining what matches best with HRM approaches, such as incentive systems, and an organization's approach to managing knowledge work. According to Hansen, the appropriate fit is as follows:

*The two knowledge management strategies call for different incentive systems. In the codification model, managers need to develop a system that encourages people to write down what they know and to get those documents into the electronic repository... In fact, the level and quality of employees' contributions to the*

*document database should be a part of their annual performance reviews ... Incentives to stimulate knowledge sharing should be very different at companies that follow the personalization approach. Managers need to reward people for sharing knowledge directly with other people (Hansen, et al., 1999, p 113).*

Hansen, et al. warn against mixing strategies. Instead they suggest using one predominant strategy and a second strategy to support the first: 'we think of this as an 80-20 split: 80 per cent of their knowledge sharing follows one strategy, 20 per cent the other' (Hansen, et al., 1999, p 112). Other studies, however, have found that a mixture of strategies was the case in highly successful knowledge management companies (Davenport and Prusak, 1998 and Kluge, et al., 2001). For example, as Davenport, et al. (1998, p 54) state, 'successful knowledge projects usually address knowledge transfer through various channels, recognizing that each one adds value in a different way and that their synergy enhances use'.

Although, there is a contradictory trend in the direction of employment relationships, such as increased control, and increasing market despotism (downsizing, outsourcing, using peripheral workforce), a tendency towards increased trust is emerging. Thus, firms are trying to improve their knowledge management capabilities by strengthening employee trust (confidence in another's goodwill) through the means of communities of practice or relational teams. As the sources of trust are familiarity through repeated interaction; calculation based on interest, and norms that create predictability and trustworthiness, the employment relationship of the knowledge economy must be based on the antithesis of short-term economic rationality.

## **2.10. RELATED WORKS**

There are some available related works that referred for this research work. Some of the works relates directly to the topic we are dealing. These related works give a very good clue to the research and minimized the time taking to investigate some repetitive study areas. Therefore, the following related works reviewed accordingly.

Mekdes (2020) tries to address designing of knowledge reuse framework for project-based organizations in the case of the case of Information Network Security agency (INSA). The research's overarching goal was to provide a knowledge management framework to promote project knowledge reuse throughout the organization, so that the organization may effectively preserve knowledge management practice while reducing the likelihood of project rework.

As a case study, the researcher used Information Network Security Agency. Data gathered using a questionnaire, observations, and document examination. This methodology laid the groundwork for identifying INSA's current project management and development areas. Because of these areas for development, a project knowledge reuse framework based on DS research methodology, which includes problem identification, objective, design, demonstration, and

evaluation. The initial stage in the DS research methodology is to identify problems by evaluating questionnaires. Then the study proposed a prototype to demonstrate the framework with its components. The study suggested that project managers, team leaders, and team members consider leveraging prior project knowledge, and the study then recommended a suitable framework to overcome that problem.

Hermella (2013), here study adopts the perspective of Kruger and Synman (2003) to assess and describe the process in which knowledge management defined, managed, controlled and implemented in knowledge-intensive Development Aid Organizations in Ethiopia. The survey assessed the level of knowledge sharing activities and suitable arrangements in place to facilitate the implementation of knowledge management initiatives in their respective organizations. Majority of the respondents indicated that their organization has strong knowledge sharing mechanisms even though not all mechanisms are yet systematic and well organized. Almost all respondents (90%) felt they have adequate ICT infrastructure in place that could support current and future KM initiatives.

Respondents have shared that their organizations are rapidly moving towards building on further developing their knowledge management practices in the coming few years. Based on the responses gathered the study concludes by recommending action points that enhance conducive conditions for effective knowledge sharing in support of development goals.

According to Lemlem (2017), information technology, organizational culture, and organizational knowledge may all improve organizational performance. Her research conducted in a descriptive manner using a questionnaire. Employees of the seven international non-governmental organizations (NGOs) based in Addis Ababa, Ethiopia, are the target population.

The analysis showed the strengths and weaknesses of the present KM component practices in these selected organizations for improved project efficiency and success. This research indicated a medium degree of awareness and acceptance of the concept and practice of knowledge management among the workforce of these organizations as a potential opportunity. Furthermore, due to the lack of an adequate knowledge management policy or strategy, various organizations continue pursuing the practice of knowledge management components in their own way, with some of them hardly making use of the KM component system portal. This situation demands organizational efforts to enhance knowledge management practice through the establishment of a robust knowledge management strategy that aligned with organizational strategy. Increase employee consciousness of knowledge management concepts and benefits, implement formal knowledge management methods, and relieve employees of work burden by redistributing organizational resources to enable them to play an active role in knowledge management activities that enhance organizational performance.

The purpose of Ghadeer A. Khawaldeh's (2010) research is to investigate the impact of knowledge management on human resource management performance using the ACHIEVE model

in selected Amman banks. Employees from four Jordanian banks made up the study's population. A questionnaire was used to collect data regarding the performance elements of the ACHIEVE model.

To determine if variables are regularly distributed, the Kolmogorov-Smirnov normality test employed. The Friedman test used since the dependent variable assessed was ordinal. In addition, one-sample t-tests used to examine the impact of KM on HRM performance. According to the findings, KM has a substantial influence on HRM performance. According to the ACHIEVE model, four of the five variables are impacted by KM to various degrees. The incentive had the greatest influence on KM, whereas the environment had the least.

Many organizations are now looking to knowledge management (KM) to address these challenges. Such initiatives often started with the development of a knowledge management strategy. To be successful, a KM strategy must do more than just outline high level goals such as 'become a knowledge-enabled organization'. Instead, the strategy must identify the key requirements and concerns within the organization, and offer a framework for addressing these. The objective of the paper is to study how human resources management (HRM) practices and employees' knowledge influence the development of strategies and, by extension, a firm's performance. The paper has also identified various studies, which have tried to portray the importance of HR practices in strategy building, giving emphasis on knowledge creation and steps of integration of both.

## CHAPTER THREE

### RESEARCH METHODOLOGY

This chapter contains the research methodology, which is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability. The following are the methods and techniques used in the study.

#### 3.1. RESEARCH DESIGN

This study followed design science research methodology. Design science (DS) develop and evaluates IT artifacts intended to solve identified organizational problems. It involves a rigorous process to design artifacts to solve observed problems, to make research contributions, to evaluate the designs, and to communicate the results to appropriate audiences. Such artifacts may include constructs, models, methods, and instantiations (Perffers, Tuunanen, Rothenberger and Chatterjee, 2007).

DSR has its own accepted common framework that is used for DS research in IS and a mental model (Tulu, Chatterjee and Laxminarayan, 2005). Researcher trained in the culture of social science research has mental models for empirical and theory building research that allow the researcher to recognize and evaluate such work and perhaps one for interpretive research as well. Even if all of these mental models are not exactly the same, they provide contexts in which researchers can understand and evaluate the work of others. For example, if a researcher reviewed an empirical paper that failed to describe how the data was gathered, he or she would probably always regard that as an omission that required notice and correction. It may be difficult for researchers to evaluate it or even to distinguish it from practice activities, such as consulting.

Perffers, Tuunanen, Rothenberger and Chatterjee (2007) developed the design science research methodology (DSRM) for the production and presentation of DS research in IS. This effort contributes to IS research by providing a commonly accepted framework for successfully carrying out DS research. It may also help with the recognition and legitimization of DS research and its objectives, processes, and outputs and it should help researchers to present research with reference to a commonly understood framework, rather than justifying the research paradigm on an ad hoc basis with each new paper.

A methodology is a system of principles, practices, and procedures applied to a specific branch of knowledge. Such type of methodology helps IS researchers to develop and present quality design science research in IS. Such type of researches always accepted as valuable, rigorous, and publishable in IS research outlets. For DS research methodology includes three elements: principles, practice rules, and a process and presenting the research.

Design science study carried out by utilizing current knowledge and experiences. According to Hevner & Chatterjee (2010), practical applicability accomplished by recognizing a practical problem and creating a solution for an existing organization. To answer the research question, a DS process model proposed by (Peppers et al., 2007) used, which consists of six steps: problem identification and motivation, defining the aim of the solution, design and development, demonstration, assessment, and finally communication. The image below depicts the DS research methodology model as well as the DSRM, activities, and knowledge base.

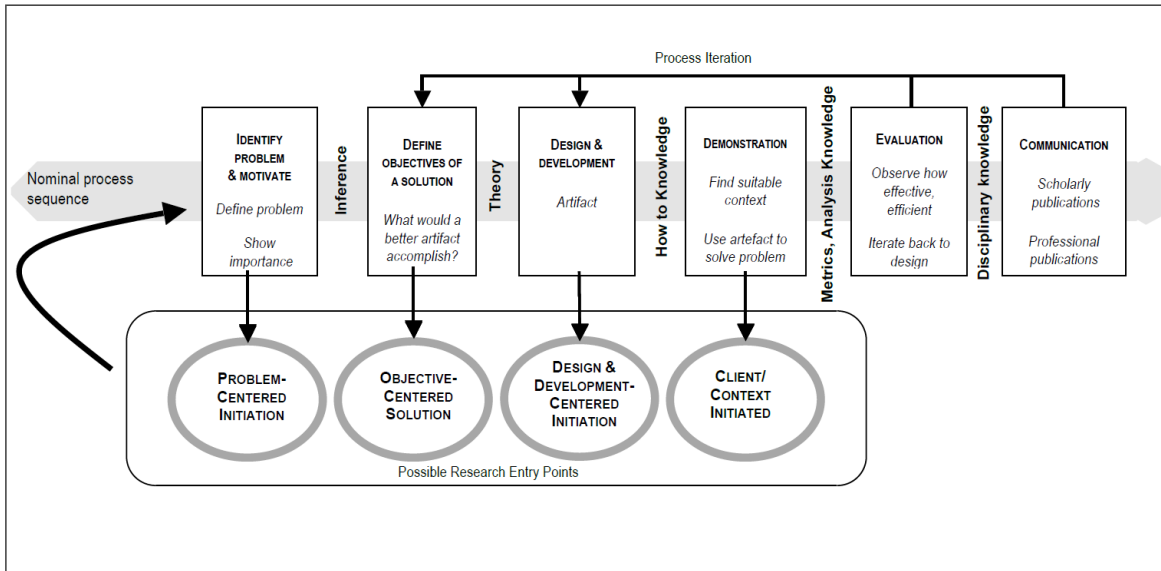


Fig3.1. Design Science Research Methodology (DSRM) Process Model (Peppers et.al, 2006).

DSRM activities	Activity description	Knowledge base
Problem identification and motivation	<i>What is the problem?</i> Define the research problem and justify the value of a solution.	Understand the problem's relevance and its current solutions and their weaknesses.
Define the objectives of a solution	<i>How should the problem be solved?</i> In addition to general objectives such as feasibility and performance, what are the specific criteria that a solution for the problem defined in step one should meet?	Knowledge of what is possible and what is feasible. Knowledge of methods, technologies, and theories that can help with defining the objectives.
Design and development	<i>Create an artifact that solves the problem.</i> Create constructs, models, methods, or instantiations in which a research contribution is embedded.	Application of methods, technologies, and theories to create an artifact that solves the problem.
Demonstration	<i>Demonstrate the use of the artifact.</i> Prove that the artifact works by solving one or more instances of the problem.	Knowledge of how to use the artifact to solve the problem.
Evaluation	<i>How well does the artifact work?</i> Observe and measure how well the artifact supports a solution to the problem by comparing the objectives with observed results.	Knowledge of relevant metrics and evaluation techniques.
Communication	Communicate the problem, its solution, and the utility, novelty, and effectiveness of the solution to researchers and other relevant audiences.	Knowledge of the disciplinary culture.

Table 3.1. DSRM activities description and knowledge base. Source (Peppers et al, 2007)

## **3.2. THE RESEARCH PROCESS**

This study uses design science research methodology. Design science is the process of creating and evaluating IT objects that designed to answer recognized organizational challenges. It entails a rigorous process of designing artifacts to solve observable issues, contributing to research, evaluating the designs, and communicating the results to suitable audiences. Such artifacts may include constructs, models, methods, and instantiations (Peppers et al., 2007).

According to Peppers et al. (2007), there are six steps to answering a study's research questions. The steps are as follows: problem identification and motivation, definition of the solution's objective, design and development, demonstration, evaluation, and finally communication.

### **3.2.1. Problem identification and motivation**

According to Peppers et al. (2007), problem identification and motivation is the first step in design science methodology. This step requires the research problem specified along with a substantiated solution. A better solution comes from clearly identify the exact problem.

Therefor to identify and understand the problem, we used primary and secondary data collected from different sources. The target is FH Ethiopia INGO, which selected because of easy accessibility, relatively better internet availability for almost all staff located at head office and sufficient ICT infrastructure. The researcher used purposive sampling for this research. Purposive sampling helps the researcher to focus on the most relevant respondents on the principle that the selected respondents would most likely be significantly and directly interested and involved in the phenomenon under investigation and hence provide a well-informed response. Secondary data is collected from different source documents like HR policy, media policy, IT policy and different types of forms. On-job observation conducted to triangulate the data collected from the interview.

Those selected persons are experts from different department that have a better understanding of knowledge and knowledge management. The experts are head of the six departments of the organization. Necessary and useful documents reviewed to get a general understanding of the activities and empirical answers from knowledge management practitioners in the context of their organization's knowledge sharing practices. Qualitative data is collected using an interview made with experts of the organization. The interview is organized using open-ended questions, which helps the expert briefly elaborate on their ideas and concerns. The experts are selected based on their significant contribution to the study. The list of experts are DFSA program Director, JEOP Director, Finance and Admin Director, Human resource director, KM & OD Manager and Deputy Country Director of the organization.

### **3.2.2. Defining objectives of a solution**

The general objective of this research is to develop an integrated project human resource management platform for FH Ethiopia in order to enhance organizational performance.

This objective achieved by gathering different requirements using different methods like administrating interview with an open-ended question to the experts of the organization, document review, and on job observation; to know about project-based organization literature review is carried out.

### **3.2.3. Design & development**

All the data collected are qualitative data that is because the selected experts are important to the research in terms of their management role in the selected organization. All the experts are a decisive role in the organization; they are the one who leads and give direction for all the departments. After collecting the data, a narrative analysis method is used to analysis and interpret the data. Narrative method of analysis chosen due to the advantage of studying the individual's speech separately. Ideas of each experts has its own value and deserves a separately investigation.

Narrative analysis helps the researcher to involve the reformulation of stories presented by respondents considering context of each case and different experiences of each respondent. In other words, narrative analysis is the revision of primary qualitative data by researcher.

### **3.2.4. Demonstration**

The researcher develops prototype because prototype helps to realize how usable and valuable the artifact is to the intended users. Prototypes helps the readers by giving insight on the relationship between the proposed framework and the implementation solution. The developed prototype is a web-based system that demonstrate the proposed framework, which helps to demonstrate the implementation of an artifact.

### **3.2.5. Evaluation**

The researcher develops a prototype of the designed solution and evaluated as per the Peffers (2012) evaluation principles. Peffers (2012) evaluation methods are Logical Argument, Expert evaluation, Technical experiment; Subject based experiment, Framework, Case study, Illustrative scenario, and Action research.

### **3.2.6. Communication**

All the outputs of the research presented for the management of the organization. The presentation includes the identified problem and the importance of the research, the artifact, its usefulness, the accuracy of the design, and its effectiveness to researchers and other significant findings. The prototype of the solution delivered as a full thesis work and the study presented to the organization.

To summarize this section, identifying and understanding of FH Ethiopian's knowledge gap clarified using primary and secondary data collected from different sources. The target is FH Ethiopia INGO, which selected because of easy accessibility, relatively better internet availability for almost all staff located at head office and sufficient ICT infrastructure. The researcher used

purposive sampling for this research. Purposive sampling helps the researcher to focus on the most relevant respondents on the principle that the selected respondents would most likely be significantly and directly interested and/or involved in the phenomenon under investigation and hence provide a well-informed response. Secondary data has collected from different source documents like HR policy, media policy, IT policy and different types of forms. On-job observation conducted to triangulate the data collected from the interview.

Those selected persons are experts from different department that have a better understanding of knowledge and/or knowledge management. The experts are head of the six departments of the organization. Necessary and useful documents reviewed to get a general understanding of the activities and empirical answers from knowledge management practitioners in the context of their organization's knowledge sharing practices. Qualitative data collected using an interview made with experts of the organization. The interview organized using open-ended questions, which helps the expert briefly elaborate on their ideas and concerns. The experts selected based on their significant contribution to the study. The list of experts are DFSA program Director, JEOP Director, Finance and Admin Director, Human resource director, KM & OD Manager and Deputy Country Director of the organization.

The objective of the study achieved by gathering different requirements using different methods like administering interview with an open-ended question to the experts of the organization, document review, and on job observation; to know about project-based organization literature review is carried out. Narrative analysis technique used to analyze and interpret the collected data. Narrative analysis helps the researcher to involve the reformulation of stories presented by respondents considering context of each case and different experiences of each respondent. In other words, narrative analysis is the revision of primary qualitative data by researcher. The researcher developed a prototype using web-based environment that demonstrate the proposed framework, which helps to show the implementation of an artifact. All the outputs of the research presented for the management of the organization. The presentation includes the identified problem and the importance of the research, the artifact, its usefulness, the accuracy of the design, and its effectiveness to researchers and other significant findings.

## **CHAPTER FOUR**

### **PRESENTATION AND INTERPRETATION OF DATA**

#### **4.1. OVERVIEW**

This chapter addresses the presentation, analysis and interpretation of the collected data through interview, document review and on-site observation. The researcher categorizes the collected data into five basic areas. First, it presents how much attention is given in the area of knowledge reuse that include the creation, sharing and storing of knowledge. The second section discuss on the availability of stored knowledge and technical experts to facilitate knowledge reusability across different projects. Then we discuss about the human resource management strategies in relation to capturing tacit knowledge from the more experienced employees. The fourth section focuses on the culture of regular knowledge capturing from expertise in order to reuse it for future project consumption and its technological support. Finally, it discusses about the role of knowledge management in enhancing project implementation capacity and its effect on the overall performance of the organization.

#### **4.2. ANALYSIS OF PROJECT KNOWLEDGE MANAGEMENT PRACTICES AT FH ETHIOPIA**

##### **4.2.1. Knowledge management awareness**

The data collected from interview and on-site observation indicates lack of maturity of awareness towards knowledge management throughout the departments of FH Ethiopia. One of the department director mentions knowledge management as, ‘virgin discipline the organization doesn’t give appropriate attention’. Most of the interviewee has personal understanding and experience on knowledge management but in organization level all agreed on the gaps in effective and efficient implementation of knowledge management.

From the physical observation, the researcher notices that most of the staff of FH Ethiopia uses google drive and drop box to store and share documents. These documents are managed individually and sharing those files depends on the interest of each individual. Whereas tacit knowledge is not well kept and managed in the organization.

Some times higher level of project accomplishment rate is recorded but the applied knowledge, experiences, designs, documents and other useful assets of that project is not transferred to other new projects effectively. One of the directors mentions a scenario that occurred in 2017; there were a project called Conservative Agriculture (CA) and has an impressive project success. At the time, this project was organized from scratch but has a very organized structure. It

was a three-year project implemented in Assosa town. The leaders of the department come together for the design of the project and able to create a very successful project implementation design.

Once the project phased out, almost all stakeholders appreciate the implementation performance of the organization in this project. The researcher was able to find some documents of success stories from the managers of the project. After two years, a new opportunity emerges on the same type of project in different location but at this time, all the activities to initiate the new project started from scratch. This is because all the project resources were not organized and stored for future use. The director who shared this story indicated the gap as absence of inclusion of knowledge management as one stream in project design. If they were able to include knowledge management in the project design, they will be able to store the success and failures of the project that can be used by other new projects.

In some projects, well-experienced employees may have a great role in successful implementation of a given project. The experts from the interview recommends inclusion of knowledge management in the project design. Besides storing documents, knowledge should extract from documents and experts that is what knowledge management implementation means.

#### **4.2.2. Human resource management versus knowledge management**

From the literature review, we can understand practices that have influence on knowledge sharing in relation to human resource management. Some practices that are identified by Gupta and Singhal (1993) are:

- Human Resource planning that ensures the availability of the right person on the right job and at the right time. Human Resource Planning supports team building as personnel with complementary skills is pivotal for a good team.
- Comprehensive Performance Appraisal that measures individual performance and team performances by considering appropriate performance dimensions. Periodic audit of performance allows the organization to initiate learning that would support superior performance and continuous improvement.
- Strategic Compensation that based on competencies and also is flexible with emphasis for experimentation, autonomy, work planning, tolerance to failure, and is performance based. Compensation also does foster team-based work, and supports dual career tracks utilizing the entire skill sets of employees.
- Bringing about congruence in employee and organizational goals, updating employee skills and competencies, continuous training and learning opportunities, and encouraging inter-organizational learning.

Laursen and Foss (2003) have identified interdisciplinary workgroups, quality circles, systems for the collection of employee proposals, planned job rotation, delegation of responsibility, integration of functions, and performance-related pay as pivotal to knowledge sharing.

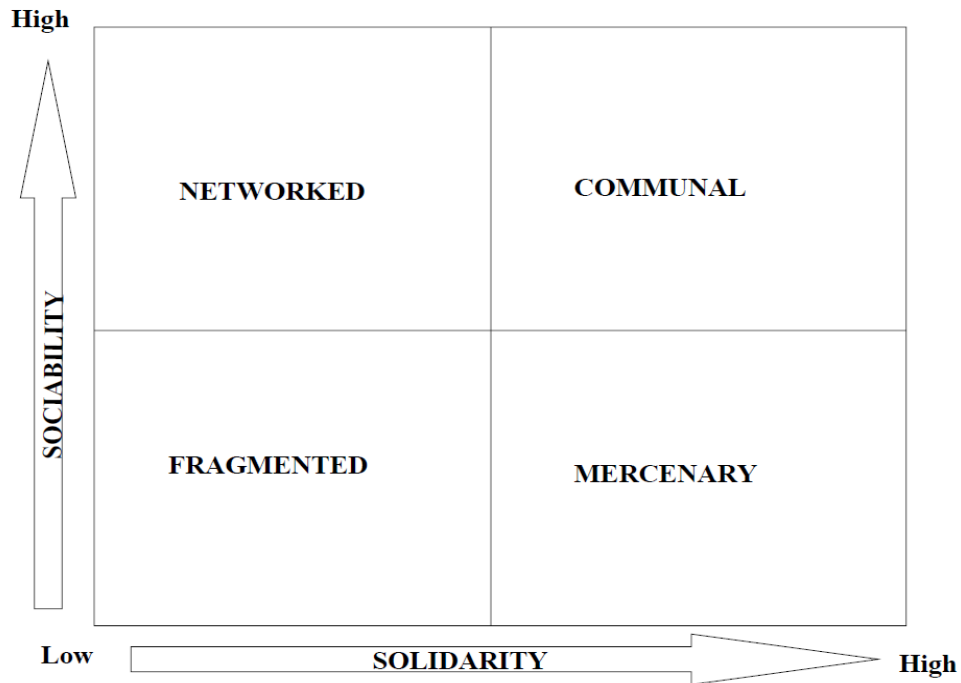
The above-mentioned integration is not visible in the human resource policy and manual documents of FH Ethiopia. From the conducted interview and organizational structure, the researcher understands FH Ethiopia has a KM section in organization development department. One technical person is handling organizational wide knowledge management tasks. The head of the department mentions some of the challenges in the department as follow:

- Most heads of departments are not willing to provide important documents to the focal person who manage and facilitate knowledge management.
- A challenge in relation to identifying most relevant information and collect them.
- Failed to plan and facilitate regular “knowledge sharing platform” with a fixed schedule in which knowledge can be share among departments.
- The knowledge management focal person at limes (though not often) consult the exit interview which is often carried out by HR departments.
- Along with department heads, the focal person is not working on the gap and capitalize on the organization’s strength.
- Failed to tell the staff repeatedly what is there in the organization’s digital library and encouraged to visit it.

#### **4.2.3. Culture of knowledge sharing and reuse**

A number of studies have shown that trust, co-operation, teamwork, and personal communication are important for knowledge sharing and reuse. It is therefore obvious that the custom in which organizations relate to staff and other organizations is essential for knowledge sharing and reuse. Knowledge sharing is encouraged through repeated personal interaction of staff during a long period, their contribution to novelty and processes, and by a high-trust relationship between employers and employees.

Knowledge sharing is widely held to be innately important to the health of any organization. Goffee & Jones (1996) shows that there is a positive relationship between a “willingness to share” and productivity, and negatively related to labor cost. In Goffee & Jones study, focus group members supposed that knowledge sharing directly linked to development and novelty, bottom line savings, increased customer satisfaction, increased shareholder value and learning.



*Fig4.1. the Four Basic Types of Organization Culture (after Goffee & Jones, 1996)*

The culture of knowledge sharing in FH Ethiopia lacks maturity. The collected interview data shows there are trials to make knowledge sharing as a culture. Department and project employees are encouraged by the management team to share their own knowledge gained through experience with other project employees. As one of the interviewees mentioned in some occasion, there is “knowledge sharing platform” where people from different departments come up with a certain topic and share, comment, reflect and ask questions.

Whereas a huge gap is observed in making knowledge sharing a culture. The below listed points are cultural gaps identified from the collected data.

- It is still necessary to make knowledge management sharing and reuse a very strong hub for knowledge transfer and to support the processes with technology solutions.
- Sometimes there may be a good startup in building a knowledge sharing environment (culture) but unexpected interruption occurs and unable to use technological advantages.

#### **4.2.4. Knowledge management practitioner in maximizing organizational performance**

The association between knowledge management and organizational performance is a thought-provoking field for researchers and practitioners, and further studies needed to shed light on this association. Knowledge management practices including creation practices, continuous learning practices, knowledge systems, and employee competency management affect the financial and nonfinancial performance of the organization (S. Razzaq, M. Shujahat, S. Hussain et al, 2019).

The key topic for researchers exploring knowledge management is to inspect the ways in which knowledge management affects organizational performance. The most effective aspect of knowledge management is the use of knowledge to impact performance.

Each staff of an organization counted as KM practitioner since he/she is the one responsible to create, share and store knowledge in the organization. The collected interview data and policies of FH Ethiopia revealed that the organizational capacity of promoting KM practices is not satisfactory and require a lot of effort. Moreover, failing to improve the usage of technological tools for KM practices indicated as biggest challenge.

### **4.3. GAP ANALYSIS**

The researcher identifies gaps from the conducted interview and physical observation. Mainly identified gaps are discussed as follow.

Almost all respondents believe that there is a weak link between knowledge creation and knowledge sharing. As they stated in the interview, this gap is created due to the absence of technology that stored and facilitate the knowledge sharing across staff. Moreover, this gap mainly created when a staff leaves the organization. More specifically, in project scenarios when a staff leaves the organization there is no any formality he/she should maintain in order to capture his/her knowledge(tacit) or experience. As the official states, there should be a mechanism in the organizational strategy towards knowledge sharing and should be well familiarized by all staff (Project managers).

The other gap observed across the organization is that there is a poor way of finding documented resources on electronic repositories. Staff are advised to store their electronic documents in the google drive and other online storages but there is an awareness and technical skill gap among staff. The other gap is also the technical skill in using these online tools. The information gain from the IT department indicates that google dive is the most predominant online document storage tool used in the organization but only one training session was organized in the past two year for the staff. Due to that, there is a technical knowledge difficulty in using the tool.

According to the interview analysis, the organizational culture toward knowledge reuse is poor. Recognizing reuse practices related to knowledge reuse influences people's intentions to engage in such practices and places a greater emphasis on reuse culture. The majority of participants are enthusiastic about reusing project information. Another gap is raising staff awareness on the benefits of reusing knowledge, but there is still a lack of commitment to put it into practice. KM helps project managers and team members with limited period of time, experience, and necessary risk reduction in projects to have the correct information and knowledge at the right time and place whenever they need it.

#### **4.4. DESIGN REQUIREMENTS**

A knowledge management platform that enables for successful project information exchange is required, according to the gap analysis above. The platform should enable precise project knowledge documentation, as well as searching and rapid access to data. The following are the design criteria for building an integrated project HRM framework:

##### **4.4.1. Organizational strategy must be in sync with KM practice**

By incorporating the KM approach, methods, and goals into the formulation of their strategy, organizations can increase their chances of success in a changing and competitive world. A documented knowledge management strategy is essential whether an organization is embarking on a new KM initiative or evaluating an existing program. Successful implementation of KM in FH Ethiopia should start from incorporating KM in the organizational strategy.

##### **4.4.2. The leader must take on a leadership role towards KM practices**

In the process of knowledge management, the leader plays a vital role. To be effective, a leader must have willingness that enable the creation, sharing, and application of knowledge inside the organization. Apart from the production, transmission, and application of knowledge, it is critical that it encourages and generates new knowledge that will help the company create value.

A leader should foster a culture of knowledge sharing by establishing a link between information sharing and actual business goals, as well as changing the organizational style to accommodate the knowledge sharing culture's implementation. A leader should promote people who contribute to the creation of a knowledge-sharing culture by awarding them and praising them, as well as giving resources that will aid in the establishment of a knowledge-sharing network among the organization's members. Furthermore, the most essential job of a leader is to integrate information sharing with an organization's principles and to encourage employees who can transfer knowledge from one to the other.

#### **4.4.3. Improving the knowledge-storage mechanism and culture**

Knowledge storage refers to the soft or hard recording and preservation of individual and organizational knowledge in a form that facilitate quick access. Knowledge storage makes use of technological infrastructure, such as informational hardware and software, as well as human procedures, to identify and code an organization's knowledge, which then be indexed and retrieved later. This strategy encourages people to keep track of their progress. A repository that allows a large number of individuals to search for and obtain codified knowledge without having to contact the person who created it originally. As a result, time and other organizational resources saved, and performance enhanced.

Culture establishes the atmosphere for social interaction, determining how knowledge used in certain environments. An improved culture influences the KM processes by which new information engendered, legitimated, and disseminated in companies, along with the uncertainties that come with it.

#### **4.4.4. Enhance access speed by facilitating searches**

Once the query is submitted the search engine, searches the knowledge base based on the criteria chosen by the learners and returns with the results. The results will comprise tacit knowledge for the record, which entered by the domain experts for each information. Keywords and description are two factors that consumed by the KM search engine. Users can search the knowledge base for information by using these conditions as query options to find various sorts of data.

#### **4.4.5. Developing motivational scheme**

Traditional HRM attempts for motivating employees. However, the traditional reinforcement mechanism may not be compatible with the demands of knowledge workers. To address the challenges of inspiring knowledge employees, new HRM efforts are required. Organizational HRM policies and practices should be responsible for creating the environment in which high-level of motivation reached. By utilizing inspiring tactics such as salary, appreciation, and promotion, this would include giving encouragements and rewards, pleasurable work environment, and chances for learning and progress. The challenge of developing trust and fostering commitment is at the heart of this.

#### **4.4.6. Document standardization**

Document standardization improves company efficiency and effectiveness by correctly arranging business information to allow for faster and more effective document and information retrieval. By sharing best practices and successful innovation, it contributes to KM by enhancing company efficiency and effectiveness. Standardization is the process of incorporating new and current information technology to help potential users achieve their business goals. This offers a way for people to record, exchange, and disseminate their knowledge.

#### **4.5. OBJECTIVE OF THE SOLUTION**

This research tries to develop an integrated project human resource management platform in order to enhance organizational performance. The platform enhances the KM processes, justifies the strategic implementation of KM and, incorporates various models of KM in project HRM processes. In this way, the platform will promote and support the retaining of project knowledge. Therefore, the probability of losing project knowledge including tacit knowledge will minimize even if more experienced staff leave the organization. This platform facilitates in decision-making for the advantage of FH Ethiopia. This leads to greater productivity in terms of less job duplication, which followed by noticeably enhanced performance, improved new staff competencies, and improved quality judgments.

More specifically, in project-based organization most of the activities are conducted in project sense. In turn, knowledge management considers the problems of continuous learning, which cause the challenge of knowledge inheritance in project context. Simultaneously, knowledge is an area of interest in organizations as a source of competitive advantage. Appropriate KM implementation ultimately improves organizational performance.

The platform makes easy of the KM processes by facilitating the creation, extraction, storing and sharing of explicit and tacit knowledges of FH Ethiopia. The platform enables staff to upload, download, and search and make it easier to gain project document for reuse purpose in order to reduce project rework. Due to the effective implementation of the platform, the following advantages are expected:

- Easy and effective project knowledge sharing
- Staff will have access to project knowledge
- Retaining of explicit and tacit knowledge of experts for project knowledge

## **CHAPTER FIVE**

### **DESIGNING AN INTEGRATED PROJECT HRM PLATFORM**

#### **5.1. OUTLINE**

In this chapter, the researcher tries to provide possible solutions for the challenges listed above. The solution for the listed challenges comes out after an intensive study. The researcher uses expert's knowledge, observation and Literature review to come up with a desirable platform that can facilitate the project KM throughout the organization.

Effective implementation and coordination are required among the KM practitioner in order to improve the effectiveness of the platform. To comprehend the real principle of Knowledge Management, one needs to conceptualize knowledge itself. Knowledge is dynamic and represents a process of understanding (a social process); knowledge management, as a complete and thorough phenomenon primarily subject to "People" and has evolved into a method of accelerating knowledge generation and exchange in the sociocultural settings.

The significance of assessing the HRM processes in the light of KM practices help the researcher to easily model for a solution. One might argue that while analyzing the whole HRM subject, there is compelling encouragement on the relevance of KM. Mutual consideration in both disciplines might be generated in terms of the human-centered focus of KM, creating the essential importance of human resources as the primary bearer of critical organizational knowledge (mostly tacit). Both disciplines of study claimed to have a similar understanding of concepts and merged to produce an appropriate framework. The resultant prepositions and the emerging framework may be able to clarify significant concerns and drive practical considerations.

#### **5.2. REQUIREMENTS FOR DEVELOPING AN INTEGRATED PROJECT HRM PLATFORM**

The researcher believes KM to be a "process" by referring to Probst, Romhardt, and Raub's (2000) model on KM processes utilized as a knowledge lens in the field of HRM. Based on the logic that both KM and HRM models implement, we may combine the two utilizing a systematic and coherent manner.

This thesis aims to demonstrate a theoretical synthesis building up a conceptual knowledge base. Literature in KM and HRM and, expert's viewpoint from the interview is used to develop a conceptual framework. The following listed points exposes how KM should be integrated in project HRM. Integration between project HRM and KM can be view from the following perspectives.

## **Establishing shared goals**

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Setting shared goals for knowledge management can be viewed as an important component of project human resource management, and a focus on ascertaining key knowledge capabilities in different individuals and teams could help establish the right vision for ongoing development processes and future stages at an early stage. Using the resource-based viewpoint (RBV), the argument bases on the assumption that variances in HRM procedures in organizations manifest a logical variation in their total ability to create sustainable organizational performance.

## **Establishing knowledge-centered project human resource management goals**

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Knowledge-centered project HRM goals will give way to the enhancing the project HRM process, this include the development of knowledge-oriented human resource development methodologies and programs using a knowledge-focused approach. Different types of knowledge, such as tacit and explicit knowledge, would need various acquisition methods, necessitating the development of corresponding HRM strategies and programs. To embrace the idea of tacit knowledge, which is closely connected to "knowledge in action" HR training and development approaches and programs, must focus on providing social settings and human actor interaction rather than relying heavily on technological alternatives.

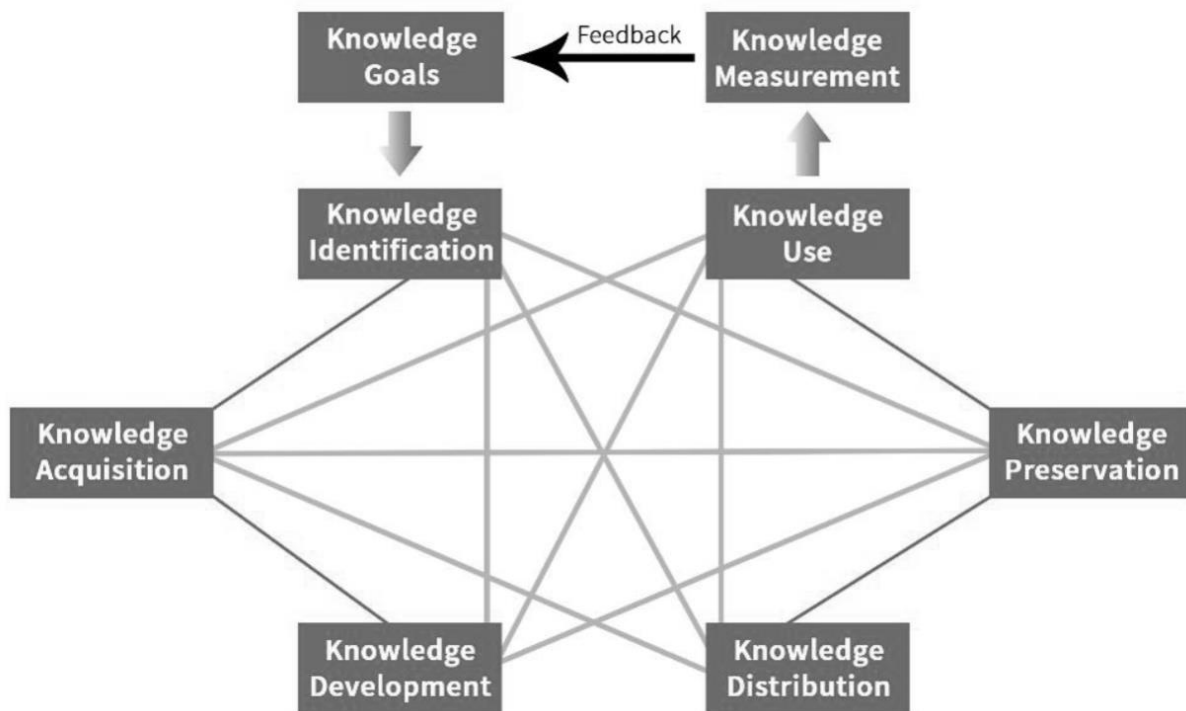
Human resource professionals need to develop policies and plans that cover the explicit and implicit aspects of knowledge. Therefore, organizations should develop training methods that can utilize stored organizational memory through the distribution of knowledge, and methods that should focus on interpersonal interaction to promote the socialization and interaction of various participants in formal and informal settings.

## **Implementation of knowledge-oriented project HRM**

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The careful implementation of an effective training program can ensure the benefits of enhanced skills, dynamic and efficient human resources. It will also be needed in future human resource management plans to help promote knowledge sharing and strengthen learning to improve the efficiency of individuals and organizations. Knowledge exchange and transfer closely integrated into daily life, and organizational activities will establish a knowledge-oriented development structure. Explicit knowledge sources and informal social platforms used in communities of practice can coordinate work to produce synchronous transfer and use of knowledge.

More emphasis needs to be in the place on different kinds of learning to make stronger the total competences of the employees. Both formal and informal settings can guarantee a space for active learning and development on the job. Knowledge-intensive companies revealed that the secret to their success lies in the way employees participate in the cycle of continuous learning. Various types of training programs suitable for different level is required, because the knowledge requirements of each level may require different types of applications.



*Fig5.1. KM Approach Model Adopted from Probst, Rahb and Romhardt (2000)*

### **5.2.1. Knowledge Goals in the HRM**

Knowledge objectives represent the first stage of KM creation, which revolves on various sorts of knowledge goals on various levels. Traditionally, the fundamental objective of an organization was to turn information into organizational memory by utilizing all available sources of knowledge. Integration of knowledge goals in project HRM is a support function that really directs the entire KM key actions.

### **5.2.2. Knowledge Identification in HRM**

FH Ethiopia should understand the many types of information they require and identify essential sources that might help them enhance their total knowledge base. Recent HR methods including a modified form of business process reengineering and flattening the organization make it even more difficult to sustain and maintain informal knowledge exchange channels. Effective KM ingenuity generates justified internal information flows and assists employees in their knowledge-based endeavors.

### **5.2.3 Knowledge Acquisition in HRM**

Information skills needed to gain a competitive advantage, and acquiring knowledge from different sources both inside and outside the company can help to maintain that advantage.

Organizations that wish to increase their capacity for continuous knowledge manipulation at various levels may hire knowledge experts in permanent roles or in a variety of other settings.

#### **5.2.4 Knowledge Development in HRM**

Individuals and teams were active in this part of the process, which comprised of practices targeted at increasing the organization's overall knowledge stock. Employees are encouraged to foster learning through mutual sharing and teamwork, as well as the creation of new information and a problem-solving attitude. For the creation of knowledge, specifically tacit knowledge, designation of power, a trust-based atmosphere, and a corporate vision of mutual benefits are all compulsory.

#### **5.2.5 Knowledge Distribution in HRM**

It is important to share this enhanced source after knowledge stockpiles have produced. Organizations will guarantee that information transferred both formally and informally from repositories and stock to interested parties. A geographically distributed company will rely heavily on networked systems that effectively distribute information to numerous individuals, teams, and divisions. This will save money and time, as well as allow for a faster response to customer demands and more services that are exact.

#### **5.2.6 Knowledge Use in HRM**

Knowledge management's major objective is to guarantee that the company's knowledge properly exploited through a systematic and continuous procedure. As the true meaning of knowledge embedded in the idea of "activity," this necessitates organization-wide actors ensuring that collected information put into effect. HRM's focus is mainly on managing human capital, which is one of the predominant actors who carries knowledge. Therefore, HRM process should carefully designed in the way to extract the knowledge located in the hands and minds of the staff.

#### **5.2.7 Knowledge Preservation in HRM**

The developed knowledge stockpiles have to be kept in such a way that the most significant pieces of information can be transferred to other projects. The preservation of knowledge repositories might bring long-term benefits to organizations by facilitating the sharing and reuse of their data. Most importantly, in order to preserve this continuity, knowledge workers needs reward and motivation factors. We know that the organizational memory would be worthless without them.

#### **5.2.8 Knowledge Evaluation & Measurement**

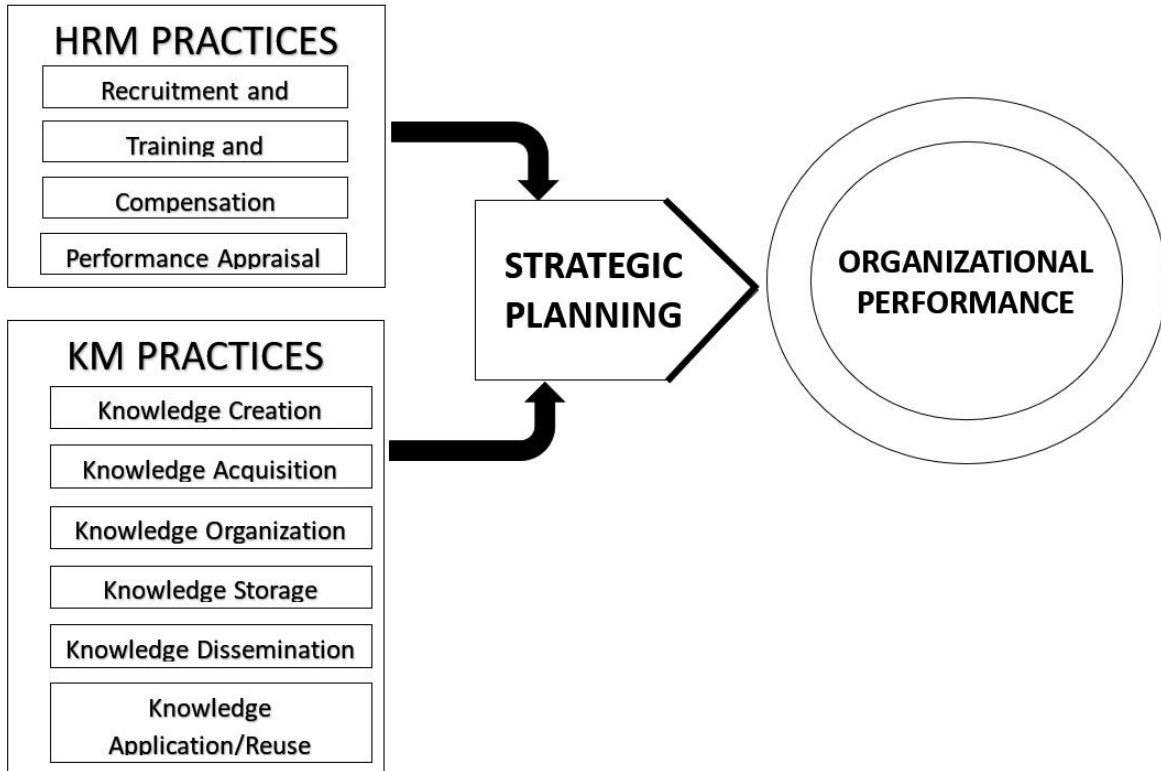
In the KM approach, evaluating knowledge in terms of overall stock quality and process efficiency is a contentious and challenging phase. Setting KM evaluation criteria is difficult since it is a subjective and time-consuming process. The overall cost of the evaluation may exceed estimates since specialists will commit a substantial amount of time and resources to the process. Many companies would continue to invest in this key phase because they feel it offers a better

return on investment. Probst et al. (2000) advises that this knowledge progression model utilize as an incorporated mechanism, meaning that each phase and action contributes to the overall KM strategy.

### **5.3. PROPOSED FRAMEWORK OF INTEGRATED PROJECT HRM FOR FH ETHIOPIA**

The groundwork for integrating knowledge management into the project human resource management function is laid forth in this section. The goal is to establish the basis for comprehending the concepts of human resource management and knowledge management. A more knowledge-centered HRM approach would come from integrating knowledge management procedures into HRM aspects; Furthermore, for this integration to be successful, scholars have emphasized the need of developing and sustaining a knowledge-centered approach in HR practices in general, and organizational culture in particular (O'Dell & Hubert, 2011a, 2011b). Among activities focused on a knowledge-centered approach, information sharing and transfer has been the most prominent field of study (Ford & Chan, 2003).

The researcher used literature reviews and Zeyad Alkhazali, Issam Aldabbagh and Ayman Abu-Rumman (2019) finding to propose a conceptual framework to integrate project HRM and knowledge management practices. Zeyad Alkhazali, Issam Aldabbagh and Ayman Abu-Rumman (2019) identify the association between HRM Practices, KM Strategies and Organizational Performance. In addition, they have proposed the following framework, which can applied for the gaps identified in FH Ethiopia.



*Fig5.2. Proposed conceptual framework for this research (this framework is created by modifying the framework proposed by Zeyad, Issam, Ayman (2019) as per the design requirements of the study)*

We can interpret the above conceptual framework based on our design requirements and giving a solution for the stated gaps. This conceptual framework gives a better solution insight for the specific gaps that indicated above and may facilitate the knowledge management processes of FH Ethiopia.

According to Zeyad Alkhazali, Issam Aldabbagh, and Ayman Abu-Rumman (2019) HRM techniques has a favorable impact on organizational performance among Jordanian bank departments. According to the findings, HRM practices are the most important driver of organizational success. Furthermore, data gathered from FH Ethiopia officials reveals that senior management firmly believes that stronger HR management practices result an improved organizational performance.

In the study Zeyad Alkhazali, Issam Aldabbagh, and Ayman Abu-Rumman (2019), there is a favorable correlation between KM techniques and organizational performance. The findings suggest that Jordanian banks should explore KM techniques to enhance the degree of organizational performance among departments. The results of the experiments reveal a statistically positive and strong link between KM tactics and organizational success. The officials

of FH Ethiopia believe that even if there are no strong KM techniques are in place in the organization, a better KM practices are necessary to enhance organizational performance.

In light of the overall findings, the current study was successful in addressing all of the research questions and achieving the objectives, despite certain limitations. While there are several studies on the association between HRM practices, KM strategies, and organizational performance, the current study fills in the gaps in FH Ethiopia by integrating the three components. The research was successful in implementing the moderating role of KM strategies (knowledge acquisition, knowledge application, knowledge principle, knowledge security, and knowledge sharing) in the association between HRM practices (training and development, performance evaluation, and compensation).

To summarize, the current study adds theoretically and practically to the body of knowledge in the subject of organizational performance in particular. Though the study's focus is on project-based companies, the findings will assist other comparable organizations in the city enhance employee productivity by using the study's recommendations. Apart from theoretical contributions, the findings of this research have significant managerial implications, particularly for project-based companies.

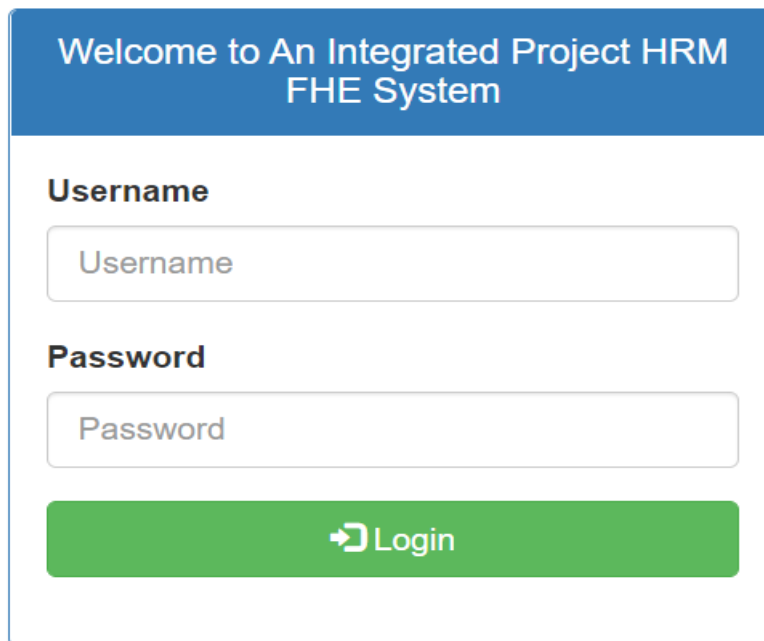
## CHAPTER SIX

### 6.1. DEMONSTRATION

In this chapter, the researcher tries to demonstrate how an integrated project HRM platform should look like in the context of FH Ethiopia and the demonstration relies on the conceptual framework presented on chapter five. A list of screen shoot of deferent interfaces shown below but a more carful development is required to implement the full concepts of the proposed conceptual framework.

#### 6.1.1. LOGIN PAGE

The login page displayed below validates the authorized staff who has an account for the system.



Welcome to An Integrated Project HRM  
FHE System

**Username**

**Password**

→ Login

*Fig6.1. Login interface*

### 6.1.2. HOME PAGE

This page gives a general information for the staff. The information includes top keywords, number of active projects, number of recently added topics etc.

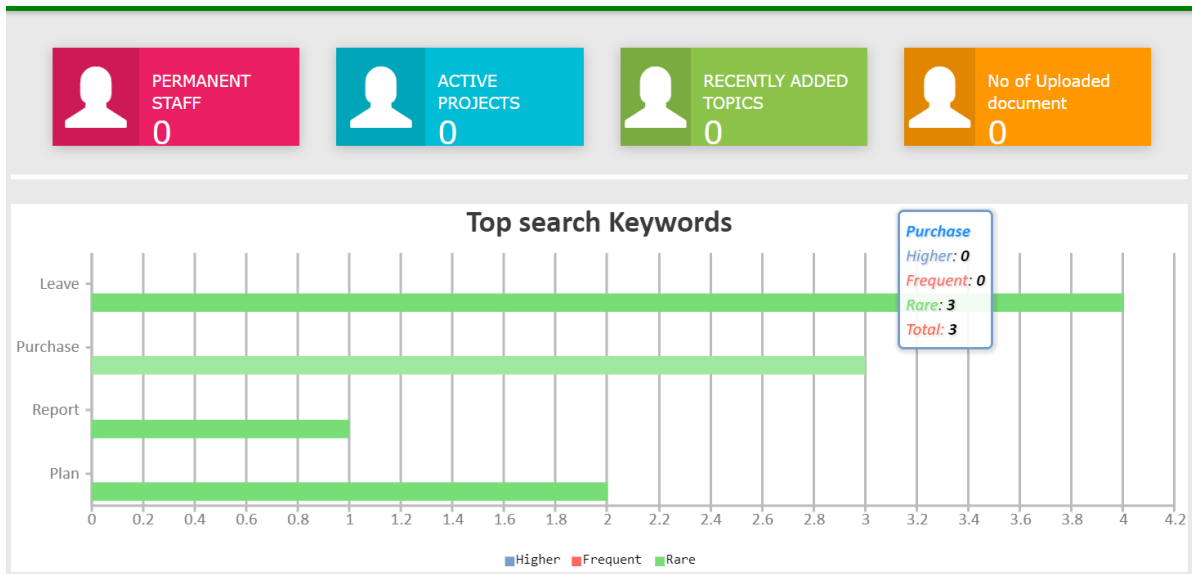
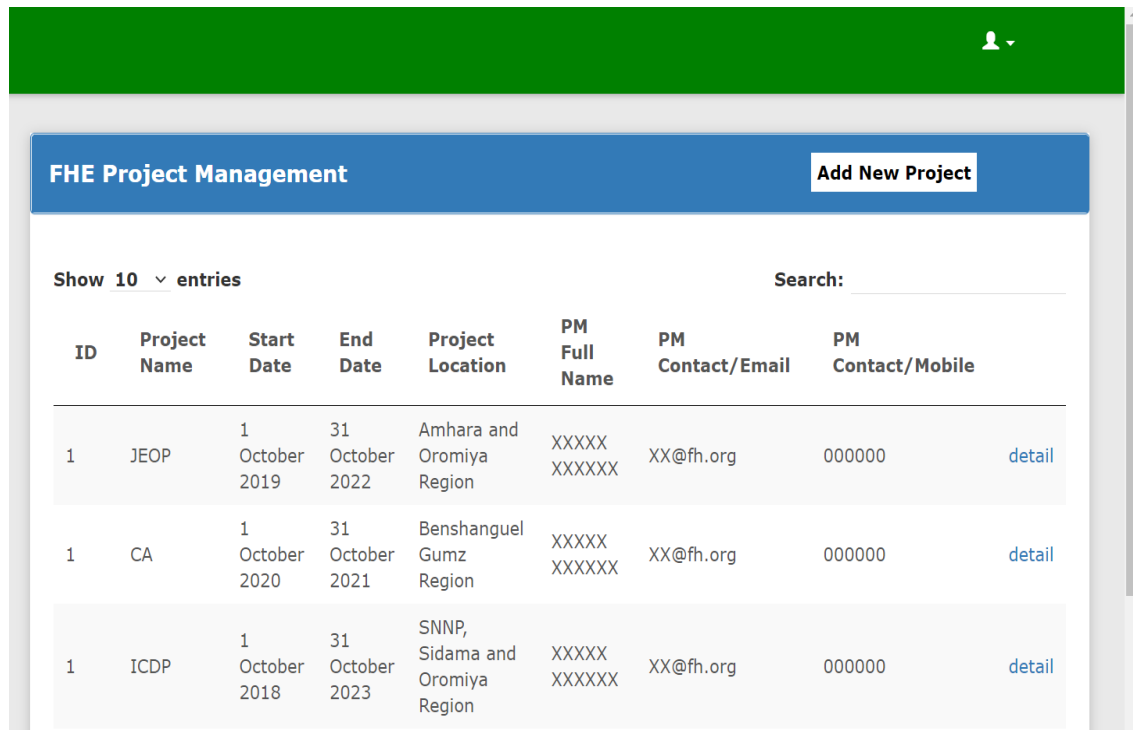


Fig6.2. Home Page for an Integrated Project HRM System for FH Ethiopia

### 6.1.3. PROJECT MANAGEMENT

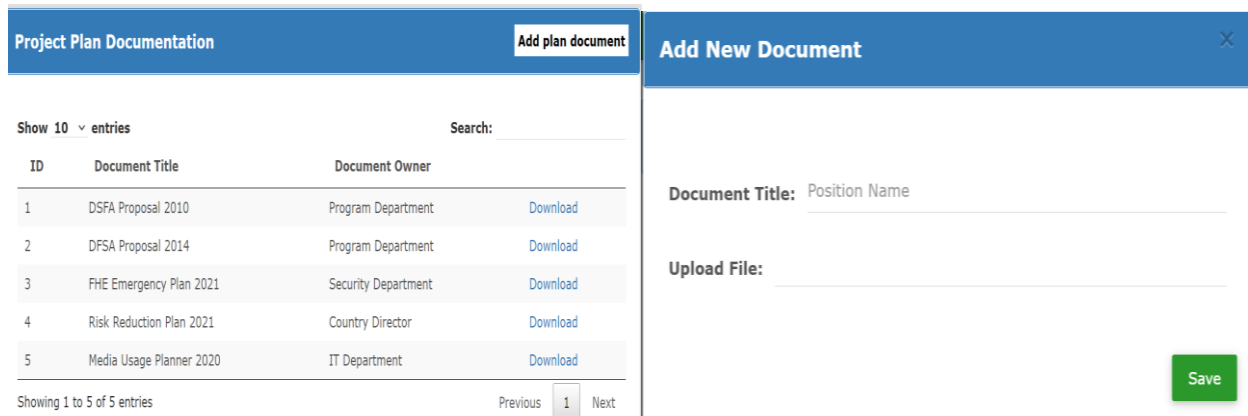
This section allows users to manage projects by adding, modifying and deleting projects. All the project attributes must list explicitly, but it not included here since this is a prototype. There is also an option to add new project.



*Fig6.3. Interface of project management*

#### 6.1.4. DOCUMENT EXPLORER

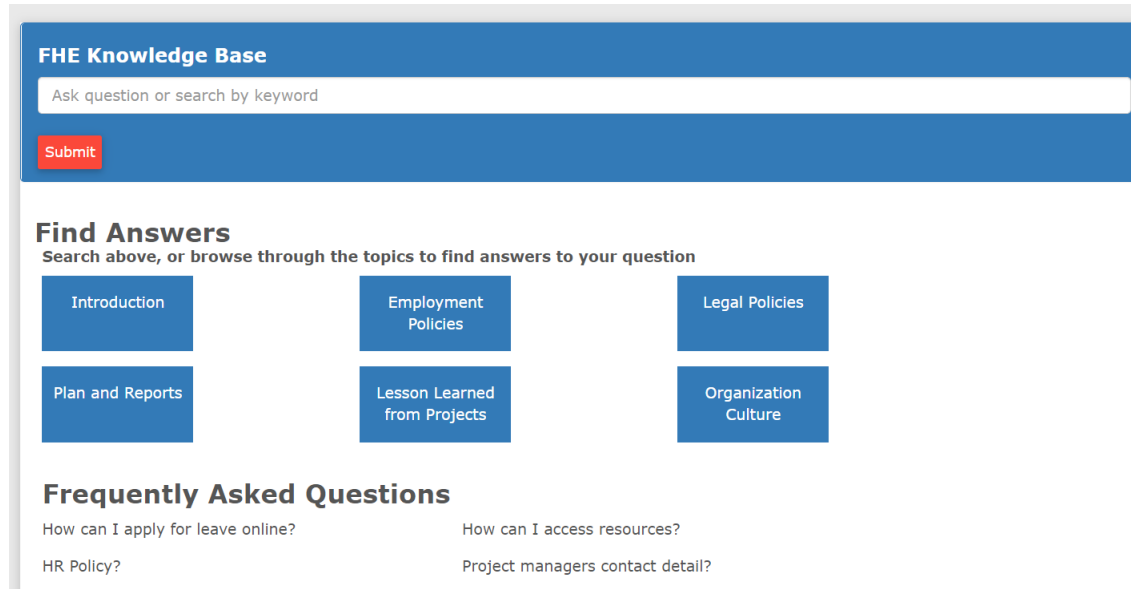
There are two options to explore plan and report documents of a project in the system. Users has an option to upload those documents too.



*Fig6.4. Show plan, proposal, report of different projects*

### 6.1.5. KNOWLEDGE EXPLORER

In this section, different ways of knowledge management mechanism are applied. There is a search facility to extract relevant information for the knowledge base. The other option is to explore information using the explorer. Space available at the bottom of the explorer describes questions asked frequently.



*Fig6.5. Knowledge explorer*

### 6.1.6. LESSON LEARNED FROM DIFFERENT PROJECTS

Lessons drawn from each project implantation and project managers are responsible to keep record of the lessons. This lesson kept recorded for imminent reference. The below shown interface help project manager to track the lessons. These lessons added to the system knowledge base automatically.

### Lessons learned from different projects

The bellow listed lessons include success stories accomplished by FH Ethiopia in different areas of the country

Add new lessons

**Lesson from Project 01**  
Lesson learned stated here

---

**Lesson from Project 02**  
Lesson learned stated here

---

**Lesson from Project 03**  
Lesson learned stated here

*Fig6.6. Lesson learned from different projects*

## 6.1.7. EMPLOYEE INFORMATION MANAGEMENT

Human resource management section is also included in the system to integrate it with knowledge management features. Even if a complete HR system is required, the below shows a prototype.

DASHBOARD

- Home
- Project Management
- Knowledge Sharing
- HRM
  - Employee Management
  - Leave
  - Time Sheet
  - Attendance
  - Training Management
  - Organizational Chart
  - Exit Interview Management

Thursday, August 19, 2021

### ALL Staff Information

Add New Staff

Print

Show 10 entries Search: \_\_\_\_\_

ID	Full Name	Employee ID	Date of Birth	Marital Status	Gender	Nationality	Status	Address	Birthplace	Contact Number
1	XXXXX	FHE001	1/1/1970	Addis Ababa	Married	Male	Ethiopian	Active	Addis Ababa, Ethiopia	00000000
1	YYYYY	FHE002	1/1/1981	Addis Ababa	Single	Male	Ethiopian	Active	Addis Ababa, Ethiopia	00000000
1	ABCDE	FHE003	1/1/1972	Addis Ababa	Married	Female	Ethiopian	Active	Addis Ababa, Ethiopia	00000000
1	GHIJK	FHE004	1/1/1970	Addis Ababa	Married	Female	Ethiopian	Active	Addis Ababa, Ethiopia	00000000
1	ASDFG	FHE005	1/1/1970	Addis Ababa	Single	Male	Ethiopian	Active	Addis Ababa, Ethiopia	00000000

*Fig6.7. Prototype of HRM*

### 6.1.8. ENHANCED EXIT INTERVIEW

To meet FH Ethiopia's design needs, enhancement on the existing exit interview form was required and figure 6.8 shows the form designed accordingly. The inputs from this form will update the knowledge base automatically. The form will aid in the extraction of knowledge (tacit) from departing employees. Please have a look at the form prototype below.

Fig6.8. Enhanced exit form for FH Ethiopia

## 6.2. EVALUATION

The researcher uses illustrative scenario design science evaluation approach. Illustrative scenarios are utilized for framework type artifacts and apply for the artifact in a real-world context to assess its utility and other important quality features (Peffer et al, 2012). The evaluation data was collected using questionnaires and interviews. The evaluation was conducted based on four elements; utility, consistency with organization, the content of framework and, the usefulness of the framework. Staff at head office of the organization are consider as a target population for the evaluation process. The researcher choos staff at the head office due to easy accessibility for the researcher than the project staff. Among the total of 85 staff at head office, the researcher randomly

draws 20 staff. The formula suggested university of Florida is used to calculate the sample size. Twenty participants were selected randomly among the staff and director of different departments. The evaluation result of the questionnaire is presented below. The questions are distributed online and google form is used to collect their feedback.

### 6.2.1. WEBSITE DESIGN QUALITY OF THE PROTOTYPE

This section evaluates the look and feel of the website is smooth and intuitive. The below figure presents evaluation result of the design quality of the prototype.

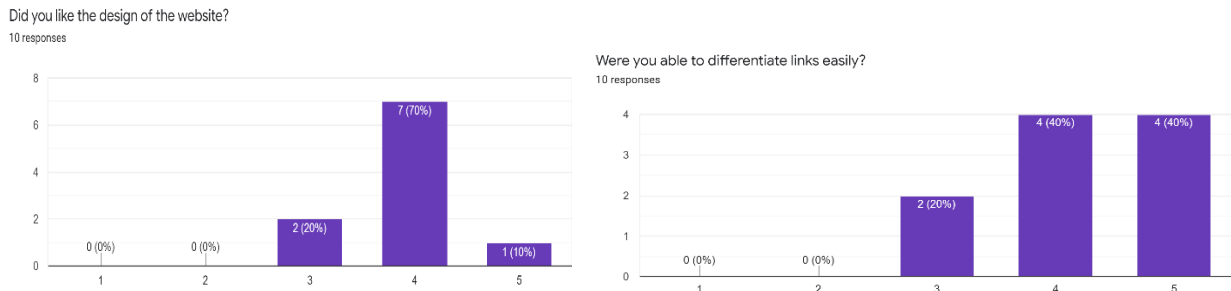


Fig6.9. evaluation result of the design quality of the prototype

As shown from the above graph most of the respondents agreed the clearness and better design quality of the platform is good enough for the user but need some modifications.

### 6.2.2. ACCESSABILITY IN DIFFERENT PLATFORM OF THE PROTOTYPE

A good website must also render well on both desktop and mobile screens. It is a very frustrating experience to scroll right or left to view the content on the tiny mobile screen. The computability and easy of access of the prototype is evaluated as follow:

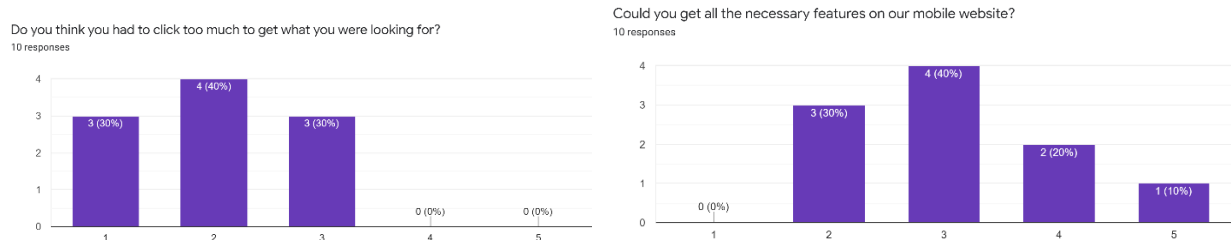


Fig6.10: evaluation result of the accessibility of the prototype

As you can show from the above graph most of the respondents are comfortable in accessing the contents of the prototype from different screen size.

### 6.2.3. NAVIGATION THROUGHOUT THE PAGES OF THE PROTOTYPE

Place the links in such a way that they are quickly found and the visitor does not have to exert too much effort to go to other pages. It is best to place the menus at the top or on the left sidebar to make them easier to find.

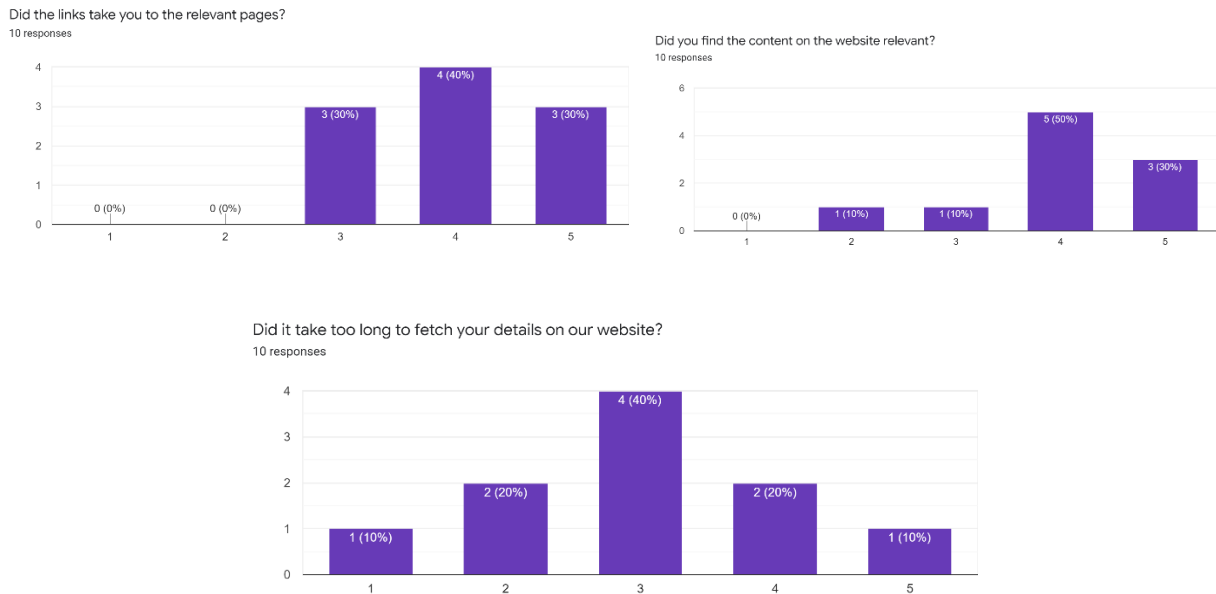


Fig6.11: the prototype's simplicity of navigation

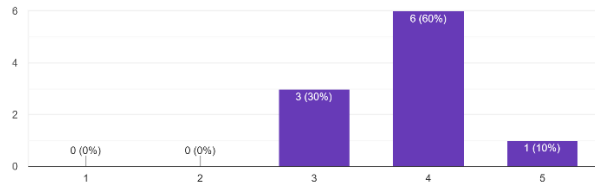
The above graph demonstrates how the respondents are satisfied with the navigation simplicity of the platform. Most of the respondents are satisfied with its navigation simplicity.

### 6.2.4. CONTENT OF THE PROTOTYPE

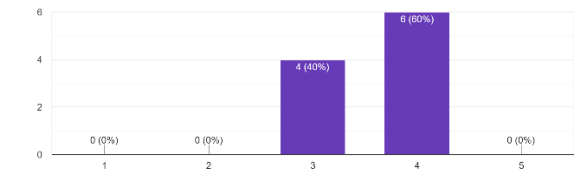
The content of the prototype is described in terms of the clearness, correctness and completeness.

Summary of the evaluation result of content of the prototype is presented in figure 6.12 below

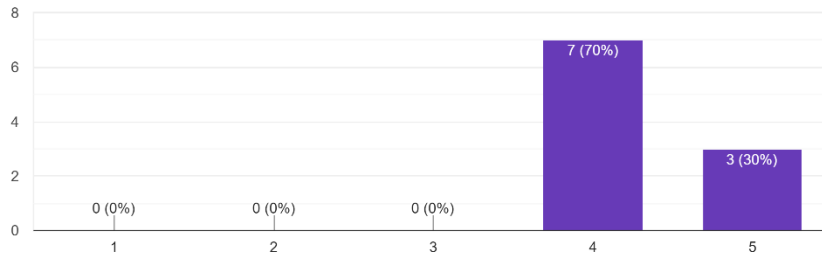
How would you rate the performance of our website?  
10 responses



Could you search the content you were looking for?  
10 responses



How likely are you to recommend our website to other similar organization?  
10 responses



*Fig6.12: content of the prototype*

As shown from the above figure 6.9 most of the respondents agree on the platform correctness and completeness and they recommend the system for other organization too.

## CHAPTER SEVEN

### CONCLUSION, RECOMMENDATION AND FURTHER STUDY

#### 7.1. CONCLUSION

The focus of this research is to integrate knowledge management into the project human resource management functions of FH Ethiopia. The improvements in the process and function of project HRM will eventually bring performance enhancement in the organization. Organizations that create and share knowledge capital and make significant investments in KM systems can gain a long-term competitive advantage in local and global markets. Furthermore, this result emphasizes the need for concentrating efforts on changing firms into learning organizations and developing learning culture. The organizational characteristics and culture of human resource managers produce a significant contribution in determining data collection, information sharing, and knowledge creation. This determines the organization's ability to grow into a learning organization, where information is used to create meaning, build knowledge, make enhanced decisions and promote performance.

The developed conceptual model depicts the key characteristics of the expanded HRM process model, in which each stage of the process is strongly linked to the related knowledge management methods and ideas. Given the growing importance of the knowledge economy and the transformation of traditional commercial organizations into knowledge-centered organizations, this model provides a favorable repositioning of the HRM function, which will be critical in the future. One of the framework's models presents a new path for future research by indicating the need to manage multiple types of knowledge (tacit and explicit) through HRM function modification and assess the resulting mechanisms for various scenarios.

The overall goal of this research is to develop a comprehensive project human resource management platform for FH Ethiopia to improve knowledge management practices in a way that improves organizational performance. To achieve the overall goal of the study, the researcher draws the following research questions: What are the current Knowledge management practices in FH Ethiopia? What type of framework is appropriate for knowledge based HRM processes? How an integrated Knowledge Management platform be developed for project HRM of FH Ethiopia?

Design science research technique used to answer the research questions of the study. The research approach follows six procedures in order to answer the research questions. The researcher used open-ended question to guide the interview with experts of the organization and secondary data used to triangulate the information collected from the interview. Through the collected data, the researcher understands a weak culture in KM across the organization. Based on the assessment and reply from the experts, FH Ethiopia has to give a higher attention in incorporating KM into

the organizational strategy. Moreover, the researcher provides a suitable conceptual framework to answer the second research question. The framework has clearly shown how the integration between KM and project HRM looks like. Finally, the research third question is answered by developing a prototype. The prototype is design based on the collected design requirements and has able to give a clear picture for the users to understand how the integration works. Therefore, the study provides a rare view regarding HRM stages through improvisation using additional knowledge lenses in the literature of HRM and knowledge management integration.

By investigating the challenges and proposing a framework of guidelines, FH Ethiopia can able to integrate KM into the HRM process, and the research objectives achieved throughout the research. More specifically, FH Ethiopia is a project-based organization, and the human resource management of the project requires great attention in retaining the knowledge (tacit knowledge) acquired in the entire project implementation scenario.

The study contributes both theoretically and practically to the body of knowledge. Though the study's focus is on project-based organizations, the findings can help other comparable organizations in the city to improve employee performance by using the study's conclusions. Aside from theoretical contributions, the findings of this research have major management consequences, especially for project-based organizations.

## **7.2. RECOMMENDATION**

To be competent in the future in terms of incorporating KM into the HRM process, FH Ethiopia must be a knowledge-based company. As a result, it is critical that FH Ethiopia expands its expertise or leverages existing knowledge in the organization in which it operates to meet its objectives. This necessitates a strong knowledge management strategy as well as the integration of KM into HRM procedures. The below listed recommendations help the organization in enhancing the implementation of KM throughout the organization.

- Identify and collect the most important information; create a knowledge management system and upload all data on a regular basis to keep the knowledge and experience gained through project implementation.
- To optimize KM practices in the company, all employees and departments must work together, and the organization must focus strategically to increase KM realization.
- Create and implement a regular "knowledge sharing platform" with a set schedule for individuals and departments to share information (tacit knowledge).
- In order for the organization to obtain knowledge (Tacit), the HRM process needs reviewing based on the above proposal.
- The knowledge management focal person should review the exit interview form, which is commonly done by HR departments. The focal person should collaborate with department

heads to narrow the gap and leverage on the company's strengths in terms of retaining information (tacit knowledge) when employees leave.

- Top executives must pay appropriate attention to knowledge management since a company cannot succeed if this vast sector neglected.

### **7.3. FUTURE WORK**

- As the study is limited to develop a prototype, other researchers could expand the suggested framework and developing full fledged platform.
- Another issue on which any researcher may study is determining the optimal HR strategy for a specific business to manage knowledge.
- Addressing similar research questions by utilizing numerous case studies, which would allow for the collection of primary data from a greater number of interviews and surveys.
- Other academicians can provide a complete framework to integrate project management into knowledge management practices, focusing on the quality of project knowledge, content, and lessons gained.

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## APPENDIX A: INTERVIEW GUIDE



**ADDIS ABABA UNIVERSITY**

**SCHOOL OF INFORMATION SCIENCE**

**M.SC. IN INFORMATION SYSTEMS**

### **Testimony**

This interview guide as part of the research conducted in order to increase understanding in the area of successful knowledge management, and to define best practices that organizations use in knowledge management and how it influence projects human resource management. This used as a tool for collecting data for a university study and will not be used for any other reason. Please be aware that your answers will be confidential and only used for conducting this study. All personal information obtained through this research will remain confidential. As such, no finding will be attributed to any of the participant as an individual. Please provide your honest opinion.

Thank you for participating.

### **Contact Information**

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## Open-ended questions

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1. Would you tell your name, position, service year in this organization first, and then your experience about “Knowledge management,” please?
2. What is your experience in knowledge reusing (*i.e. applying the knowledge obtained from one project or activity to another new project or activity*)? What does your current knowledge transfer practice from one project to another new project look like?
3. Is stored knowledge available to facilitate project knowledge reuse? In your department, do you have a technical team member to support and manage project knowledge?
4. Did the department encounter problems when more experienced individuals leave the organization? If knowledge not retained well, then it gets lost. So do you have any mechanism in place (*i.e. system that supports reusing best expertise knowledge and best experiences*)?
5. Does the organization have a culture of regularly capturing expertise knowledge (tacit knowledge) in order to reuse it for future projects’ consumption? Do technological tools support it?
6. How does your department promote the culture of knowledge sharing and reuse? What motivational scheme does your department use to encourage staff to share and apply the shared knowledge for another similar project use?
7. What do you think the role of “Knowledge Management” practitioner be in maximizing the implementation, efficiency and the overall organizational performance of projects?

## **APPENDIX B – EXISTING EXIT INTERVIEW FORM – FH ETHIOPIA**

### **Exit Interview**

Person ending service with FH/Ethiopia:

Interviewee:

Position:

Date of Employment:

Date of Termination:

Date of Exit Interview:

Interviewer:

***What did you like best working with FH/Ethiopia?***

- 1.
- 2.
- 3.
- 4.

***What are some of the weaknesses you observed that FH/E should improve?***

- 1.
- 2.
- 3.
- 4.
- 5.

***What are your wishes/hopes for this organization in the future?***

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

***Any other comments or suggestions you have?***

- 1.

***Prayer Requests***

- 1.
- 2.