KNOWLEDGE MANAGEMENT STRATEGY DEVELOPMENT,
IMPLEMENTATION AND IMPACT AT THE UNITED NATIONS
ENVIRONMENT PROGRAMME (UNEP)

BY:

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DECLARATION

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

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D61/70649/2008

This research project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

This study is dedicated to my late father Daniel Maina, my loving husband Edward, our precious son Jorel, my loving family and great friends, for their support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course.
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Firstly, I thank Almighty God for His guidance and providence which enabled me to undertake this project that was involving in term of time and resources. I also wish to express my sincere appreciation to my husband for his understanding and support during the project. I would also like to express my sincere thanks to the supervisor Dr. Muranga Njihia for having agreed to supervise this research paper and his patience in reading the drafts and occasionally guiding me, without which the research would not have been a reality.
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## ABBREVIATION AND ACRONYMS

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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>DEWA</td>
<td>Division of Early Warning and Assessment</td>
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<td>EPZ</td>
<td>Export Processing Zones</td>
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<tr>
<td>ESRI</td>
<td>Environmental Systems Research Institute</td>
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<td>ICT</td>
<td>Information Communications Technology</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>KM</td>
<td>Knowledge Management</td>
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<td>KMS</td>
<td>Knowledge Management Strategy</td>
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<td>MEA</td>
<td>Multilateral Environmental Agreement</td>
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<td>NASA</td>
<td>National Aeronautics and Space Administration</td>
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<td>OEI</td>
<td>Organizational Effective Index</td>
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<td>OfO</td>
<td>Office for Operations</td>
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<td>SWOT</td>
<td>Strengths Weaknesses Opportunities Threats</td>
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<td>UNEP</td>
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ABSTRACT

To main purpose of the study is to identify the knowledge management strategy, development and implementation process at the United Nations Environment Programme (UNEP). This study covers knowledge management strategy, development and implementation, benefits and challenges. Also covered are the theories of knowledge management and organizational value. The response to the survey has indicated the importance of knowledge management in the policy process. The research design was a case study. The study used primary data which was collected using an interview guide. An interview guide is a set of questions that the interviewer asks when interviewing. The choice of the senior and middle managers in this study is very important, as they are the head of the organization and the ones who can foster organizational objectives. Data obtained from the interview guide were analyzed using content analysis. Content analysis is the systematic qualitative description of the composition of the objects or materials of the study. The study found out that successful implementation of knowledge management include: employee training; employee involvement; open and trustworthy spirit of teamwork; employee empowerment; visible top management leadership and commitment and information system infrastructure. The study recommend that UNEP should put more emphasis on training and information sharing in order to improve knowledge sharing, institutional setup and communication command.
CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Knowledge management practice is a necessity across all types and levels of organizations which has been brought by the globalization of business, the shift from production-based to a knowledge-based economy, the growth of information communications technology (ICT), the strive to become learning organizations and the emergence of the needs for knowledge workers (Chong, 2005). Many organizations are agreeing that to grow, stay competitive and survive, they have to constantly change their strategies to meet new business demands and this explains the growth of interest in knowledge management over the last decade (Liew, 2007). Knowledge management is now recognized as an organization’s most valuable asset. Because knowledge is a complex asset, it must be managed in a different way unlike other resources. Emphasis on knowledge management has resulted from the economic, industrial and cultural developments adding competitive value to products and services by the application of human knowledge. It is the process through which knowledge is generated, synthesized, and used from the people for the people at the right time (Coulson & Thomas 2004). Businesses are now realizing the importance of knowledge management as a critical success factor in today’s dynamic borderless society.

The basic premise of this study is under the self-efficacy theory, which states that “people’s beliefs in their capabilities to produce desired effects by their own actions” (Bandura, 2012) are the most important determinants of the behaviors people choose to
engage in and how much they persevere in their efforts in the face of obstacles and challenges. The emergence of knowledge management as a business strategy for organizational performance has made scholars and policy makers interested in frameworks on how to institutionalize knowledge management. Kuhn and Yockey, (2003) proposed framework consists of three main interlinked components: Knowledge Management of the organization, Knowledge Management of the people and Knowledge Management of the infrastructure and processes. Self-efficacy theory also maintains that these efficacy beliefs play a crucial role in psychological adjustment, psychological problems, physical health, as well as professionally guided and self-guided behavioral change strategies.

An area where knowledge management is essential is in the United Nations. The United Nations is an intergovernmental organization established to promote international co-operation. According to the Organizational Effective Index Survey (OEI) published on 14 October 2009 in reference to Cooke, (1995), that 28% of the UN staff indicated that they did not have all the information they needed to do their work and are not informed of what is going on in the organization. 58% said the situation had improved in the past 12 months though 8% thought the situation was worse. The survey indicated that Knowledge Management may not have been given due consideration. The survey concluded that the United Nations, together with all of its agencies, should take note of implementing a knowledge management system to help in facilitate decision making capabilities; build learning organizations by making learning a routine; cultural change and innovation, among other benefits.
1.1.1 Knowledge management

Knowledge is the explicit and systematic management of vital data and information and its associated processes of creation, organization, diffusion, use and exploitation (Skyrme and Amidon, 1997). Today, knowledge is assumed to be the key asset in which the effective exploitation determines success for the firm (Michailova & Nielsen, 2006). Knowledge is of limited organizational value if it is not shared. It is purported to be a key competitive asset which forms the basis of a firm’s growth (Grant and Baden-Fuller, 1995) and sustainable competitive advantage (Kogut, 1993). The ability to collect, integrate and apply specialized knowledge of an organization is fundamental to a firm’s ability to create and sustain competitive advantage. The process of leveraging knowledge is a means of achieving innovation in process and products/services, effective decision-making, and organizational adaptation to the market for creating business value (Salleh and Goh, 2012). It involves organization and improvement of methods, practical instruments and tools which contribute to the managing of knowledge, in a wide sense, in every area and level in the organization.

Knowledge management is a strategy to be developed in a firm to ensure that knowledge reaches the right people at the right time and that those people share and use the information to improve the organization’s functioning (O’Dell and Grayson 1998). This in turn has created a need for businesses to evaluate the information and capabilities generated, in order to convert them into results which will add value and establish learning as a continuous process within the organization. Knowledge management is essential for enterprises to determine where they are going and for organizational survival.
in the long run, given that knowledge creation is the core competency of any organizations. It is a key requirement to future successful enterprises and is rapidly being recognized by firms to be of major strategic importance (Dyer, 2000). Jashapara (2004) notes that organizations that adopt knowledge management practices in a strategic manner are frequently identified as successful companies.

1.1.2 Knowledge Management Strategy, Development and Implementation

The knowledge management (KM) strategy is understood, within a resource-based view of a firm, as an overall change process and a form of organizational renewal, focused on innovation, through the creation, transmission and application of new knowledge (Cohen and Levinthal, 2010). The implementation of a KM strategy allows improvement of the firm’s learning capability and its ability to combine knowledge-based capabilities through the creation, storage, distribution and application of knowledge.

Creation of knowledge implies the application of intelligence, tacit knowledge and information: that involves an interaction between actions and behaviors. Knowledge management is a complex concept having several connotations. It is a process through which organizations generate value from their intellectual and knowledge-based assets (Boom, 2005). It has been defined as a discipline that seeks to improve the performance of individuals and organizations by maintaining and leveraging the present and future value of knowledge assets, and knowledge management systems encompass both human and automated activities and their associated artifacts (Newman & Kurt, 2000).
It is important to consider a number of aspects in the knowledge-creation process: the organization’s internal knowledge base; the acquisition of information and knowledge from external sources; the integration of internal and external knowledge and its application to problem solving; the creation of new knowledge and the generation of innovations from this integration, and finally the importance of the organization’s capacity to absorb new knowledge (Soo, Midgley and Devinney, 1999).

According to Chong (2005) the critical factors in the successful implementation of knowledge management include: employee training; employee involvement; open and trustworthy spirit of teamwork; employee empowerment; visible top management leadership and commitment; information system infrastructure; performance measure; knowledge-friendly culture; benchmarking; knowledge structure and elimination of organizational constrains. UNEP is the leading global environmental authority that sets the global environment agenda helps developing countries in implementing environmentally sound policies and practices. Since its inception in 1972, the United Nations Environment Programme (UNEP) has played a significant role in the development of international environmental law. It has negotiated and obtained adoption of nearly thirty binding multilateral instruments, including the landmark 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), as well as ten sets of nonbinding environmental law guidelines and principles. UNEP serves as secretariat to a number of environmental conventions, offers technical assistance to developing countries in the formulation of environmental legislation, and publishes a set of reference texts for international environmental law scholars and practitioners.
1.1.3 Knowledge Management Strategy of the United Nations Environmental Programme (UNEP)

The United Nations Environment Programme (UNEP) is an agency of the United Nations that coordinates its environmental activities, assisting developing countries in implementing environmentally sound policies and practices. Founded in 1972 it has its headquarters in Nairobi, Kenya. UNEP has six regional offices and various sub-regional and country offices (Schrijver, 2010). Its activities cover a wide range of issues on the environment, ranging from the atmospheric, terrestrial and marine ecosystems to environmental governance. It has played a significant role in developing international environmental conventions, promoting environmental science and information and illustrating the way these efforts can be implemented in conjunction with policy at national, regional and international levels.

While Office of Internal Oversight Services - the United Nations (OIOS) recommends that the United Nations System Chief Executives Board for Coordination (CEB) produce a KM strategy for the United Nations system, the Inspector is convinced that the most that can be asked of CEB is the formulation of common definitions, terminology and general standards and guidelines on KM. This is because the clients of each entity in the United Nations system vary widely; the nature of the work, the knowledge requirements and the available resources for KM also vary greatly across the organizations of the United Nations system.
Strong environmental governance structures, built on a set of networks, coordinated and initiated by international organizations, may close current participatory, operational, and institutional gaps in global environmental governance; the United Nations Environmental Programme is one such international organization that has used its credibility across different sectors in managing global affairs (Streck, 2002). People, process and technology are the three essential principles identified in the UNEP Knowledge Management strategy (duration of strategy) necessary to foster an environment that encourages the creation, sharing and effective application of knowledge. Other guiding principles are clearly defined strategic knowledge management purpose, KM as an organization-wide responsibility, KM as an integral part of staff work, senior management support to KM, decentralized knowledge maintenance, KM as an on-going activity and recognition of experience.

The implementation of this strategy is led by the executive director and deputy executive director of UNEP, the chief scientist, as well as, at their respective levels, MEA management team and UNEP senior management team (all these constitute the UNEP committee on KM). the directors of DEWA and OfO play key roles in establishing the KM strategy by establishing the principles and modalities of networking and sharing of knowledge across UNEP and with its core partners and member states, through inter alia UNEP Live. Managers have responsibilities of ensuring that: monitoring staff compliance with responsibilities in regards to information and knowledge sharing and recognizing and rewarding positive knowledge sharing behaviours. Staff are responsible in participating actively in the relevant UNEP knowledge activities.
UNEP addresses the challenges due to the lack of relevant knowledge and technical resources. It facilitates adaptation decisions by making available knowledge and technical information, strengthening institutional and policy frameworks for adaptation, and supporting countries in integrating adaptation issues into national development planning and legislative processes. UNEP works to mobilize existing knowledge and good practices at the global, regional and national levels through Global Adaptation Networks and its Regional Networks.

United Nations is taking note of recent studies which recommend improved knowledge management programs. A recommendation that KM units should be provided with necessary financial and human resources, put forward in the Joint Inspection Unit’s 2007 study on knowledge management systems in the United Nations, has been taken up in the UNEP strategy to consolidate knowledge management activities and use existing resources in smarter and more strategic ways.

1.2 Research Problem

Most organizations already have a vast reservoir of knowledge in a wide variety of organizational processes, best-practices, know-how, customer trust, culture and norms. However, this knowledge is diffused, and mostly unrecognized (Renshaw and Krishnaswamy, 2009). Determining who knows what in an organization itself could be a time consuming and daunting task. This, in itself, justifies the need for a KM system for organizations to allow them to identify and access workers’ skills and expertise. The key to successful organizations is the utilization of new technology in order to create new
products that provide competitive advantage in the marketplace. As organizational knowledge relies upon both collective and individual contributions, it logically follows that organizational knowledge is not static (Tsoukas & Vladimirou, 2011). The degree and quality of development of organizational knowledge will vary between organizations and is dependent upon attention provided to various stages of knowledge development (Jashapara, 2004).

UNEP has accumulated knowledge for over 40 years now in keeping the environment under review. However, there is relatively limited capacity in the management and sharing this wealth of knowledge across the global organization and with its external partners. There is little understanding of what “knowledge” is in the context of the United Nations system. Knowledge Management (KM) is perceived differently by different organizations. There are many different and unconnected KM projects currently in place within UNEP. Generally, they are the result of personal and ad hoc initiatives, and are not part of a comprehensive KM strategy.

Several studies have been undertaken on knowledge management. Internationally, Gold et al. (2011) researched on Knowledge Management: An Organizational Capabilities Perspective pointed out that a team-based, non-hierarchical, self-organizing organizational structure is the most effective for knowledge sharing. On their part, Claver-Cortés et al. (2007) looked at organizational Structure features supporting Knowledge Management Processes and found out that a flexible organizational structure is necessary for successful KM implementation. In the same vein, Al-Alawi, Marzooqi
and Mohammed (2007) while researching on organizational “Culture and Knowledge Sharing: Critical Success Factors” emphasized that organizational structure that is characterized by participative decision making, ease of information flow and cross-functional teams contribute positively to support knowledge sharing. Wang and Ahmed (2003) believe that the structure of knowledge-based organizations must be created in higher levels of structural dimensions. This level includes trust-based relationship, externally-oriented interactive relationship, and emotionally-inclusive relationship.

Locally, Kisina (2012) carried a research on the challenges facing knowledge management among local health sector NGO’s in Nairobi and established that the NGO’s encountered challenges emanating from failure to create a forum to share ideas, diverse cultures, hesitation to admit need for help in implementing and sustaining and a lack of commitment from all parties and confusing information with knowledge. Mbugua (2010) researched on knowledge management as a competitive advantage tool at Kingsway Tyres. The study found out that organization objective in introducing knowledge management was to leverage implicit knowledge and at the same time retaining knowledge of employees as they exit the organization.

From the above studies, it is evident that there has been little research on the development and implementation of strategies of knowledge management. This therefore leads to the following research questions: what challenges is UNEP facing in its knowledge management? What lessons can we learn in the development and implementation of the knowledge management strategy at the United Nations Environment Programme (UNEP)?
1.3 Research Objectives

1.3.1 General objective
To identify the knowledge management strategy, development and implementation process at the United Nations Environment Programme (UNEP).

1.3.2 Specific objectives
i. To establish the development and implementation process of knowledge management strategy at the United Nations Environment Programme (UNEP).
ii. To determine the impact and benefits incurred in the implementation of knowledge management strategy at UNEP.
iii. To identify the challenges encountered in the development and implementation of knowledge management strategy at UNEP.

1.4 Value of the study
The study will be of value to the United Nations Environment Programme (UNEP). Knowledge management is one of the important research areas linked to strategy development. This includes communicating vital information among employees in the organization, solving problems, knowledge sharing between and among those who directly deal with various problems may have a high probability of improving program performance. With a vibrant Knowledge management, the senior management of UNEP will be able to set a clear vision that can be achieved within a given time frame. This is because with the available knowledge, the managers can more accurately set objectives that will be possible to attain. This is more on establishing a knowledge base of what the organization’s reality looks like.
To Non-Governmental Organizations, this research will form an invaluable source of reference especially these organizations dealing with environment and natural resources in coming out with policies to guide in the management of environment. Policy makers will also find information on how knowledge management can be adopted and enhanced, and as a result put in place policies that will guide and encourage other organizations in implementing their strategies. The study will also create a monograph which could be replicated in other organizations which are facing problems in managing its knowledge.

Scholars will find it important as the study will increase the body of knowledge in this area. Those carrying out research similar to this study will be able to get information concerning importance of knowledge management development and implementation. For academicians, this study will form the foundation upon which other related and replicated studies can be based on.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of literature related to the study. The specific areas covered here are knowledge management strategy, development and implementation, impacts, benefits and challenges. Also covered are the theories of knowledge management and organizational value.

2.2 Theories of Knowledge management and organizational value

This study is anchored on three theories. These are Self-efficacy theory, resource based view theory and theory of organizational knowledge creation. These are discussed below.

2.2.1 Self-Efficacy Theory

Self-efficacy (also known as social cognitive theory or social learning theory) is a person’s belief that he/she is capable of performing a particular task successfully (Bandura, 2012). The basic premise of self-efficacy theory is that “people’s beliefs in their capabilities to produce desired effects by their own actions” (Bandura, 2012) are the most important determinants of the behaviors people choose to engage in and how much they persevere in their efforts in the face of obstacles and challenges. Self-efficacy has three dimensions: magnitude, the level of task difficulty a person believes she can attain; strength, the conviction regarding magnitude as strong or weak; and generality, the degree to which the expectation is generalized across situations. An employee’s sense of capability influences his perception, motivation, and performance (Bandura, 2012).
Theorists have defined important facets of knowledge to be tacitness, dependence, and complexity (Garud & Nayyar, 2004). First, complex knowledge is tacit in that it is highly personal and hard to express in codes (words, numbers, programming languages, etc.), as compared to explicit knowledge that is easy to express and quantify (Polanyi, 1969). Tacit knowledge is found in subjective insights, intuitions, hunches, and know-how, and can often only be acquired through experience (Nelson & Winter, 2012; Berman et al., 2010). However, information only becomes valuable as knowledge when it is combined with personal experience. In essence, tacit knowledge only exists because of people and their limited ability to understand other’s experiences through language alone.

Self-efficacy is one of the most validated and researched theory of motivation, across subject and task types (Bandura, 2012), and is an ideal theory to understand why people choose to share knowledge in some contexts and not in others. Volunteer organizations or informal organizations outside normal firm boundaries as well as development organizations like UNEP may better facilitate fluid knowledge management at the individual level than within the traditional organization structure (Donaldson et al., 2011), and extrinsic organizational rewards may exert a negative effect on one’s intention to share knowledge (Bock et al., 2011). Specifically, software developers in the Open Source software are presented as a prime example of voluntary and effective knowledge management (Shen, 2011), which may be explained by the inputs and rewards that differ in the Open Source versus traditional organizational structure (Bock et al., 2011).
2.2.2 Theory of organizational knowledge creation

Nonaka and Takeuchi (1995) argued that knowledge is initially created by individuals and that the knowledge created by individuals becomes organizational knowledge through a process described by the theory. Nonaka and Takeuchi (1995) identify four different knowledge types, namely, socialization, externalization, combination and internalization.

Socialization allows an individual to acquire tacit knowledge directly from other workers through shared observations and experience. Externalization involves transformation of tacit knowledge to explicit concepts. With internalization, tacit knowledge is transformed to explicit through documentation and hands on experience as new knowledge is internalized. Combination allows people to come up with different ideas from different sources of explicit knowledge thereby grouping and refining knowledge together. They proposed that organizational knowledge is created through the continuous social interaction of tacit and explicit knowledge involving the four sequential modes of knowledge conversion that start with socialization. This process is a “spiral” one, suggesting that each “circuit” builds on the previous one such that knowledge creation becomes, implicitly, knowledge accumulation (Nonaka and Toyama, 2003).

Organizational knowledge creation is also possible on a global scale if the company is sensitive to and effective in socialization of tacit knowledge regarding the distinctions and preferences found within the market to be expanded into and in externalization of the know-how required to develop the product that had success within its origin market.
Since tacit knowledge is difficult to formalize and often time and space-specific, tacit knowledge can be acquired only through shared direct experience, such as spending time together or living in the same environment, typically a traditional apprenticeship where apprentices learn the tacit knowledge needed in their craft through hands-on experiences.

2.2.3 Resource based view theory

In accordance with the resource based view theory, Grant (1991) postulates that while resources are the source of a firm’s capabilities, capabilities are the main source of competitive advantage. Therefore, it has been emphasized that the key to achieving a sustainable competitive advantage from a firm’s stock of resources lies in its ability to integrate different resources to form strong organizational capabilities. It is a firm’s core capabilities that make the most significant contribution to competitive advantage.

The resource based view of the firm, blended with a knowledge-based perspective, highlights the effective ways of coordinating individuals’ activities within the firm and integrating their knowledge. Gold et al., (2011) argue that it is how effectively firms leverage and combine their KM resources to create a unique KM capability that determines their overall effectiveness. In other words, firms can and do differentiate themselves on the basis of their valuable resources of KM capability which are complex to acquire and difficult to imitate, thereby, providing them with a sustained competitive advantage (Chuang 2004). In the dynamic markets of today, firms are not only competing on their ability to exploit their existing resources and organizational capabilities, but are
also competing on their ability to constantly renew and develop these resources and organizational capabilities in changing market conditions to sustain a competitive advantage (Teece et al., 1997).

Adopting a knowledge-based perspective, dynamic capabilities are seen as integrated sets of KM activities that change, renew, and exploit the knowledge-based resources of the firm, equivalent to knowledge development capability, knowledge (re)combination capability, and knowledge use capability (Nielsen, 2006). With the resource-based view theory that embodies knowledge and dynamic capability-based approaches, KM resources and capabilities are explicitly recognized to be central to the creation of competitive advantage in the dynamic market places of today. While KM resources and capabilities tend to be heterogeneously distributed across firms, leading to different patterns of KM use and effectiveness, a key to understanding the success and failure of KM within organizations is the identification and assessment of preconditions or organizational resources/capabilities that are necessary for the effort to flourish (Gold et al., 2011).

### 2.3 Knowledge Management Strategy

Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization’s objectives. The knowledge to be managed includes both explicit (documented knowledge) and tacit (subjective knowledge). Management entails all of those processes which are associated with the identification, sharing and creation of knowledge. This
requires systems for the creation and maintenance of knowledge repositories, and to
cultivate and facilitate the sharing of knowledge and organizational learning.
Organizations that succeed in knowledge management are likely to view knowledge as an
asset and to develop organizational norms and values, which support the creation, and
sharing of knowledge (Davenport et al., 2008). Organizations adopt various knowledge
management strategies that result in knowledge creation, knowledge sharing, knowledge
application, and knowledge integration (Zack et al., 2009).

A KM strategy involves systematic approaches to find, understand, and use knowledge to
achieve organizational objectives. Managing knowledge creates value by reducing the
time and expense of trial and error or thereof invention of the wheel (Gold et al., 2011).
The essence of managing knowledge is concerned with deciding with whom to share,
what is to be shared, how it is to be shared, and ultimately sharing and using it. Managing
knowledge produces value when shared knowledge is used and reused. Consistent value
occurs when there is an atmosphere of trust and motivation for people to share and use
knowledge, when there are systematic processes to find and create knowledge, and, when
needed, there is technology to store and make knowledge relatively simple to find and
share (Gold et al., 2011). It has been argued that knowledge and competences are a
source of effective organizational actions and competitive advantage.
2.4 Knowledge management strategy development

Zack (2009) identified an approach for developing knowledge strategy based on research and practice. Following this model allows application of well-known methods of strategy development, such as SWOT (strengths-weaknesses-opportunities-threats) analysis and scenario planning.

The first activity in knowledge strategy is to understand the current business strategy, then affirming or progressing strategy as the basis for organizational analyses. The knowledge strategy process uses aligned business strategy to four dimensions of knowledge resources, organizational practices, culture, and collaborative technology. The traditional SWOT framework is recognized in developing knowledge strategy. A knowledge-based SWOT analysis is conducted in an early phase of knowledge strategy work. The SWOT analysis establishes a foundation from which to draw priorities and develop further strategy. The crucial outcome, regardless of method, is in developing a consensus model for organizational alignment and validation, as well as creating a vision for future action.

Managing and leveraging knowledge is at the core of any attempt to improve an organization’s performance (Barquin, 2011). Therefore the last few years have been characterized by an ever increasing need for tools and applications that capture this knowledge effectively, promote efficient distribution, enhance intuitive usage and provide the ability to link concepts of knowledge to other (multimedia) sources. Companies are therefore investing large amounts of money in the development of
knowledge management systems of which intranets, document management systems and data warehouses are the most popular technologies (Gray, 2010). When these systems are applied correctly by following a knowledge-centric approach with the necessary emphases on information technology, as well as creating an environment conducive to knowledge creation and sharing, companies often experience large increase in their return on investment (Carlucci, 2004).

2.5 Knowledge management strategy implementation

A winning knowledge management program increases staff productivity, product and service quality, and deliverable consistency by capitalizing on intellectual and knowledge-based assets (Colin, 2004). The following eight-step approach was developed based on logical, tried-and-true activities for implementing any organizational program. The early steps involve strategy, planning, and requirements gathering while the later steps focus on execution and continual improvement.

Establish Knowledge Management Program Objectives: Before selecting a tool, defining a process, and developing workflows, an organization should envision and articulate the end state. In order to establish the appropriate program objectives, identify and document the business problems that need resolution and the business drivers that will provide momentum and justification for the endeavor (Liew, 2007). Provide both short-term and long-term objectives that address the business problems and support the business drivers. Short-term objectives should seek to provide validation that the program is on the right path while long-term objectives will help to create and communicate the big picture.
Prepare for Change: Knowledge management is more than just an application of technology. It involves cultural changes in the way employees perceive and share knowledge they develop or possess. One common cultural hurdle to increasing the sharing of knowledge is that companies primarily reward individual performance (Wangari, 2009). This practice promotes a "knowledge is power" behavior that contradicts the desired knowledge-sharing, knowledge-driven culture end state you are after (Skyrme & Amidon, 2003). Successfully implementing a new knowledge management program may require changes within the organization's norms and shared values; changes that some people might resist or even attempt to quash. To minimize the negative impact of such changes, it's wise to follow an established approach for managing cultural change.

Define High-Level Process: To facilitate the effective management, it’s advisable to begin by laying out a high-level knowledge management process. The process can be progressively developed with detailed procedures and work instructions throughout steps four, five, and six (Wangari, 2009). However, it should be finalized and approved prior to step seven (implementation). Organizations that overlook or loosely define the knowledge management process will not realize the full potential of their knowledge management objectives. How knowledge is identified, captured, categorized, and disseminated will be ad hoc at best. In general, these activities include knowledge strategy, creation, identification, classification, capture, validation, transfer, maintenance, archival, measurement, and reporting (Liew, 2007).
Determine and Prioritize Technology Needs: Depending on the program objectives established in step one and the process controls and criteria defined in step three, one can begin to determine and prioritize knowledge management technology needs. With such a variety of knowledge management solutions, it is imperative to understand the cost and benefit of each type of technology and the primary technology providers in the marketplace. Don't be too quick to purchase a new technology without first determining if your existing technologies can meet your needs.

Build a Knowledge Management Implementation Roadmap: With the current-state assessment in hand, it is time to build the implementation roadmap for a knowledge management program. But before going too far, re-confirm senior leadership's support and commitment, as well as the funding to implement and maintain the knowledge management program. Without these prerequisites, efforts will be futile. Having solid evidence of organization’s shortcomings, via the assessment, should drive the urgency rate up (Skyrme & Amidon, 2003). Having a strategy on how to overcome the shortcomings will be critical in gaining leadership's support and getting the funding you will need. This strategy can be presented as a roadmap of related projects, each addressing specific gaps identified by the assessment. The roadmap can span months and years and illustrate key milestones and dependencies. A good roadmap will yield some short-term wins in the first step of projects, which will bolster support for subsequent steps (Wangari, 2009).
Implementation: Implementing a knowledge management program and maturing the overall effectiveness of an organization will require significant personnel resources and funding. Be prepared for the long haul, but at the same time, ensure that incremental advances are made and publicized (Liew, 2007). As long as there are recognized value and benefits, especially in light of ongoing successes, there should be little resistance to continued knowledge management investments. With that said, it's time for the rubber to meet the road. As the organization advance through each step of the roadmap, make sure the organization is realizing the short-term wins. Without them, the program may lose momentum and the support of key stakeholders (Wangari, 2009).

Measure and Improve the Knowledge Management Program: there is a need for measuring actual effectiveness and comparing that to anticipated results. If possible, establish some baseline measurements in order to capture the before shot of the organization’s performance prior to implementing the knowledge management program. Then, after implementation, trend and compare the new results to the old results to see how performance has improved. It will take time for the organization to become proficient with the new processes and improvements (Colin, 2004). Over time, the results should follow suit. When deciding upon the appropriate metrics to measure the organization’s progress, establish a balanced scorecard that provides metrics in the areas of performance, quality, compliance, and value (Skyrme & Amidon, 2003). The key point behind establishing a knowledge management balanced scorecard is that it provides valuable insight into what's working and what's not.
Implementation of a knowledge management strategy is a difficult step for any company: introducing a new knowledge management system is a huge adjustment for any organization, and change management must be handled accordingly. The implementation of a KM strategy has a greater effect on the day to day activities of many employees than most other system implementations. The theory behind knowledge management systems shows that they do have many positive effects on organizations (Gray, 2010). With successful implementation, a knowledge management strategy should be able to provide stability and innovation.

Alvarenga (2005) argued that by fully supporting KM and the multidisciplinary KM committee, a KM does receive full nurture and support to perform. A multidisciplinary committee for the governance of the KM process shall encompass members from different parts of the organizations, with different backgrounds and readiness to act as knowledge brokers and knowledge activists. It’s recommended to involve middle-managers from strategic organizational areas and hold them responsible for conducting the KM process. The idea behind the committee is to involve and entrust the organization as a whole, communicating that it’s everyone’s responsibility to make KM a successful process in the organization. This committee shall meet on a regular basis and all decisions involving the firm’s KM process should be discussed and approved within this instance. Top-administration shall receive regular reports on the upbringing of the process.
Moffet and Hinds (2010) revealed that, successful knowledge management implementation emanates from the employees. Knowledge workers have flexibility and freedom to conduct their work according to their own intelligence, experience and initiative. Gold et al., (2011) argue that a team-based, non-hierarchical, self-organizing organizational structure is the most effective for knowledge sharing. Davenport et al., (2008) indicated that flexible organizational structures play an important role on successful KM implementation. They further suggest that flexible structures help achieve decentralization of decision-making process by facilitating the communication process at all organizational levels.

2.6 Knowledge management strategy Impact and benefits

Ibrahim and Reid (2009) postulates that, knowledge management strategy is critical for organizations to create a sustainable competitive advantage. More so, knowledge management initiatives help to improve business processes. Organizations can reduce business processing time simply because they can share best practices. Business processes can also improve through conversations and discussions that can generate valuable knowledge for forecast saving and cost reduction. Knowledge management strategy helps in the improvement of organizational culture. Previous surveys have revealed that social and cultural issues were the main obstacles to the success of knowledge management strategy practices (Ibrahim and Reid, 2009). Organizational culture can change towards a knowledge sharing culture where employees are driven to generate and share knowledge for the purpose of organizational improvement.
Secondly, a knowledge management strategy facilitates the learning of the organization’s employees from each other and from external sources, about solutions to business problems that worked in the past, as well as those that did not (Argote and Ingram 2010). KM strategy also provides employees with solutions to problems if the same problems were encountered earlier. KM strategy can help enhance innovativeness, effectiveness, and efficiency of organizational processes (Argote and Ingram 2010). KM strategy can also contribute to a firm by enabling new products or improved products that provide a significant additional value as compared to earlier products, or by facilitating products that are inherently knowledge-based. Knowledge management strategy integrates processes, people, and technology to enhance the effectiveness of an organization's operational processes and competencies through learning.

Organizations that manage knowledge claim higher rates of productivity. By having greater access to their employees’ knowledge, organizations make better decisions, streamline processes, reduce re-work, increase innovation, have higher data integrity and greater collaboration (Zaim et al., 2012).

In the current competitive environment, many organizations have realized that the only source of sustainable competitive advantage they can leverage is the effective use of their existing knowledge as well as the fast acquisition and utilization of new knowledge (Carlucci, 2004). The efficiency of a KM strategy depends on institutional capacity and trained human resource that can disseminate knowledge quickly. As Nair (2005) put it, organizations need to continually learn in order to remain relevant to the constituents they
serve. In order to gain competitive advantage from KM strategy, organizations need to identify core competencies, or integrated knowledge sets, that distinguish them from competitors and add value for customers. Employees create knowledge within the organization and a significant part of the organizational knowledge is saved in their minds, thus small mutation in their task positions can impose a fundamental effect on its total performance (United Nations, 2013).

Due to the strategic significance of knowledge, strategists are faced with a rapidly growing need to find and improve on ways to create, locate, manage and ensure that the power of knowledge is leveraged and shared throughout the organization (Krueger & Andreas 2008). Zack et al., (2009) argue that the power of a KM strategy does not only reside in the ability to positively influence strategy formulation (knowledge to exploration leading to innovative ideas), but also, and just as importantly, in the ability to exploit the power of knowledge via strategy formulation. Therefore, many authors, implicitly or explicitly equate the ability to innovate with competitive advantage. So KM strategy is not a goal in itself, but to support the economic goal of continuous innovation as a decisive factor of competitive advantage. As noted by the observers in strategic management, effective KM strategy through the development of capabilities should contribute to key aspects of business performance (Gold et al., 2011). Knowledge Management strategy is at the heart of business performance improvement and value creation Carlucci (2004). And the ability to continually explore and exploit knowledge relates directly to the organization’s goal of sustaining survival via growth and profitability.
2.7 Knowledge management strategy challenges

Organizations may fail to identify, develop, acquire or even share and distribute their knowledge. One of the major challenges of knowledge management strategy is failure to form and develop a culture that embraces learning, sharing, changing and improving of knowledge in an organization. Beckham (1999) argues that many companies have attempted to implement knowledge management strategy efforts but have failed due to the lack of an appropriate cultural context that creates and nurtures reciprocal trust, openness and cooperation. Culture of sharing (social interaction) is another challenge in knowledge management strategy. Furthermore, creation of knowledge groups may be viewed as too expensive to undertake (Ho, 2009). To override the above obstacles, Ho (2009) noted that systems should accommodate feedback from the employees and reward brilliant contributions.

Organizational structure presents significant challenges in the implementation of a KM strategy. Saqib et al. (2008) suggests that organizations typically do not have a defined organizational structure and where the structure exists, it is not permanent. The result is a lack of organizational knowledge and inconsistency in decision making. Moreover, the role of stakeholders is generally a significant one in the organization. Organizations must operate in a highly transparent manner, consulting stakeholders regularly for all major decisions. This extended organizational structure further contributes to the complexity of the operating environment and its change ability (Dalkir, 2009). The influence of the typical structure of non-profit organizations, commonly adopting hierarchical forms, limits organizations’ ability to execute knowledge conversion.
Burt and Taylor (2003) points to a correlation between localist values typical of NGOs and low strategic IT adoption. This has wide-reaching implications for the way the firm organizes its internal and external communications – necessitating new organizational arrangements of which novel information flows and information networking are vital. Limited funding, resource constraints and public accountability prevent humanitarian organizations from gaining the requisite capital and change management resources for sound KM strategy (Hume and Hume, 2008).

2.8 Empirical Reviews

Earl (2001) has provided how to formulate a knowledge management strategy. First, performance gaps in the organization enable one to discover where the knowledge management framework has to be aimed at. A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis can be done in order to determine the “strategic gap” (Zack 1999). The next step is to remedy the performance gap by determining how better acquisition, distribution, use or protection of knowledge could make a positive impact. The third step is to identify and examine the knowledge management initiatives, which is where the framework of knowledge management will be useful in suggesting the knowledge management initiatives, but also in providing the scope of a particular school of knowledge management. The fourth step is to test the validity of the framework selected on the strategy and culture of the organization. The last step is to confirm which knowledge management framework will be selected and resources shall be accordingly allocated to it in order to plan its execution (Earl 2001).
Davenport and Prusak (2000) regard information technology (IT) as both a key contributor and an enabler in the field of knowledge management. They proposed that a number of IT tools be applied to the different knowledge creation processes. They suggested that IT should be part of effective knowledge management and various forms such as communication technologies and decision-aiding technologies (decision-support systems, expert systems, and executive information systems) (Song et al., 2001). Stenmark (2002) opined for a multi-perspective view of an intranet, a technology that would help in creating an effective knowledge management environment, which includes Information perspective, Awareness perspective and Communication perspective. Haldin-Herrgard (2000) maintained that a great deal can be done through modern IT to diffuse explicit knowledge.

The efficiency of KM depends on institutional capacity and trained human resource that can disseminate knowledge quickly. Nair (2005) found that the governments need to continually learn in order to remain relevant to the constituents they serve. In order to gain competitive advantage from KM, organizations need to identify core competencies, or integrated knowledge sets, that distinguish them from competitors and add value for customers (Bohlander, Snell and Sherman, 2001). Employees create knowledge within the organization and a significant part of the organizational knowledge is saved in their minds, thus small mutation in their task positions can impose a fundamental effect on its total performance (UN, 2003).
Van de Ven (2005) found that the success of KM in an organization depends on effective knowledge sharing practices, and classifying knowledge on the basis of its strategic benefits. To transform knowledge incentive structure to knowledge-based structures it is necessary to make knowledge more visible and easily accessible to the employees. Sharing knowledge contributes to a more individual awareness of specific situations and contributions. A social constructionist considers that all individuals are constantly interacting with other individuals within the organization irrespective of the nature of its business or the economic sector. Thus, there is a constant two-way exchange of knowledge and experience between individuals and collective knowledge with an interactive social process of creating and sharing knowledge.

Lettieri, Borga, and Savoldelli (2010) on critiquing the knowledge management strategies of Non-profit organizations in Australia established that ‘government imposed reporting’ was neither perceived as a tool to genuinely support quality improvement processes nor improve organizational functioning, but rather seen as an obligatory accountability tool to attract or retain existent funding.

Mosoti and Masheka (2010) found that Knowledge Management practices though practiced is not well understood by most organizations within Nairobi. The findings indicated that most of the challenges faced by organizations in Nairobi are how to create and implement KM Practices as part of organizational culture, organizational strategy and organizational leadership. Though most organizations confirmed that they use IT, it was
noted that there is need for a synergy with other enablers’ of KM such as organizational culture, organizational strategy and organizational leadership.

Wangari (2009) who studied the linkage of critical success factors and knowledge management systems at Olivado Kenya (EPZ) Ltd found that once the role between strategy and knowledge is defined, then other aspects of strategic management such as resources allocation, organization design, product development and market segmentation can be configured to bolster knowledge strengths and reduce knowledge weaknesses.

Asava (2009) studied knowledge management for competitive advantage within commercial banks in Kenya. The findings of the study established that commercial banks encourage knowledge sharing culture, best practices and smart working as key strategic actions.

2.9 Summary

Most organizations in the developed and the developing world are opting for change in management, looking for ways to improve their ability to create new ideas and to develop the best environment for creation of ideas. Knowledge management is now recognized as an organization's most valuable asset. Because knowledge is a complex asset, it must be managed in a different way unlike other resources, thus management has a role in developing and implementing a knowledge management strategy that considers not only its vision but also its culture and processes. UNEP KM strategy seeks to facilitate the development of innovative models for community participation in the improvement of
environment. It recognizes knowledge as a valuable resource that deserves to be consciously captured and managed to facilitate sharing of experiences and lessons learnt from different programmes both internally and externally. Responding to the changing global context and the internal challenge that UNEP faces requires game changing approaches and a new culture of continuous learning and exchange that can be best achieved through a coordinated knowledge management effort. Although much literature exists on knowledge management no one has undertaken a research on the knowledge management strategy development and implementation in the United Nations Environment Programme (UNEP).
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter introduces the design of the research and the data collection and data analysis technique.

3.2 Research Design

The research design was a case study. A case study is an in-depth investigation of an individual, institution or phenomenon. Case studies allow the researcher to collect more in-depth information than in cross-sectional studies with the intention of understanding situations or phenomenon. It also helps to reveal the multiplicity of factors, which have interacted to produce the unique character of the entity that is subject of study.

The study was used to identify the knowledge management strategy development, implementation and its impact at the United Nations Environment Programme (UNEP). The reason for this choice is based on the knowledge that case studies are the most appropriate for examining the processes by which events unfold, as well as exploring causal relationships and also they provide a holistic understanding of the phenomena.

3.3 Data Collection

The study used primary data which was collected using an interview guide. An interview guide is a set of questions that the interviewer asks when interviewing. The interviewed respondents were considered to be key informants for this research as they are involved
in the management of organization employees and the development and implementation of UNEP strategies. The choice of the senior and middle managers in this study is very important, as they are the head of the organization and the ones who can foster organizational objectives. The interview guide is attached as Appendix 1.

Respondents to be interviewed were:

3.3.1. Deputy Director, Division of Early Warning and Assessment
The deputy director co-chairs the UNEP Committee on Knowledge Management. The committee represents the various UNEP divisions, offices and MEA secretariats globally. The Committee plays a key role in guiding, reviewing, validating, approving KM – related projects / initiatives including their funding and resources, evaluating and reporting on the implementation of KM within UNEP.

3.3.2. One staff member of the Office for Operations (OfO)
The OfO is the Secretariat of the UNEP Committee on Knowledge Management. They are responsible for cooperate level coordination and overseeing overall implementation of KM within UNEP including liaison with all relevant internal and external stakeholders and promoting knowledge sharing within the organization.

3.3.3. Two KM sub-programme focal points
The sub-programme staffs facilitate communication and interaction across the UNEP seven sub-programmes (Climate change, Disasters and conflicts, Ecosystems management, Environmental governance, Harmful substances and hazardous wastes,
Resource efficiency and sustainable consumption and production). They also support the integration of knowledge across the sub programmes and ensure interaction between networks to help build networked knowledge.

**3.3.4. Three managers and supervisors**

The managers and supervisors ensure that the staffs, who they are working with, are doing the knowledge management that they are supposed to do, the expected knowledge management processes happen at the right time, expected knowledge management technologies are applied at the right time and also staff get the knowledge they need. They monitor the processes of learning before, during and after, working by mentoring, coaching, and prompting to make sure these processes happen.

**3.3.5. Two Staff members**

Staffs are responsible for participating actively in the relevant UNEP Knowledge activities. They are expected to consult best practice resources in view of integrating them into their daily work. The study used secondary data from existing reports that show the process undertaken in the development and implementation of the knowledge management strategy at UNEP.

**3.4 Data Analysis**

Data obtained from the interview guide were analyzed using content analysis. Content analysis is the systematic qualitative description of the composition of the objects or materials of the study (Hsieh and Shannon, 2005). It involves observation and detailed description of objects, items or things that comprise the object of study.
Content analysis, as a class of methods at the intersection of the qualitative and quantitative traditions, is used for rigorous exploration of many important but difficult-to-study issues of interest to management researchers (Carley, 2003). This approach is more appropriate for the study because it allow for deep, sense, detailed accounts in changing conditions. This is relevant because organizational objectives usually occur in myriad of circumstances.
CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1: Introduction

This chapter presents the results of the reliability and validity tests, the profile of the respondents. Descriptive analyses are presented herein and the findings are discussed, within the framework of the research questions and objectives. The data was gathered exclusively from the interview guide as the research instrument. The interview guide was designed in line with the objectives of the study.

4.2 Demographic Data

A total of six interview guide were distributed to the Deputy Director - DEWA, one manager – DEWA, two KM/ICT officer, UNEP/DEWA communications officer, a staff member of the Office for Operations (OfO) and two KM sub-programme focal points, all of which were received back making response rate of 100%. All of the respondents have been working in the organization for at least three years, although in some department’s limited time of not less than 2 years in the current position this perceptibly contributed to the congruence in answering questions related to the research area.

Table 4.1: Demographic Data

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Number</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deputy Director - DEWA</td>
<td>1</td>
<td>R1</td>
</tr>
<tr>
<td>Manager – DEWA</td>
<td>1</td>
<td>R2</td>
</tr>
<tr>
<td>KM/ICT officer</td>
<td>2</td>
<td>R3, R4</td>
</tr>
<tr>
<td>Communications officer</td>
<td>1</td>
<td>R5</td>
</tr>
<tr>
<td>Staff</td>
<td>1</td>
<td>R6</td>
</tr>
</tbody>
</table>
4.3 Knowledge Management Strategy at UNEP

A knowledge management strategy at UNEP has been conducted as a detailed plan that outlines how it intends to implement the principles and practices of knowledge management in order to achieve its objectives. Knowledge management strategies have been classified in accordance with their focus as being a system strategy or a human strategy. The system strategy is one where the focus of knowledge management is to create, store and share and use the organization’s explicit knowledge, emphasizing on storing, codifying and sharing knowledge; information technology is of great value when such a strategy is adopted.

Interviewing top level executives in the organization on knowledge management is like asking for a self-evaluation. It also demands that the informant makes a judgement on the institution they work for. It is expected therefore that some of the responses were likely to be biased as the informant may perceive penalties resulting from taking a particular position on an issue. This was, however, minimized by assuring the informants that the information was to be used solely for academic purposes.

For effective knowledge management, it is essential to identify which knowledge processes represent unique and valuable capabilities. Implementing knowledge processes can be costly if not done accurately; therefore they must be guided by appropriate strategies. R1 postulates that:
‘Knowledge management varies from organization to organization, depending on the type of knowledge one is dealing with. UNEP Knowledge Management Strategy take have a significant influence on knowledge management processes. The right knowledge management strategy helps in the selection of the appropriate knowledge management process that can save time, costs and would lead to successful knowledge management.’

The knowledge management strategy at UNEP being in its initial stages has few partners that are bound to grow as these networks enlarge. The knowledge base is expanding as more partnerships are formed, showing that this segment follows the network and communities of practice model. Partnerships and collaboration has been through implementation of pilot projects through UNEPLive and other UN organizations and partners such as universities, colleges, Non-Governmental Organizations (NGO) and others.

4.4 Development and Implementation of Knowledge Management Strategy in UNEP

This section covers the first specific objective to establish the development and implementation process of knowledge management strategy at the United Nations Environment Programme (UNEP).

4.4.1 Development of the KMS

Development is a specified state of growth or advancement that can be catalyzed by the right use of knowledge. KMS was agreed that, it is a process of change, which can be accelerated through knowledge management. The development process was through engagement of various units/divisions through knowledge management initiatives that
were geared to bring all parties onto the drawing table. R1 believed what was considered was how it would be in synergy with the greater UN wide KMS and funds available for KM development and implementation and other UNEP offices outside the headquarters.

Respondents outlined that UNEP uses knowledge management for environmental management and assessment to uplift the state of enlightening of societies, and not for commercial benefit. UNEP has undertaken KM and established working groups that bring all players on the table. It was found out that, knowledge management model in UNEP is basically based upon knowledge sharing through constant and open communication (often brown bags meetings) the making explicit of often buried or tacit knowledge held by all employees and partner organizations.

4.4.2 Implementation of KMS

Implementing a knowledge management program and maturing the overall effectiveness of an organization will require significant personnel resources and funding. The study found out that implementation of the strategy is prepared for the long haul, but at the same time, ensure that incremental advances are made and publicized. For UNEP, knowledge sharing is capturing, organizing, reusing and transferring experience based knowledge that reside within the organization and making that knowledge available to others in the organizations. The interesting characteristic of knowledge is that its value grows when shared. R1 posited that
'Through the establishment of initiatives that cover the different sectors of their areas of work and having different units that have their core mandate in that sector lead the working groups.'

The study further found out that maintaining and leveraging the present and future value of knowledge assets, and knowledge management systems encompass both human and automated activities and their associated artifacts. R2 posits that:

‘Instead of all the work being done by one division, the decentralization can occur through establishments of working groups in other divisions to be tasked with leading in KM initiatives.’

It can thus be reported that, this has been established through the use of the digital platform whereby all the information needed can be accessed through the web by establishment of UNEPLive, which has been mandated by the UNEP Governing Council to be the main integrator for all knowledge in UNEP. Different divisions/units have people who are tasked to ensure that the information contained therein is updated in a timely manner. The communities of practice platform is expected to facilitate individuals within UNEP and other stakeholders raising and answering questions, or debating over environmental issues. Through the tacit-process platform, the frequency of either individual or collective communication is increased, and the knowledge that is difficult to express in explicit forms may be better retrieved and extracted.
Monitoring and evaluation programmes has become a big industry within the development sector, but practices seem less developed with regard to knowledge management interventions. UNEP also has a monitoring protocol for its knowledge management program, focusing on output, outcome and sustainability. The protocol has a strong link with the annual planning and reporting cycle, and responsibility for measurement is divided between academic partners and UNEP internally.

The senior management share the progress of the KM initiative and make sure all staff are involved in the KMS process, they also strive to share information and knowledge not just within UNEP but outside the organization through publications, social media, and television, radio and newspapers interviews. However, the study found out that although senior management share information, only limited information is shared to staff.

### 4.4 The Impact and Benefits incurred in the Development and Implementation of Knowledge Management Strategy

This section covers second objectives to determine the impact and benefits of knowledge management strategy implementation at UNEP.

Inventory of knowledge asset by various divisions and branches UNEP has been done by standardization of domain names and integration of some portals into UNEPLive. Because knowledge is a complex asset, it must be managed in a different way unlike other resources, thus management has a role in developing and implementing a knowledge management strategy that considers not only its vision but also its culture and processes. R2 postulates that:
‘UNEPLive has collated over a hundred and ninety data (reports, maps and datasets) that has made a global leader in environmental knowledge.’

One of the key benefits of introducing knowledge sharing practices in organizations is its positive impact on organizational performance. With centralization it's easier for one to get the information needed without having to sift through many UNEP sites looking for it. The UNEP knowledge repository is being used to put all the relevant information such as the governing council documents from when it was established to the reports that UNEP produces for easier access by stakeholders and also internally within the organization. Moreover, managers perceive the benefits of KM practices can increase productivity, financial performance, staff performance, innovation, work relationships, and stakeholders satisfaction. Therefore, improved performance can be one of the long-term and strategic benefits of fulfilling KM best practices.

Implementation of KM has a significant relationship with performance when staff are given training. R5 pointed out that successful implementation of knowledge management includes: employee training; employee involvement; open and trustworthy spirit of teamwork; employee empowerment; visible top management leadership and commitment and information system infrastructure. Ways UNEP has been conducting training programmes for staffs include communities of practice, UNEPLive resource center, 10 days mandatory trainings per year for staffs which is included in their performance appraisal and brown bag meetings whereby experts on environmental management are invited.
Information and Communication Technologies have been posited by the respondents to contribute to the adaptive process through their dynamic link with other components such as assets, institutions, structures and capabilities, which contribute to adaptive functions. Having a stable information system is a pre-condition for policies that encourage environmental practices. There is hence an important role that technology plays in adaptation policy as it enables greater knowledge sharing which provides scope for solutions to knowledge management impacts. Since the adaptive process can be enhanced through communication and information technology, the information that is generated as such has to be managed.

The study postulate that UNEP has been interlinking with partners, Governments and the environment community through implementation of pilot projects, as well as established working groups and web standards and having the information available in UNEPLive. Other interlinking partners are Governments through the National Reporting Systems (NRS), Africa data Portal (NASA), academic institutions, private organizations (ESRI) and NGOs. Stronger attention to strategic learning about knowledge management is universally recommended. If there is a resource which is in great demand due to having a skill which is in short supply, knowledge management can help make that resource available to the entire organization. This calls for incorporation of knowledge management in staff development programs, including courses on leadership, management, organizational development and teamwork in order to foster partnerships for broader knowledge-sharing and learning culture.
The study found that, although there were benefits accrued in the implementation of KMS, UNEPLive has gotten a fair deal of challenges with the acceptance but gradually the other divisions are making it to be part of their programme of work and the benefit is that our clients would have a one stop place to serve as their source of environmental information. The UNEP process initiates a knowledge cycle rather than a linear flow from top to bottom.

4.5 Challenges Encountered in the Implementation of Knowledge Management Strategy at UNEP

The section covers challenges encountered in the development and implementation of knowledge management strategy at UNEP.

Knowledge Management Systems help in creating, sharing and using the collective knowledge of its products, processes and people to increase workplace productivity and reduce activities that ‘reinvent the wheel’. One common cultural hurdle to increasing the sharing of knowledge is that companies primarily reward individual performance. Organizations that succeed in knowledge management are likely to view knowledge as an asset and to develop organizational norms and values, which support the creation, and sharing of knowledge.

R5 indicated that strong environmental governance structures, built on a set of networks, coordinated and initiated by international organizations, may close current participatory, operational, and institutional gaps in global environmental governance and provide a more successful means of addressing environmental threats. This has however presented
several difficulties to the governance mechanisms such as adjusting societal tendencies, uncertainties despite the increase in knowledge, changing patterns of risk and equity, long term challenges, and global implications.

In implementation of software platform, the first challenge is that personnel might not have any idea or understanding of what ‘knowledge management’ is all about. Adoption of technology is a complex process that is based on a number of alternatives including technological choices, perceived benefits, cost based models and organizational strategies. The common challenge resides in achieving a synergy by integrating people, processes and technology. Communicative interactions also inform the users of their day-to-day operations as they deal with challenges that continually arise on the technology’s potential. However technology itself needs adaptation to organizational goals and strategies.

The study established that, there is resistance to the way one is used to doing things and also the reporting aspect, with a more open access, people often feel their privacy is being violated. UNEP facilitates adaptation decisions by making available knowledge and technical information, strengthening institutional and policy frameworks for adaptation, and supporting countries in integrating adaptation issues into national development planning and legislative processes. Interim step towards realizing the goal of knowledge management is to identify the problems or challenges that discourage knowledge transfer in organizations.
From the findings, other main challenges are identified as: different influences of hierarchies; cultural barriers, differences in individuals’ skills, priority of ad-hoc activities and different accessibility, usage of technology, distributing the right knowledge to the right person at the right time; acceptance of the employees to implement knowledge management initiatives; difficulties among employees in adapting to knowledge based culture; difficulties in knowledge sharing; managers resistant to change and lack of information technology experts among employees.

4.6 Solutions to the Challenges Faced In the Implementation of Knowledge Management

Although cooperating can be a challenge in international and intercultural contexts, advising on knowledge management can be a challenge as well. Thus, not each and every KM activity may result in visible or direct outputs. The output may be implicit and not measurable, e.g. a rise of the awareness on knowledge management. The knowledge manager may not even realize how many changes he or she has triggered. The management should articulate the culture of sharing knowledge and information, openness and give staffs an inviting environment to learn. For the involved co-workers the acquainted knowledge will be sustainable, for the organization, the sustainability of the performed KM activities can be achieved if the activities will keep on being executed regularly, even if staff is changing, like e.g. updates in the intranet. More training to ensure the work to be done to ensure staff are able to deliver on work and also the KM of the organization. Solutions must also consider local opportunities and limitations, sharing of expertise and modern information technologies.
4.7 Discussion of Findings

A knowledge management strategy at UNEP has been classified in accordance with their focus as being a system strategy or a human strategy. The system strategy is one where the focus of knowledge management is to create, store and share and use the organization’s explicit knowledge, emphasizing on storing, codifying and sharing knowledge; information technology is of great value when such a strategy is adopted. This agrees with a research study by Zack et al., 2009 and Davenport et al., 2008 who posits that organizations that succeed in knowledge management are likely to view knowledge as an asset and to develop organizational norms and values, which support the creation, and sharing of knowledge. Organizations adopt various knowledge management strategies that result in knowledge creation, knowledge sharing, knowledge application, and knowledge integration.

On the development and implementation of knowledge management strategy at UNEP, the study found out that development is a specified state of growth or advancement that can be catalyzed by the right use of knowledge. They agreed that development is a process of change, which can be accelerated through knowledge management. The development process was through engagement of various divisions/units through knowledge management initiatives that were geared to bring all parties onto the drawing table. They believed what was considered was how it would be in synergy with the greater UN wide KMS. This is in line with Gold et al., (2011) who posited that KM strategy is not a goal in itself, but to support the economic goal of continuous innovation as a decisive factor of competitive advantage. As noted by the observers in strategic management, effective KM strategy through the development of capabilities should
contribute to key aspects of business performance. Therefore, many authors, implicitly or explicitly equate the ability to innovate with competitive advantage.

On the promotion of open access to data, respondents indicated that this has been established through the use of the digital platform whereby all the information needed can be accessed through the web by establishment of a KM portal and the different sectors have people who are tasked to ensure that the information contained therein is updated in a timely manner. The community platform is expected to facilitate individuals in organizations raising and answering questions, or debating over environmental issues. This is in line with a study by Haldin-Herrgard (2000) who maintain that a great deal can be done through modern IT to diffuse explicit knowledge. The efficiency of KM depends on institutional capacity and trained human resource that can disseminate knowledge quickly. Opined for a multi-perspective view of an intranet, a technology that would help in creating an effective knowledge management environment, which includes Information perspective, Awareness perspective and Communication perspective.

One of the key benefits of introducing knowledge sharing practices in organizations is its positive impact on organizational performance. The repository is being used to put all the relevant information such as the governing council documents from when it was established to the reports that UNEP produces for easier access by stakeholders and also within the organization. Moreover, managers perceive the benefits of KM practices that can increase productivity, financial performance, staff performance, innovation, work relationships, and customer satisfaction. Therefore, improved performance can be one of
the long-term and strategic benefits of fulfilling KM best practices. This is in line with a study by Beckham (1999) who argues that many companies have attempted to implement knowledge management strategy efforts but have failed due to the lack of an appropriate cultural context that creates and nurtures reciprocal trust, openness and cooperation. Culture of sharing (social interaction) is another challenge in knowledge management strategy. Furthermore, (Ho, 2009) posits that the creation of knowledge groups may be viewed as too expensive to undertake.

From the research finding, the challenges in implementing Knowledge Management were distributing the right knowledge to the right person at the right time; acceptance of the employees to implement knowledge management strategies; difficulties among employees in adapting to knowledge based culture; difficulties in knowledge sharing; managers resistant to change and lack of information technology experts among employees. This is in line with studies by Beckham (1999) who argues that many companies have attempted to implement knowledge management strategy efforts but have failed due to the lack of an appropriate cultural context that creates and nurtures reciprocal trust, openness and cooperation. Saqibet al. (2008) also suggests that organizations typically do not have a defined organizational structure and where the structure exists, it is not permanent.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This study is an attempt to identify the knowledge management strategy, development and implementation process at the United Nations Environment Programme (UNEP). This chapter serves to demonstrate the achievements of the objectives set out at the initiation of the study and presents in brief the results of these efforts. Thereafter the conclusion and suggestions for future research are presented.

5.2 Summary

The main intention of this study was to identify the knowledge management strategy development, implementation and impact at the United Nation Environmental Programme.

The study found out that successful implementation of knowledge management include: employee training; employee involvement; open and trustworthy spirit of teamwork; employee empowerment; visible top management leadership and commitment and information system infrastructure. Although researchers often imply this positive effect of knowledge management strategy development, implementation and impact, respondents perceive the benefits of KM practices were; increase productivity, financial performance, staff performance, innovation, work relationships, and customer satisfaction. Therefore, improved performance can be one of the long-term and strategic benefits of fulfilling KM best practices.
Secondly, the study also found out that Information and Communication Technologies contribute to the adaptive process through their dynamic link with other components such as assets, institutions, structures and capabilities, which contribute to adaptive functions. Having a stable information system is a pre-condition for policies that encourage environmental practices. UNEP facilitates adaptation decisions by making available knowledge and technical information, strengthening institutional and policy frameworks for adaptation, and supporting countries in integrating adaptation issues into national development planning and legislative processes.

Thirdly, the challenges in implementing Knowledge Management were: distributing the right knowledge to the right person at the right time; acceptance of the employees to implement knowledge management strategies; difficulties among employees in adapting to knowledge based culture; difficulties in knowledge sharing; managers resistant to change and lack of information technology experts among employees.
5.3 Conclusions

The study highlights some of the issues raised by knowledge collaboration to improve employee knowledge sharing. The codification of knowledge in information systems, databases and knowledge repositories does not guarantee efficient knowledge management, but has a potential to influence it in a positive way. It is important to notice that knowledge management strategy does not have a direct influence on knowledge, but an indirect one through organizational elements as an enabler of a better collaboration among people in the organization, motivation of people in the organization and the process view of the organization.

These findings can be used to improve the knowledge management practice of each organization and each knowledge entity. Possible applications include business process restructuring initiatives, human capital development, knowledge mapping, the introduction of more team, cross functional working, increased emphasis on collaboration, and the introduction of more formal channels for knowledge sharing.

The study also found out that Information and Communication Technologies have been taunted by the respondents to contribute to the adaptive process through their dynamic link with other components such as assets, institutions, structures and capabilities, which contribute to adaptive functions. Having a stable information system is a pre-condition for policies that encourage environmental practices.
It can thus be concluded that organizational elements (such as information communication technology, culture and staff trainings) have a positive impact on elements of knowledge management strategy development. Organizational change affects the degree of knowledge management and application and consequently improves the practices of employee knowledge sharing.

The study categorizes challenges in implementing Knowledge Management as: distributing the right knowledge to the right person at the right time; acceptance of the employees to implement knowledge management strategies; difficulties among employees in adapting to knowledge based culture; difficulties in knowledge sharing; managers resistant to change and lack of information technology savvy among employees.

Further, the study concludes that the knowledge management conceptual model in UNEP presented in this paper is a useful starting point to gain a deeper insight into knowledge management elements and their influence to the strategy implementation despite the claims for a relation between knowledge management strategy developments. This conclusion can be applied as a starting point for managers who are to implement knowledge management strategy at UNEP.
5.4 Recommendations of the study

From the research findings and the subsequent conclusions, the following recommendations could be made: The study recommend that UNEP should put more emphasis on training and information sharing in order to improve knowledge sharing, institutional setup and communication command chain should be automated so as to reduce the error rates and discrepancies in the process efficient organizational process could be used in knowledge management strategy in UNEP.

Ostensibly, the organization supports a knowledge management approach but there is no provision to encourage it between divisions/units. It supports the view managers have traditionally been comfortable with things which are easily measured and accountable. The research highlighted how fully codified procedures can be unwittingly translated to tacit knowledge and the impact on the knowledge management strategy should the individual with this knowledge separate from the company, this is a valuable asset should it be embraced to all employees within an institution setup like UNEP.

The study has shown how the organization converts tacit knowledge to explicit knowledge to provide codified process procedures in the context of enhancing productivity through web portals such as UNEPLive.
5.5 Limitations of the study

The scope of the study, due to time restrictions of the Degree of Master of Business Administration dissertation, has been limited to the investigation of the early stages of the project only. As the literature review of the domains of knowledge management strategy development is comprehensive and incorporates all the stages, the study can be taken from that point onwards and thus can be utilized for investigation of later stages. This requires only the assortment of additional data and information from primary research which is relevant and linked to those stages. The collection of more reports and publications from UNEP and its partners can lead to the formation of more concepts that can be applied to that sector. Major information from other UN Agencies was not incorporated in the current research due to the confidentiality of these documents which restricted their use in the research.

Interviewing top level executives in the organization on knowledge management is like asking for a self-evaluation. It also demands that the informant makes a judgement on the institution they work for. It is expected therefore that some of the responses were likely to be biased as the informant may perceive penalties resulting from taking a particular position on an issue. This was, however, minimized by assuring the informants that the information was to be used solely for academic purposes.
5.6 Suggestions for Further Study

Further research is also possible. First of all the survey could be repeated to compare the results and to check the improvement. Besides that the same investigation could be performed in UN Organizations to compare the results and to check how implementation of knowledge management strategy is developing. Also, studies should be conducted on how UNEP implements its knowledge management initiatives with its partners such as Governments, NGOs, private institutions and citizens.
REFERENCES


Wangari. E. (2009), *The linkage of critical success factors and knowledge management systems at Olivado Kenya* (EPZ), Unpublished MBA Research Project, University Of Nairobi

APPENDIX I: INTERVIEW GUIDE

The interview guide will seek to achieve the following objectives;

i. Establish the development and implementation of knowledge management strategy at the United Nations Environment Programme (UNEP)

ii. To establish the impact and the benefits incurred in the development and implementation of knowledge management strategy at the UNEP

iii. To determine the challenges encountered in the implementation of knowledge management strategy at the UNEP

SECTION A: DEMOGRAPHIC DATA

1. What is your designation at UNEP?
2. For how long have you been holding the current position?
3. For how long have you worked at UNEP?

SECTION B: DEVELOPMENT AND IMPLEMENTATION OF KNOWLEDGE MANAGEMENT STRATEGY AT UNEP

4. How was the development process of knowledge management strategy at UNEP?
5. How has UNEP partnered and collaborated with the key stakeholders identified in the KM strategy?
SECTION C: DEVELOPMENT AND IMPLEMENTATION OF KNOWLEDGE MANAGEMENT STRATEGY AT UNEP

6. How has UNEP taken KM as an organization wide responsibility?

7. How has UNEP identified methods to better acquire, create, organize, share and transfer knowledge to fit different situations?

8. How has UNEP decentralized maintenance of data, information and knowledge within the organization and also across its knowledge networks?

9. How has the provision of ICT enabled implementation of KM in UNEP?

10. How has monitoring and evaluation of the implementation of the KMS been done?

SECTION D: THE IMPACT AND BENEFITS INCURRED IN THE DEVELOPMENT AND IMPLEMENTATION OF KNOWLEDGE MANAGEMENT STRATEGY AT THE UNEP

11. How has UNEP senior management adopted and provided leadership from the front for KM success in the organization?

12. How has UNEP taken knowledge sharing and learning as an integral part of the work of staff?

13. How has the implementation of the KM initiatives improved functions and operations related to knowledge management in UNEP?

14. Has UNEP implemented KM training programmes for staff that enhance key social skills and technologies that support the building of networked knowledge?
15. What are the benefits of knowledge repository that stores all of UNEP knowledge products being used??

16. What are the benefits of implemented KM training programmes for staff that enhance key social skills and technologies that support the building of networked knowledge?

17. How has the provision of ICT addressed and promoted open system technologies, interoperability standards and protocols, and social networking technologies to access high quality, relevant, targeted and timely products and services?

18. How has UNEP integrated and synergised UNEP thematic knowledge portals/KMS being maintained by various UNEP divisions and branches?

19. How has UNEP interlinked with external partner knowledge networks, including MEAs, Governments, Partners and the environment community?

20. How has the process of enabling sustainable mechanisms for internal knowledge sharing that enable UNEP becoming a learning organization been? Challenges and benefits?

SECTION F: CHALLENGES ENCOUNTERED IN THE IMPLEMENTATION OF KNOWLEDGE MANAGEMENT STRATEGY AT THE UNEP

21. How do you model to your colleagues and other staff appropriate behaviors in regard to information and knowledge sharing?

22. How has the KM systems in place anticipated and responded to unforeseen challenges that are encountered in the implementation of the KM in the organization?
23. How has the process of establishing the governance framework that outlines the policies, procedures, standards, roles and responsibilities in relation to how UNEP implements its external knowledge management initiatives in responding to the needs of UNEP's stakeholders and partners been?

24. How has UNEP defined how existing processes can be adapted and/or identified what new processes are required to improve knowledge management and knowledge sharing?

25. What are the challenges faced by UNEP in implementing a software platform to nurture knowledge, grow and learn from one another by sharing best practices?

26. What are the challenges faced in knowledge repository that stores all of UNEP knowledge products being used??

27. What are the other challenges you face in the implementation of knowledge management strategy at the UNEP?

28. What challenges are posed by Resistance and Leadership in the implementation of knowledge management strategy at the UNEP?

29. What is the impact of Organizational Culture and Organizational Structure of in the implementation of knowledge management strategy at the UNEP?

30. What are the possible solutions to the challenges faced the implementation of knowledge management strategy at the UNEP?