Knowledge management in research organisations: A knowledge audit

By

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DECLARATION

This work 'Knowledge management in research organisations: a knowledge audit', is my own work. This work has not been submitted previously in whole, or in part for the award of any degree. Each significant contribution and quotation has been indicated, acknowledged and referenced.

Signature: Signed by candidate

ABSTRACT

This dissertation focuses on a knowledge audit that was conducted in a research organisation (PLAAS) at the University of the Western Cape in Cape Town, South Africa. A knowledge and information audit provides a framework that examines the ways in which an organisation handles and leverages its knowledge and information assets. The audit examines ways an organisation creates, generates, disseminates, stores and shares its knowledge and information resources. In the process, the gaps, sinks, and duplications are revealed; providing useful information that can support decision making and knowledge management initiatives to enhance organisational productivity and effectiveness. This relates specifically to developing relevant information and knowledge strategies, to understanding an organisation's knowledge and information needs and aligning these with the right tools that will facilitate efficiency in an organisation's core engagements.

This knowledge and information audit was exploratory in nature and sought to understand the current information and knowledge environment of the organisation. It was anticipated that the results would augment and feed into the current reflections of the organisation on how to leverage its knowledge and information assets and improve efficiency and remain competitive in the market place.

The audit was carried out at PLAAS, a research unit that produces considerable research output based on the empirical studies that the staff conducts. The organisation, in addition, is actively involved in forums that debate and engage with various players in the land and agrarian sector in South Africa. These engagements are at a level where they influence policy matters related to land and agrarian matters in the new South Africa. This audit sought to examine what information and knowledge supports core engagements of the staff, what information and knowledge they use, where they find it and in the process establish the gaps, and challenges staff face as they carry out their core research duties.

The audit adopted a qualitative approach to research, where interviews were the primary source of data collection. An interview guide was developed to facilitate the

data collection and twelve (12) interviews were conducted. The themes, recurring items, and unique views that emerged guided the analysis. Recommendations to improve the current knowledge and information environment took the form of a 'Road Map for Knowledge Management' that the organisation can adopt to enhance the current operating system.

The knowledge and information audit showed that the organisation is very knowledge-oriented and extensively engaged in knowledge work even though this is not explicitly referred to as 'Knowledge Management'. Many shortcomings were identified with regard to the knowledge and information system that is currently in place and these specifically relate to: the organisational structure, organisational memory, organisational technology infrastructure, infrastructure, knowledge sharing activities, and the organisational culture. The results suggested that the organisation needs to strengthen aspects in these areas in order to remain efficient and support the staff in their daily work activities.

The outcomes further suggest that knowledge audit methodologies (as an area of knowledge management) need to develop and be standardized and that more research needs to be conducted in this field of knowledge management.

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Life is beautiful and part of that beauty is to celebrate and acknowledge the people that have supported me to paint that beauty.

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CHAPTER ONE
INTRODUCTION TO THE STUDY

1.1 Introduction and background

This study examined the knowledge and information landscape and knowledge management practices in the Programme for Land and Agrarian Studies (PLAAS), an academic and research institute at the University of the Western Cape. PLAAS' engagement with research relating to land and agrarian matters has as its main outcomes the production of research reports and other publications, policy interventions that relate to land-related matters, the teaching of post-graduate academic programmes and the supervision of post-graduate research. The objective of this project was to scope the knowledge and information landscape to provide a basis for the development of a knowledge and information strategy that could guide knowledge management initiatives at PLAAS.

It is generally accepted that for organisations to succeed in the 21st century, they have to meet the challenges of the global environment by, amongst others, being innovative, competitive, adaptive, and attuned to the unique contributions they can make. It has thus been suggested that organisations can only survive under these circumstances if they recognise the critical role that knowledge can play and if they effectively leverage their human intellectual capital (Drucker, 1994; Davenport & Prusak, 1998; Gupta, Sharma & Hsu, 2004). Knowledge on its own, however, cannot propel any organisation to advantage. It is only when an organisation develops abilities to generate and use knowledge, improve information and knowledge flows, and thus generally capitalizes on its information and knowledge assets that it will accrue any advantages.

A further factor is that within an organisation, learning needs to be initiated and maintained to ensure that the information and knowledge that is generated is utilised. It is thus argued that only by implementing sound knowledge

management initiatives that provide mechanisms to achieve all the aspects mentioned that organisations will be able to not only survive, but also excel in the current environment.

A number of authors have thus argued that knowledge management, as a business practice, holds the key to placing an organisation at the forefront in its field. For example, Drucker (1999: 79) asserts that "the most valuable asset of a 21st century institution will be its knowledge workers and their productivity". Other authors further suggest that since we are operating in a knowledge economy, only by leveraging the knowledge of its workers will organisations be able to sustain their competitive advantage (cf. Hansen et al. 1999). Croasdell (2001), following the same line of thought, indicates that for an organisation to survive in the modern environment with its constant changes, technological developments and enhanced global competition, it is essential that it has the ability to learn rapidly and be adaptable. Many organisations are therefore integrating knowledge management practices into their business strategies in the hope of taking advantage of their knowledge assets, especially the knowledge, skills, and experiences of their people. Organisations can thus more effectively leverage their knowledge and information resources if they use knowledge management practices that aim to maximize their people-oriented resources, e.g. by focusing on documenting 'best practices', developing 'work teams', 'expert directories' and 'communities of practice'.

Out of this recognition of the critical role that knowledge plays in any organisation (cf. Drucker, 1999; and Davenport, 1997) and the resultant escalation in the application of knowledge management (KM) practices, a growing body of KM-related research has emerged. Information technology's role as an enabler for knowledge management has received particular attention (cf. Alavi & Leidner, 2001), often in disproportion to other equally, if not more important, facets of knowledge management. It is however this researcher's view that the focus of research should rather be on crucial aspects that relate to the implementation of knowledge management initiatives and that, in particular, attention should be paid to investigating the application of knowledge and information audits for as Liebowitz

and others (2000: 3) have suggested, the knowledge audit is a "critical' first step in implementing knowledge management initiatives".

All these factors that have been mentioned thus motivated the researcher to conduct a knowledge and information audit at PLAAS (Programme for Land and Agrarian Studies) where she was engaged as a temporary librarian in their resource centre. She observed that if PLAAS could more effectively capitalize on its considerable knowledge and information resources it would generate many positive outcomes in terms of saving time, effort and avoiding duplication. She further noted that PLAAS faces many challenges in relation to how it can best take advantage of its current knowledge and information resources.

While considerable effort and funding goes into activities that have as their outcome the creation of knowledge and information, she observed a number of problems in relation to 'how' this knowledge was leveraged, disseminated, shared and reused. For example, in an environment where the knowledge and information resources are not well accounted for, it is possible to re-invent the wheel and even acquire new resources that already exist within the organisation's systems. Individual employees were further often encountering difficulties when trying to find the knowledge and information they need to carry out their day-to-day work.

The above mentioned factors are further aggravated by a high staff turnover with its resultant effects on the organisation. In the current global environment, greater employee mobility and a high staff turnover is a major problem and a world wide phenomenon. It is thus not unique to the PLAAS' situation. The difficulty with a high staff turnover is that when people leave an organisation, their skills and the knowledge they have acquired while on the job leave with them (i.e. if not captured in some way). If an organisation has not deliberately invested in mechanisms to 'tap' into the tacit knowledge of its people, and developed systematic systems to manage its explicit knowledge (information) that organisation will lose out in the new knowledge-intensive world environment.

In 2005 PLAAS celebrated ten years of existence. In this ten year period, significant quantities of valuable information and knowledge have been created and disseminated and these range from various research outputs (both in published and other formats), to individual work on computer systems, to a growing collection housed in the PLAAS' resource centre. In addition PLAAS has engaged in various collaborative, networking, and partnership relationships with other land-related organisations and universities and in the process it has acquired further valuable information and knowledge resources.

PLAAS' tenth anniversary marked a time of reflection for the organisation and among these reflections was how it could best handle its information and knowledge resources in order to enhance organisational objectives. A logical outcome of such introspection was to decide to develop a knowledge and information strategy based on a knowledge and information audit wherein its knowledge and information activities and resources would be examined in relation to the core objectives of the organisation.

1.2 Problem statement

PLAAS faces many challenges associated with the information and knowledge related activities of the organisation. If those challenges could be identified and clearly circumscribed, it is argued that the organisation would be in a better position to strategically plan and utilise its information and knowledge resources to its best advantage and thereby achieve its objectives.

1.3 Research objectives

As mentioned above, one of the major concerns of PLAAS is how to integrate and maximize on its information and knowledge resources in order to use them to the organisation's advantage. This is evidenced by the recent creation of a policy and advocacy officer and an information officer post. Part of the job descriptions of these posts was an explicit statement that the incumbents should develop strategies and put in place systems that would drive the organisation

towards excellence in its market place. Because this particular organisation extensively generates and uses information and knowledge as core out- and inputs, it follows that such a strategy should explicitly state how the organisation is to take advantage of its information and knowledge resources.

A knowledge and information audit is an activity by means of which an organisation examines its knowledge and information assets in relation to organisational objectives. In the process strengths, weaknesses, gaps, and duplications in the knowledge and information environment are established and mapped. Having a better understanding of this environment facilitates the implementation of processes that are focused on leveraging the information and knowledge resources of the organisation. The Gartner Group (2000c) specifically emphasize the importance and role of a knowledge and information audit in the initial stages of a knowledge management programme as follows:

> *The audit should identify the knowledge requirements of all processes that are heavily dependent on intellectual assets and that underlie the targeted business objectives. The audit also identifies knowledge resources that can fulfil these knowledge requirements and the high-level business process steps where that knowledge must be applied (Gartner Group, 2000c)*

Successful knowledge management projects, it is suggested, provide a basis for any organisation that wishes to use and leverage its knowledge-based assets to achieve excellence and enhance organisational productivity and effectiveness...

From the preceding discussion the researcher thus suggests that in summary the objectives of this research project are to:

1. Explore knowledge management and its benefits to an organisation through the literature.
2. Conduct a knowledge audit in order to explore the information and knowledge related activities of the organisation.
3. Suggest appropriate remedial interventions.

1.4 Research questions

In fulfilling the research objectives of the study, the following three key research questions were thus formulated to guide the investigation:

1. What are the current knowledge and information assets and related activities of the organisation?
2. What are the knowledge requirements of the organisation?
3. In what ways can knowledge management practices be applied to enhance the work of the organisation?

1.5 Research methodology

The study adopted a qualitative research approach and employed interviewing techniques as the primary tool for the collection of the data needed to answer the research questions outlined above. Based on these research questions, detailed interview questions were developed and incorporated into an interview guide that served as the framework for the interviews that were conducted (cf. Appendix 1). The questions addressed key issues that related to both the explicit and implicit knowledge of the organisation and specifically explored what information resides in the organisation; the information technology infrastructure; the culture of the organisation; perceptions that individuals have in relation to interaction between themselves and the organisation; and the core organisational processes. The interviews were further supplemented by observations that were made of the information and technology services of the organisation.

1.6 Significance of the study

The main aim of the project was to assist PLAAS in arriving at a sound knowledge and information strategy to guide the implementation of future knowledge management processes. Although the qualitative research approach used inhibits the generalisability of the results, it is still anticipated that the results will add to the knowledge of the topic and therefore could be related to other similar research

studies. The results could further be used as a basis for other research in the area of knowledge management and specifically the conduct of knowledge audits in research organisations.

The study should thus add to the body of literature focusing on knowledge and information audits especially the empirical aspects relating to practical challenges facing the audit process. Documenting the knowledge and information audit process used in the study should provide valuable information for organisations that would be interested in conducting their own knowledge audits.

1.7 Structure of the chapters

This dissertation is structured into 7 main chapters as follows:

Chapter one: Introduction to the study

This introductory chapter contextualises the study and provides the rationale for its conduct as well as the reference framework for the study (see specifically the outline of the research questions, the research statement and objectives of the study). An outline of the methodology adopted and the structure of the dissertation is further provided.

Chapter two: An overview of the target organisation

This Chapter provides an overview of the target organisation in which the knowledge and information audit is conducted. The chapter describes the organisation in order to provide background information and insight into the present activities of the organisation.

Chapter three: Case for knowledge management

This chapter provides a theoretical understanding of knowledge management and argues the case for adopting knowledge management practices. Knowledge management and related concepts are highlighted; benefits and challenges associated with knowledge management are also discussed.

Chapter four: The knowledge audit

This chapter is dedicated to discussing the knowledge audit. Based in the literature, the knowledge audit is defined; benefits from a knowledge audit and challenges of knowledge audits are highlighted. Audit methodologies are presented and three knowledge audit case studies. From these the audit model that was used as framework for this study was developed.

Chapter five: Research methodology

This chapter discusses the research methodology that was applied to the audit and highlights issues specific to the audit environment.

Chapter six: Organisational knowledge environment

In this chapter, the audit results are presented, discussed and analysed. Data from the interviews are analysed in relation to chapter two and chapter three. The chapter also analyses the results in relation to the research questions presented in chapter one.

Chapter seven: Conclusion and a road map for knowledge management

This chapter provides a summary of the results and outlines the main conclusions of the study. It also suggests a road map for knowledge management that the organisation could adopt to enhance the knowledge and information environment of the organisation.

CHAPTER TWO

THE TARGET ORGANISATION

[PLAAS] *engages in research, training, policy development and advocacy in relation to land and agrarian reform, rural governance and natural resource management. PLAAS aims for rigour in its scholarship, excellence in its training, and effectiveness in its policy support, and advocacy. (PLAAS, 2005a).*

2.1 Introduction

In this chapter an overview is given of the target organisation, i.e. the Programme for Land and Agrarian Studies (PLAAS) in which the knowledge audit was conducted. This overview serves three purposes. It firstly provides a clear understanding of the organisation, its core business engagements, and the organisational culture and structure. Secondly, the overview informs the framework that is developed for the information and knowledge audit of the organisation. Thirdly, this overview will form the basis for the recommendations that will emerge and be embedded in the 'Knowledge Management road map' that the organisation can adopt. The literature informing this chapter is sourced from the organisation's annual reports, recorded minutes, printed emails, observations, and interaction that the researcher has had with members of the organisation while engaged as a librarian. The PLAAS website www.uwc.ac.za/plaas was a key source of information relating to all its activities.

Throughout this study, the organisation Programme for Land and Agrarian Studies shall be referred to by the acronym PLAAS. PLAAS is a research and training unit of the School of Government at the University of the Western Cape. Established in 1995 with the clear objective of training black social research scientist in social research in the context of land and agrarian matters, PLAAS has grown in size and in the scope of the work that is being carried out. PLAAS has developed into a reputable organisation where key experts conduct research in areas of land and agrarian issues, poverty, and natural resources in the southern African context.

PLAAS' research activities are centred on four identified areas and according to the organisation's annual report (PLAAS, 2005b) these research activities are:

- *"Land reform and rural livelihoods.*
- *Natural resource management and livelihoods.*
- *Poverty dynamics in rural and urban areas.*
- *Fisheries and coastal management."*

As a unit of the School of Government at the University of the Western Cape PLAAS runs a post-graduate programme in Land and Agrarian Studies with offerings of a Postgraduate Diploma, MPhil and PhD. The academic staff is thus engaged in research, teaching, and supervision of postgraduate students.

2.2 History, Mission and Vision

PLAAS was founded in 1995, with the assistance of a core fund granted by the Ford Foundation. According to the *Ten Year Report* (PLAAS, 2005a:1), PLAAS' activities began with the appointment of a director who was tasked with the responsibility to initiate a programme whose focus would be to:

- *"Train personnel as applied social scientists in the Land and agrarian reform sector. The training was to be orientated towards black social scientists.*
- *Engage in policy-focused research"*

Initial activities included short courses that targeted Government and NGO (Non Governmental Organisation) workers. The courses were taught in collaboration with two partners – the Land and Tenure Centre of the University of Wisconsin, Madison and the Centre for Applied Legal Studies of the University of the Witwatersrand. Contract work from the post-apartheid Government made a significant contribution towards extending work activities. The focus of these contracts was in the form of advice and support for a range of policy issues, mainly matters relating to tenure reform, land restitution, and agricultural policy.

The organisation has expanded considerably since its inception in terms of the scope of its work as well as the number and quality of staff attracted to work in the organisation. For example in the year 2005, PLAAS employed a staff of 31 of whom 6 were researchers with doctorate degrees (PLAAS, 2005b: 3).

The vision and mission of the organisation is expressed through three statements that were outlined in the organisation's publications catalogue (PLAAS, 2006), and which state that the organisation:

- *"Engages in research, training, policy development and advocacy in relation to land and agrarian reform, rural governance and natural resource management.*
- *Is committed to social change that empowers the poor, builds democracy and enhances sustainable livelihoods. Gender equity is integral to these goals.*
- *Aims for rigour in its scholarship, excellence in its training, and effectiveness in its policy support and advocacy. It strives to play a critical yet constructive role in processes of social, economic and political transformation"*

From the Vision and Mission statements, specific areas of focus were pinpointed that served as a basis for projects that were initiated. Broadly the organisation engages in research and policy support, undertakes a teaching programme at post-graduate level, provides training, advisory and evaluation services. PLAAS focuses specifically on:

- *"Land restitution, tenure reform and land redistribution programmes.*
- *Community-based natural resource management.*
- *Coastal and marine resource management and policy.*
- *Rural livelihoods.*
- *Rural governance.*
- *Chronic poverty and development policy."*

2.3 Staff profile

PLAAS employs researchers with diverse backgrounds and research interests. By the year 2005, the organisation had a total staff of thirty one (31). According to the director's report of 2005 (PLAAS, 2005c: 4), the demographic profile of the staff can be summarized as follows:

> *"Statistically the majority of the entire staff – 79% was black, and 71% of the researchers were black. In gender terms, 46%of the entire staff was women and 29% of the researchers were women"*

The diversity of the staff means that they bring a wealth of expertise to the engagements of the organisation. Based on the staff profiles as posted on the organisation's website (www.uwc.ac.za/plaas), it can be seen that the research staff are well qualified to handle the activities of the organisation. The diverse research backgrounds, research interests and academic focus areas cover a range of

disciplines such as applied social science, sociology, rural sociology, sociology of poverty, development studies, research psychology, chronic poverty, social work, human and community development, public administration, land rights, environmental evaluation and justice, fisheries, forestry, agriculture, geographical sciences and water resources management.

2.4 Dissemination of research findings, knowledge, and information

The organisation actively disseminates its research findings by means of a variety of publications that range from books, conference proceedings, research reports, occasional papers, policy briefs, newsletters to information bulletins. According to the Ten year report (PLAAS, 2005a), these publications are of a high quality both in content and outlook even if not always peer reviewed. PLAAS however, also actively encourages its research staff to publish in peer reviewed journals. Some of the published work is a result of collaborative efforts between researchers of the organisation and external experts. The Ten-year report (PLAAS, 2005a:5) suggests that:

> *"Between mid 1995 – mid 2005, 5 books, 21 research reports, 49 occasional papers, 23 policy briefs, 8 newsletters and information bulletins were published".*

Although printed versions of these publications are for sale, anyone with Internet access can also download them from the organisation's website as PDF files at no cost. A copy of these publications resides in the resource centre and can be used as reference material. The researchers have also taken on roles such as book editors, commentators on radio and TV programmes and as authors of newspaper articles. Conferences, workshops and seminars are other key forums that provide avenues for dissemination, sharing and debate on research findings and on matters relating to land and agrarian issues. Same conferences are collaborative efforts, while many workshops have had a regional outlook. The organisation further hosts a regular seminar series where a range of topics are presented by both PLAAS and invited researchers.

2.5 Teaching, supervision and training activities

The organisation runs the first ever-established post-graduate programme in Land and Agrarian Studies in the Southern Africa region (PLAAS, 2005a: 6). The focus of the programme is to meet the demands of planners, policy makers, researchers and field workers in the land and agrarian reform sector. Students are carefully selected for enrolment in the post-graduate diploma, MPhil and PhD programmes. Such enrolment commenced in 1997 and since that time, there has been a steady increase in numbers and constitution of the students. For example in the year 2005, five MPhil students, and four-Postgraduate- Diploma and one PhD graduated (PLAAS, 2005b: 13). Over and above the South African students, the programme has also attracted students from countries such as Tanzania, Mozambique, Lesotho, Zimbabwe, and Namibia. Other than teaching on the post-graduate programme, researchers also teach on other programmes as visiting lecturers both within the University of the Western Cape as well as at the University of Cape Town, the University of Stellenbosch and a number of international universities.

Short courses and in-services training are a further feature of the organisation's activities. Participants are typically attracted from the land and agrarian reform sector. Commissioned courses are usually tailored to the needs of specific government departments. Some courses are run in collaboration with other organisations such as with the Centre for Applied Legal Studies (CALS) at the University of Witwatersrand and the Land Tenure Centre of the University of Wisconsin –Madison.

2.6 The Resource Centre

A rich collection of books, journals, and other audio-visual materials are housed in the resource centre. Subject matter that is collected is aligned to the core research areas of the organisation. The collection thus covers specific fields such as land tenure and land distribution; community based natural resource

management; research methodology; politics; development and economics; fisheries; poverty and water management. Although the core users are the researchers and the students on the post-graduate programmes, visitors seeking information are also granted access to the resource centre for research purposes. The resource centre has an automated information system and the catalogue can be accessed from the different computers within the organisation. The materials are classified using the Dewey Decimal Classification system.

2.7 Technology platforms

The organisation has launched a website on which the following information about the organisation can be found: staff members and contact details; upcoming events, and publications that can be downloaded at no cost. Through the website, the organisation is seeking for a global presence which may attract collaborative and network partnerships. A number of databases are held internally by the organisation such as the contacts database for partners and collaborators.

PLAAS further has access to and derives benefit from the campus-wide information technology infrastructure as stipulated by the University of the Western Cape's overall technology policy. The Internet is free of charge to all staff members and they further have access to the University's Main Library e-resources on their desktops. Every staff member has a work email address which facilitates communication and information sharing within the organisation.

2.8 Sources of funding

As mentioned in 2.2 a core fund granted by the Ford Foundation was used for the establishment of the organisation. This grant was renewed on a bi-annual basis until the year 2003. After the year 2003, PLAAS was provided with fairly substantial funding from various other donors to supplement its resource activities and was 'weaned' from exclusive reliance on the Ford Foundation for

funding. The key donors that generated most of the grants were: the Ford Foundation together with the International Development Research Centre of Canada, Liberty Life Foundation, The Swiss Agency for Development Co-operation, the Foundation for Human Rights, the Norwegian Government, and the Department for International Development (UK). Other smaller, but important donors include the European Union, the German Development Agency, and the World Fish Centre of Denmark. From South Africa, donors include the Land Bank, the Human Sciences Research Council of South Africa, Departments of Trade and Industry, Environmental Affairs and Tourism. (PLAAS, 2005a:1). Besides donor funds, engagement in training, consultancy work and publishing provide extra sources of income. These sources of income are however mostly not sustainable and the organisation faces severe challenges relating to raising funds to ensure long-term continuance (PLAAS, 2005a: 3).

2.9 Partnerships

Substantial amounts of time and effort are invested in developing and sustaining collaborative partnerships. These partnerships provide sources of collaborative expertise on projects and provide sources of funding for the organisation. These partnerships have been developed with a large number of research institutions nationally, regionally and internationally (PLAAS, 2005c:5). Some of these partnerships are with the Chronic Poverty Research Centre (University of Manchester), the Centre for Environment and Development studies (NORAGIC), and the Natural Resources Group of the Centre for Development Co-operation Services at the Vrije Universiteit in the Netherlands.

Within the Africa region, PLAAS has developed partnerships with a number of other research institutions, notably the Centre for Applied Social Sciences (CASS) at the University of Zimbabwe, the African Centre for Technology Studies (ACT) in Kenya, and the Community Conservation and Development Initiatives (CCDI) in Nigeria. (PLAAS, 2005a:2)

Within South Africa, PLAAS is involved in a number of research and teaching partnerships such as with lawyers from the Legal Resources Centre and researchers from the Integrated Rural and Regional Development Programme. Other partnerships are based on work and policy engagements such as with the National Land Committee, Development Services and a number of non-governmental organisations. (PLAAS, 2005a:2)

2.10 Research and policy engagement

Engagements in research projects are a core function and activity of the organisation. The Ten year report (PLAAS, 2005a:3) provides an outline of the main characteristics of these research projects:

- *"They generally run for a period of 2-3 years*
- *They are field based*
- *They aim at understanding social, economic, political, institutional and environmental dynamics*
- *They utilise both qualitative and quantitative research methods".*

Over the years, the organisation has carried out a number of successful[1] research projects and according to the ten-year report (PLAAS, 2005a) a large number of these projects have been successfully completed, while some are still ongoing. Typical examples of such completed research projects are:

- Vulnerability, labour markets and social protection (2005-2006).
- Participatory monitoring and evaluation of the South African Land Reform programme (2004-2006)
- Livelihood impacts of commercialization on emerging small-scale irrigation schemes (2003- 2006).
- National programme on coastal and fisheries co-management (2000-2005).
- Evaluating land and agrarian reform in Africa (2000- 2003)

[1] Successful here means that the research was done, the results were presented and reports and evaluations were carried out.

- Labour process, agrarian reform and informal institutions in the Western Cape fruit farms (1999-2001)
- Communal rangeland management in the Eastern Cape.(1998-2000)

Following the University of the Western Cape's commitment *to "responding in critical and creative ways to the needs of society in transition and to helping build equitable and dynamic society" (*PLAAS, 2005a:*4),* the organisation engages in policy processes in a variety of ways and at different levels of society. For example in the year 2005, the Department for Land Affairs invited the organisation to work on commissioned research projects (PLAAS, 2005b:11)

The organisation engages with government departments providing advisory services at national, provincial and local levels. Research employees act as consultants in roles ranging from facilitators of programmes, [such as policy workshops] to reviewers, and evaluators of projects (PLAAS, 2005b:4). Policy engagements focus on critiques of policies; involvement in public debates; presentations at workshops and conferences; publishing articles and presenting academic papers. Participation with a number of civil societies such as the agrarian reform sector provides forums for deeper understanding of key policy issues within the NGO (Non Governmental Organisation) and community based sectors.

Current policy initiatives have been engagements in policy debates centred on land restitution, land tenure, land redistribution, poverty reduction and agricultural policy. Researchers have handled roles such as being involved as co-coordinators of committees, contributors to policy formulation, advisors on major government initiatives, drafting of key policy papers, and based on the strength of their empirical and participatory studies, researchers have often been sources of testimony in legal hearings. PLAAS researchers have further had significant input in improving the conditions of workers on commercial farms (Human Rights Commission) and in a number of land restitution cases (PLAAS, 2005a:4).

2.11 Emerging issues and conclusion

The above description of the organisation highlights a few issues that need to be addressed to improve efficiency in the core business of the organisation. Aspects such as high staff turnover present challenges associated with loosing out on key experienced staff and their knowledge. The resource centre may not be fully maximizing on its potential as a springboard for activities that relate to the information and knowledge aspects of the organisation. The audit shall seek to explore how the organisation articulates the mission and vision of the organisation, and how embedded it is in the culture and core business of the organisation.

This chapter provided an overview of the organisation with regard to its core business, its culture and structure. The intention was that the overview would inform the audit framework that is developed in chapter three of this project. The recommendations in the knowledge management road map in the last chapter are further also linked to this overview.

CHAPTER THREE

KNOWLEDGE MANAGEMENT

"There are enough experts and vendors in the field of knowledge management to populate a small country and yet no one has figured it out successfully or managed to come up with the winning formula to be applied in governments [and organisations] *across the world. Thus no one knows the answer to knowledge management"*
(Sinclair, 2006: 16)

3.1 Introduction

This chapter serves to illuminate the field of knowledge management and based on the literature review, the chapter will assist in providing a better understanding of knowledge management and provide background material for the knowledge audit which is the focus of the project. A further purpose of reviewing the literature is to enable the researcher to derive a conceptual framework for the study.

Knowledge management has occupied centre stage in the recent past and there have been a wide range of discourses on the subject ranging from philosophical discussions of the subject to deriving a business understanding of the subject. There seems to be as many different views about knowledge management as there are authors writing about it. The quotation opening this chapter echoes the fact that there is no one definitive view of knowledge management. It is for this reason that this study explores knowledge management in order to obtain a better understanding of the area.

The past decade has seen a rise and an increase in abilities and capabilities of gathering and accessing information. This is associated with developments in computer and communication technology especially the growth of the Internet and the World Wide Web. These factors have accelerated the increase in production of information, leading to what some authors have termed as 'information overload' (Chase, 1998; Sistla & Todd, 1998). In fact Liebowitz

(1999: iv) suggest that "many organisations are drowning in information but starving for knowledge". Besides the increase in information, rapid telecommunication technologies have turned the world into one global entity, giving rise to global markets. Businesses are now competing for customers globally whose needs have to be clearly understood, and a further aspect is that workers from different work cultures, languages, and nationalities characterize business environments. This unique environment means that organisations have to develop new initiatives to find a way to stay ahead in their business undertakings. This environment is not limited to profit oriented businesses but it is a global trend that each and every type of undertaking faces.

According to Gupta, Sharma & Hsu (2004:2) for organisations to succeed in the 21st century, they have to be competitive, fast paced, maintain their market share and adapt to the global environment. For organisations to meet this scenario, they cannot continue to do business in the old way where capital, and physical assets where regarded as the main and often the only resources. New ways of doing business need to be created.

Knowledge management seems to be offering many benefits for organisations that seek to distinguish themselves in the current competitive market place. In such an environment knowledge is regarded as being a key resource that is critical for an organisation to survive (Gupta, Sharma & Hsu, 2004). If knowledge is a critical success factor for organisations, then mechanisms are needed that will help organisations to create, manage and use knowledge for their own survival.

The difficulty with the concept 'Knowledge Management' is that it is not easy to define. This has resulted in many organisations struggling to comprehend its exact meaning (Liebowitz, 1999: iv). A further problem is created by the evolving state of knowledge management which means that there are as yet no established theories that have been developed from practice. The many diverse

views and frameworks that organisations can draw from in order to implement knowledge management initiatives can sometimes lead to confusion.

A further problem is that, although it is generally believed that while there are many benefits that can accrue from knowledge management initiatives, organisations are still grappling with the problem of circumscribing the real 'value' that they derive from their knowledge management initiatives. Therefore, creating knowledge based practices is not an easy task for any organisation seeking to leverage its knowledge assets.

3.2 What is knowledge?

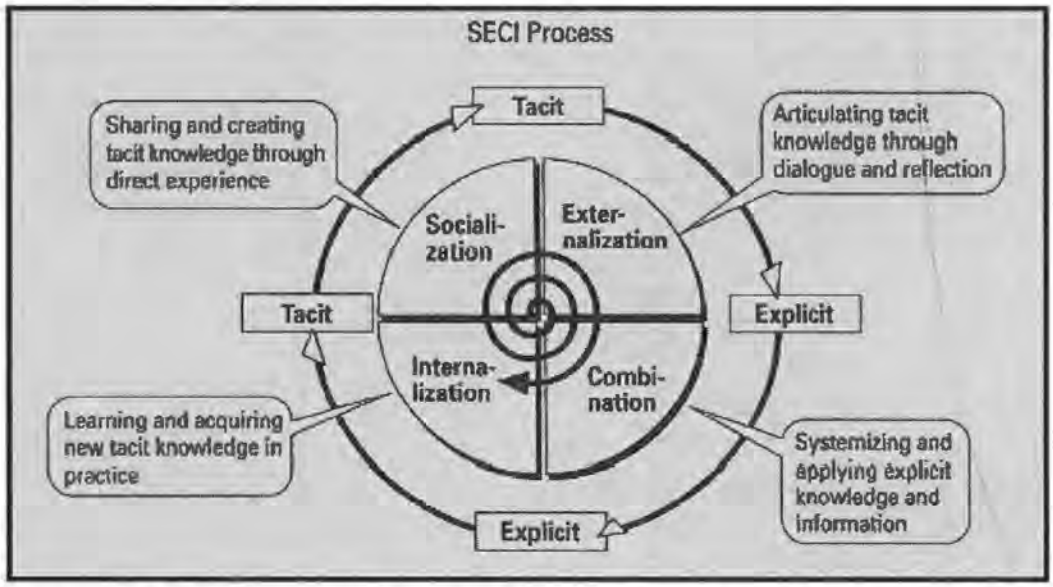
Many views of managing knowledge have been suggested, some very basic and others that are more philosophical in nature. Same authors again argue that knowledge cannot be managed and therefore, putting the words knowledge and management together suggests an anomaly. Before undertaking a debate of the main issues relating to knowledge management its underpinning concept knowledge should therefore be investigated and circumscribed.

The work of Nonaka and Takeuchi (1995) is seen as making a fundamental contribution to the understanding of knowledge. Nonaka and Takeuchi (1995) proposed the knowledge conversion model to explain knowledge and how it is transformed. Figure 3.1 below is an illustration of Nonaka and Takeuchi's SECI model. Knowledge conversion, they suggested takes place in four ways:

- Tacit to tacit **[Socialization]**. New Knowledge is acquired through shared experiences, face-to-face interactions and observations.
- Tacit to explicit **[Externalization]**. This knowledge is tangible. For example in document form or an online news group where tacit knowledge is captured to solve an external problem (Al-Hawamdeh, 2003).
- Explicit to explicit **[Combination]**. This is where explicit is combined with explicit. It could be where documents are captured in a database.

- Explicit to tacit **[Internalization]**. Appreciation of explicit knowledge creates new tacit knowledge. This could be through learning activities where individuals apply knowledge from a repository.

Figure 3. 1: Nonaka and Takeuchi's model of knowledge creation



Source: Takeuchi and Nonaka. (2004:9): *Hitotsubashi on knowledge management.*

According to Gupta, Sharma and Hsu (2004) knowledge resides in the individual's brain, and is present in ideas, talents, and relationships. While Skyrme (2002) emphasizes the fact that knowledge changes and evolves in the life cycle of an organisation. In their well-cited work *Working knowledge,* Davenport and Prusak (1998:5*)* suggest that knowledge is*:*

> *".. a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices and norms"*

Other authors such as Alavi & Leidner (2002) have defined knowledge in relation to data and information. Information is defined as data interpreted into meaningful frameworks, whereas knowledge is information that has been "authenticated and thought to be true" (Alavi & Leidner, 2002:16). Maglitta (1995) as quoted by Alavi & Leidner (2002) have suggested that "data is raw numbers

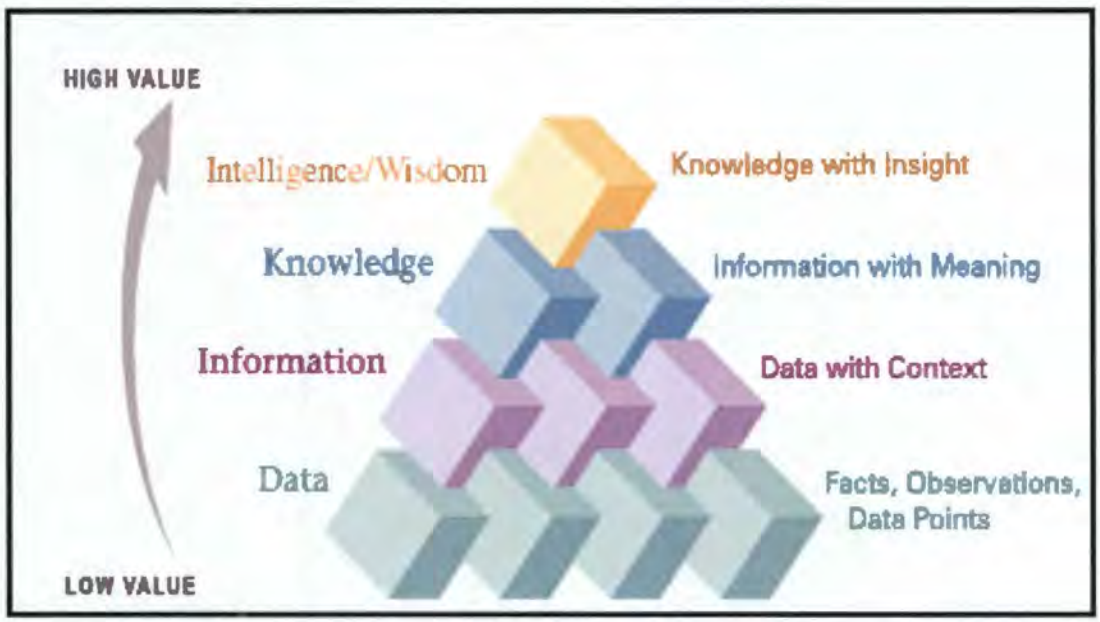
and facts, information is processed data, and knowledge is information made actionable" (2002:17).

According to Alavi & Leidner (2002:17), the distinction between information and knowledge is not in the structure, content, accuracy or utility but rather:

> *"Knowledge is information possessed in the minds of an individual: it is personalized or subjective information related to facts, procedures, concepts, interpretations, ideas, observations and judgments".*

Liebowitz (1999) in turn suggests that information answers who, where and when questions; while knowledge answers, how and why questions. Anantatmula (2005:171-88) adds a Knowledge Hierarchy to the definition of data/ information/knowledge. His views are depicted in figure 3.2 below.

Figure 3. 2: Knowledge Hierarchy



(Source): http://www.transknowformance.com/article.cfm?id=12

3.2.1 Organisational knowledge

According to Choo (2002: 259) organisational knowledge is "neither monolithic nor homogenous, but evolves from different origins and may be divided into tacit,

explicit and cultural knowledge." In his article on knowledge management in organisations, Bhatt (2001:70) suggests further that:

> *"Organisational knowledge is not a simple sum of individual knowledge. Organisational knowledge is formed through unique patterns of interactions between technologies, techniques and people [and] cannot easily be imitated by other organisations, because these interactions are shaped by other organisations' unique history and culture."*

According to Choo (2002) organisations engage in three knowledge activities which are: create (acquire) new knowledge; share (transfer) knowledge and utilise knowledge. He echoes what other authors such as Hylton, (2002a) and Liebowitz and others (2000) have said about the difficulty in managing knowledge. It is difficult to manage because it is so diverse – it only resides in artefacts (documents, rules, databases, routines) as explicit knowledge, but it is also tacit and resides within individuals (beliefs and mental models of the organisation). In addition to these two dimensions, Choo (2002:259) adds a third, cultural dimension. Choo's (2002:264) clear and explicit outlines of the three organisational knowledge types are depicted in adapted form in Table 3.1 below.

Table 3. 1: Types of organisational knowledge

Tacit knowledge	• The implicit knowledge used by organisational members to perform their work skilfully. • Tacit knowledge is hard to verbalize because it is expressed through action-based skills and cannot be reduced to rules and recipes.
Explicit knowledge	• Knowledge that has been codified formally or made tangible as physical artefacts and can therefore be easily communicated • Explicit knowledge maybe object-based or rule based.
Cultural knowledge	• The shared assumptions and beliefs about an organisation's goals, capabilities, customers, competitors. • These beliefs are used to assign value and significance to new information and knowledge.

3.2.2 Tacit knowledge

In an organisational setting, tacit knowledge, some times known as implicit knowledge, is the personal knowledge that people use to carry out their daily work activities and also to make sense of their worlds (Choo, 2002: 265). This type of knowledge is learned over time through experience and doing tasks over and over.

McInerney (2002: 1011) emphasizes that tacit knowledge "is the expertise and assumptions that individuals develop over the years that may never have been recorded or documented". Choo (2002) cites a good example of a technician who can tell the health of a machine by listening to the kind of noise it makes. This kind of knowledge cannot easily be documented and according to Choo (2002:265) "tacit knowledge is experiential and contextualized, cannot be easily codified, written down, or reduced to rules and recipes"

The strength of tacit knowledge is that it can be transferred by imitating and observing others at a task. This can be done through apprenticeship, internships (observing professionals at work) on the job training and shared stories. According to Choo (2002: 265), "story –telling provides channels for tacit learning because narratives dramatize and contextualize knowledge-rich episodes. Allowing a listener to reply and relive as much of the original experience as possible".

3.2.3 Explicit knowledge

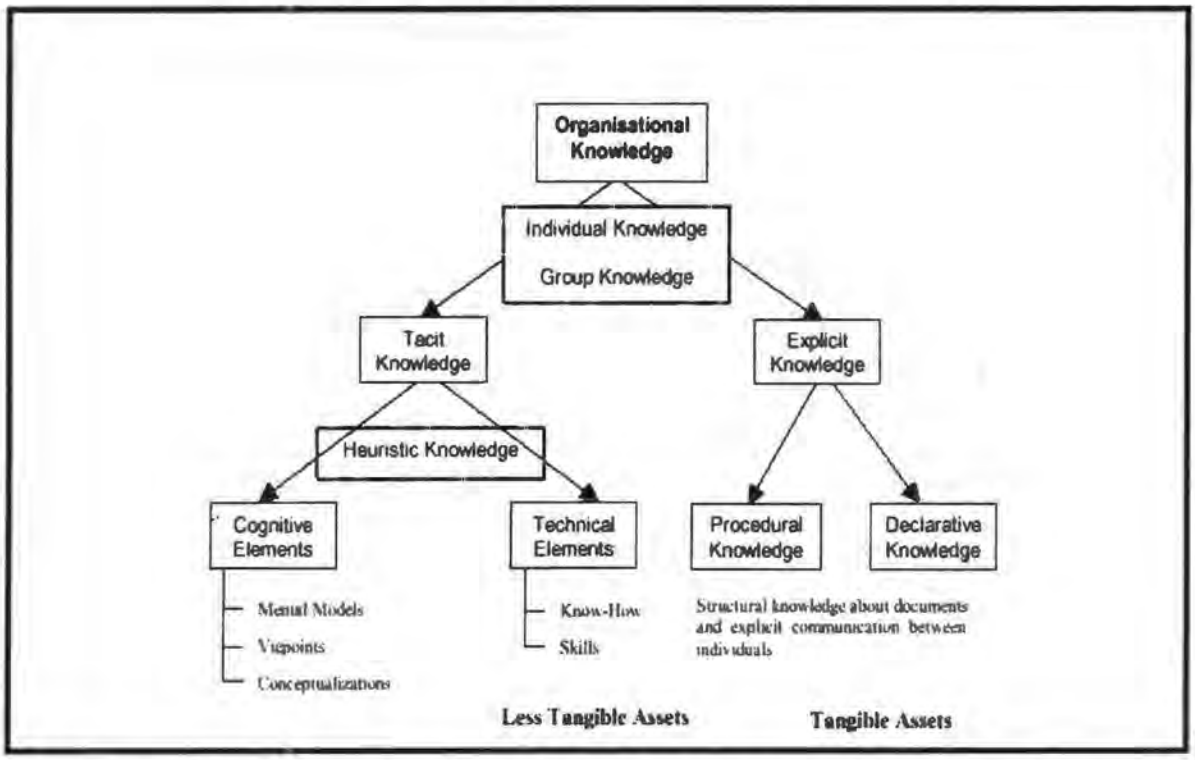
Explicit knowledge can be expressed formally- it can be documented, explained and recorded (McInerney, 2002). Explicit knowledge can easily be communicated and resides in rules and objects such as patents, software codes, computer database and, drawings (Choo, 2002:267). In fact explicit knowledge can be codified as intellectual capital. Intellectual capital being the "codified, tangible or

physical descriptions of specific knowledge to which the company asserts ownership rights." (Choo, 2002: 267).

3.2.4 Cultural knowledge

Cultural knowledge is seen to include the beliefs, observations and reflections that an organisation has about itself and its environment. This is based on shared experience (Choo, 2002, 268). In an organisational setting, beliefs will form the basis for making judgments about projects and markets. Choo (2002) suggests that cultural knowledge helps organisations to answer; "what kind of organisation are we; what knowledge would be valuable to the organisation; and what knowledge would be worth pursuing?" Vasconcelos and others (2002) provide a useful categorisation of these concepts by means of their ontological diagram of organisational knowledge.

Figure 3. 3: Ontological diagram of organisational knowledge



Source: J. Vasconcelos, & others. (2002)- *A design for a group memory system using ontology.* http://www.gse.harvard.edu/~t656_web/Spring_2002_students/kothuri_smita_knowledge_in_orgs.htm

Knowledge as we have already seen has many different definitions based on which background the one defining the subject is coming from. The concept is an old one which has gained relative attention in the recent past. However, for this project Bhatt's (2001:70) definition for knowledge and particularly 'organisational knowledge' will be adapted.*"[.Organisational]l knowledge is formed through unique patterns of interactions between technologies, techniques and people [and] cannot easily be imitated by other organisations, because these interactions are shaped by other organisations' unique history and culture".*

3.3 Knowledge Management defined

Many fields lay claim to some aspect of knowledge management. McInerney (2002) lists these to include information and library science; information systems; computer science; engineering; communication science; cognitive science; and organisational science. He suggests that their common ground lies in what each one of them thinks knowledge management can do for an organisation. He however, argues that knowledge management primarily resides with commerce and industry and because it is still evolving, it needs active input from the information technology fields. He further suggests that 'knowledge management would benefit from frameworks that can guide thoughtful and human knowledge practices' (McInerney, 2002: 1009).

Gupta, Sharma & Hsu, (2004: 3) view knowledge management as an emerging interdisciplinary business model dealing with all aspects of knowledge within the context of the firm. Wiig (1994) views knowledge management as an activity which entails the creation, codification, sharing and use of knowledge to promote learning and innovation in the organisation, in order to create value for the organisation. He clearly summarizes this as follows:

> *"knowledge management offers us with approaches, perspectives and visions for putting the knowledge we have to better use by finding out where it is needed, how we can access and leverage it better, and how we can control its atrophication. It also allows us to decide where, how and when to build, create and cumulate new knowledge.* Wiig (1994:131):

Wong & Aspinwall (2004: 93) propose their definition of knowledge management by likening it to "strategies, and processes of identifying, capturing, and leveraging knowledge". Wong & Aspinwall (2004) further remind us that while technology and organisational processes are key components of knowledge management, the actual emphasis should be on the people who have the knowledge within their heads.

Prusak (2001: 1002) in turn emphasizes that knowledge management should be focusing on 'value' as a function for satisfying the customer. In a similar vein, Levinson (1994) argues that knowledge management should be defined as "the process through which organisations generate value from their intellectual and knowledge based assets". Value is achieved through codifying what the employees, partners and customers know, and sharing that information with departments within an organisation aiming at achieving best practice.

From the information background, Ponelis and Fairer Wessels (1998); and De Long and others (1998) suggest that in reality, knowledge management practices in organisations are a mixture of Knowledge and Information Management. However, knowledge management projects have distinguishing characteristics which emphasize the 'value' added for the user and go beyond just delivering and making information accessible as found in Information Management.

Kelley (2003) goes further and argues that: "Knowledge management is a concept that combines content (data and information) with organisational processes and people, as well as technologies that enable their effective use". According to him, knowledge management cannot be understood in isolation as it is a fusion of the above factors which he refers to as the four pillars of knowledge management: the people, the content, the processes and the technology.

Smith (2005) adds another dimension to the concept of knowledge management. In her view knowledge management deals with creating value from the intangible assets of an organisation. This goes beyond just collecting information and

knowledge to the utilization of modern technology to connect various knowledge bases and eventually promoting knowledge sharing. Smith (2005) argues that in knowledge management, "the right knowledge (tangible and intangible) is connected to the right people at the right time to enhance the business of an enterprise, and value is added along the way to assist in the process"

This means that the whole concept of knowledge management is about exploiting "intellectual capital" (Smith, 2005; Green, 2005:194). This intellectual capital includes: products of human intellect (knowledge ideas, invention, expression, and unique name), customer relations, brands, and business methods. Green (2005: 194) in turn defines intellectual capital as "possession of knowledge, applied experience, organisational technology, customer relationships and professional skills". Many knowledge management authors such as Skyrme (1998) and Wiig (1994) underscore the fact that it is this intellectual capital that gives organisations competitive advantage in the market place.

Perrin, Vidal, & McGill (2006: 26-34) remind that in knowledge management, the underlying principle is to make sure that knowledge management is understood and a general acceptance of the need to share knowledge is cultivated. While there are benefits to applying knowledge management, success lies in an organisation's ability to embed knowledge in business processes, generate new knowledge, acquire knowledge and making sure knowledge gets to where it is needed for action (Gupta, Sharma & Hsu, 2004).

Choo (2002: 259) suggests that the overall objective of knowledge management should be to design the organisation's strategy, structure, processes and systems so that the organisation can see what it knows to create value for its customers and community.

Gurteen's (1999) definition of Knowledge Management is particularly relevant to this dissertation. He defines Knowledge Management as:

> *"....a business philosophy. It is an emerging set of principles; processes, organisational structures, and technology applications that help people share and leverage their knowledge to meet their business objectives [organisational]".*

This means that knowledge management is about meeting organisational objectives by sharing knowledge and making use of knowledge. This knowledge could be tangible – in knowledge repositories, databases (explicit knowledge). It can also be intangible – in patents and tacitly within individuals (tacit knowledge).

Liebowitz (2002:23) specifically sees knowledge management as "the process of creating value from an organisation's intangible assets and manage knowledge assets so that the organisation best leverages its knowledge internally and externally".

In concluding this section, from the above presentation of different views about knowledge management, this researcher adopts Liebowitz's definition of knowledge management as the guiding understanding of knowledge management. To re-echo, "Knowledge management is the process where an organisation [Enterprise] creates value from its intangible assets. This process deals with how best an organisation captures, secures, distributes, coordinates, retrieves, stores and manages the organisation's knowledge assets so that these assets are well leveraged both internally and externally".

A clear understanding of what knowledge management is, coupled with the benefits that can be derived from knowledge management practices, provides a basis upon which an organisation can build its knowledge management strategy. The benefits of implementing knowledge management initiatives are discussed in the next section.

3.4 Benefits of implementing knowledge management initiatives

According to Sinclair (2006:18) there are no rights and wrongs involved in doing knowledge management work. Any approach is acceptable provided it will get

knowledge management recognized as an important practice that will benefit the organisation.

This is because knowledge management is aimed at facilitating an organisation to make better business decisions and exploit the value of organisational knowledge (Sinclair 2006: 24).

The general acceptance of knowledge management as a key factor that gives organisations advantage is echoed throughout the knowledge management literature (Sinclair, 2006; Abell & Oxbrow, 2001). A number of authors have explained what an organisation stands to benefit from a knowledge-based philosophy and of particular relevance is the explanation provided by Davenport and Prusak (1998) and further embellished by Abell and Oxbrow (2001: 37). Such a philosophy is where an organisation "manages the balance of people, processes and technology that determines the organisation's relationship with its market". Other aspects that an organisation needs to be aware of are its values and attitudes which are embedded in an organisation's culture. An organisation that follows a knowledge based philosophy will derive many benefits and it will be distinguished by the following characteristics as highlighted by Snyder and Wilson (2002: 154-165):

- Better access to knowledge in the organisation by those who need it.
- Awareness is created in employees about their work. This pushes them to improve, and even learn operational procedures and work faster.
- Knowledge management leads to employee collaboration - helping to recreate a sense of relying on each other to achieve a goal.
- If knowledge management practices are used, people are more informed about the organisation, their customers and their products and it is possible to realize economic gains through returns and competitive advantage in the market.
- It encourages ideas and it rewards success.
- This organisation allows people to fail and learn from their failures.

- Encourages people to admit their problems, reflect on them and share the failure, success and problems, and solutions.
- It allows people to ask for help.
- Employees are valued for their knowledge and skill.
- It creates an environment that enhances capability and flexibility.
- It provides opportunities for the organisation to gain competitive advantage.

The above benefits that can be derived from knowledge based initiatives and practices suggest that knowledge management has a lot to offer organisations that are determined to change their environment.

In her well known work, *Meeting Managers' Information needs,* Butcher, (1998:5-21) discusses barriers that hinder the flow of information and the leveraging of learning and knowledge. These barriers are summarized to include: organisational politics, lack of coordination of organisational effort, communication barriers, distortion of information and inappropriate organisational systems. These affect the functioning of an organisation and are challenges that knowledge management should be aware of. It is suggested that knowledge management practices may help to redress the barriers that Butcher (1998) highlights above.

3.5 Knowledge management initiatives and practices

To reiterate, knowledge management is not a new concept. In fact Sinclair (2006: 14) reminds that mankind has in effect been practicing knowledge management for ages without the current label of 'Knowledge Management'. In the day to day activities, mankind is involved in knowledge exchange and in the process much time is spent on learning from, and sharing with others. What is clear though is that "knowledge management has gained new emphasis as a business [organisation] concept holding the promise of a better way of doing business" (Sinclair, 2006: 14).

Knowledge management initiatives are driven by both internal and external factors. Organisations may initiate knowledge management practices in order to tap into their customers' knowledge, and develop ways of retaining corporate knowledge, and improving the sharing of key knowledge by tapping into the tacit knowledge of employees (Sinclair, 2006: 133). It has already been acknowledged that implementing knowledge management practices is not an easy process because the whole area of knowledge management is not well articulated. Moreover Leming (2002) suggests that in pursuing knowledge related initiatives, the following two underlying objectives for any knowledge management initiative need to be integrated into the process:

- Creating an atmosphere were an organisation's data and information are leveraged to enhance their value and making sure they are available to anyone who needs to make use of them within the organisation.
- Putting methodologies and frameworks in place to capture the intellectual capital of the organisation.

Wiig (1999) identifies several knowledge management related initiatives that organisations are undertaking. He however, warns that "it is imperative not to copy what others do, even when identified as best practice" (Wiig, 1999: 3-18). This is because each organisation is unique and what is best practice elsewhere may not be applicable in another environment.

Fundamentally, each organisation needs to establish realistic expectations within the organisation and take into account the fact that knowledge management cannot always bring about the expected results. It however, paves the way to make better decisions and to achieve goals that will enable an organisation to be more competitive. Whoever is tasked with the responsibility of spearheading knowledge management initiatives should promote knowledge management as providing the means to effectively using knowledge to better equip employees to deliver better services. Key to knowledge management activities is the role of leadership in nurturing a supportive culture.

Organisational culture plays an important role in the success or failure of knowledge management initiatives. While organisational culture has been defined in the literature by numerous authors (cf. Schein, 1999),it is the researcher's view that Ribiere and Sitar (2003: 40) have provided the most comprehensive definition as can be seen below:

> [Organisational culture is] *a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that had worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems".*
>
> [It provides]. *routinized ways of doing things that people accept and live by. Organisations have norms and values that influence how members conduct themselves. These norms may encourage them to do so".*

Organisational culture can have varying effects at different levels in an organisation and Debowski (2006: 83) emphasises that "organisational cultures strongly influences retention and productivity as well as individuals' receptiveness" A culture where team work, collaboration and trust are built is more likely to succeed with knowledge management initiatives. A leadership style that is flexible to try new things, facilitate learning and provide room for building trust further underpins the success of knowledge management initiatives.

Knowledge management initiatives are varied. They could be cross-organisational, or focused on a single work area or even a challenge that an organisation maybe facing. Knowledge management initiatives can thus be approached in many ways based on assessment and the knowledge strategy developed in line with the organisation's broader business strategy. Such knowledge related initiatives may include items as summarized in table 3.2 below:

Table 3. 2: Knowledge based initiatives

• Acquire knowledge • Automate knowledge transfer • Create & organize knowledge repositories • Build knowledge bases • Build knowledge inventories • Manage intellectual capital • Develop customer knowledge systems • Survey and map knowledge • Develop knowledge sharing systems • Develop expert databases	• Create lessons learned programs • Develop knowledge management information systems • Maintain knowledge bases • Motivate knowledge creation, sharing and use • Embed knowledge in technology • Embed knowledge as systems and procedures • Create and pursue knowledge based strategy

Source: Wiig. (1999: 3-19). *Introducing knowledge management into the enterprise.*

3.6 Challenges associated with knowledge management initiatives

The critical role of knowledge to ensure success of any organisation in the current global economy cannot be over emphasized (cf. Gupta, Sharma & Hsu, 2004). This success can be achieved when organisations develop abilities and capabilities to effectively acquire, capture, share and manage their information and knowledge resources. Managing information is not sufficient to survive in a highly competitive global environment and only those organisations that have the capability to leverage knowledge will be able to compete in the market place. This means that such organisations have developed mechanisms where knowledge is constantly created and used (Drucker, 1994; Davenport & Prusak, 1998).

Davenport (1997: 187) emphasizes that even though "companies recognize that the knowledge employees have is the most valuable asset, knowledge management has so far been addressed at either a philosophical or a technological level with little pragmatic discussion on how knowledge can be managed and used for effectiveness on a daily basis".

He argues that organisations need to move beyond dwelling on tactics and build initiatives based on high-level principles, which an organisation has agreed upon. These principles can act as a guide in the knowledge management implementation plan.

Drucker (1994: 53-80) had already in 1994 asserted that organisations in a contemporary society were faced with challenging issues of building systematic practices for managing knowledge. These challenges are primarily associated with the lack of theory and standards of practice. Blacker (1995) added a further complicating factor i.e. the fact that the nature of knowledge is complex (it is concurrently abstract, implicit, explicit, physical, mental, developing and static). Tacit knowledge is in addition, very difficult to extract and externalize. Therefore, organisations that attempt to manage this knowledge have to carry out a number of activities which Choo (2002:265) has outlined as:

- "Creating an environment that enables the accumulation and learning of tacit knowledge.
- Setting up communities of practice, where individuals share their knowledge.
- Setting up of work teams where individuals work together on a project and thus have opportunity to share and learn from each other.
- Creating systems for searching and locating people with experience (expert systems).
- Creating open space kind of office spaces which enable open access to people working together".

Sinclair (2006: 24) summarizes the challenges and problems associated with implementing knowledge initiatives as:

> *"...much of the understanding of what knowledge management can actually do for organisations is still at a fairly low level, often only seen through the eyes of practitioners, academic research, and white papers, or from the perspective of small initiatives scattered throughout the business."*

Knowledge management is still gaining recognition as an important business philosophy.

This results in knowledge related projects having to compete for corporate resources with well understood business practices such as information technology and information management. Winning support for knowledge management can only be achieved if knowledge workers integrate their philosophy into the organisation's information and technology strategy. Sinclair (2006: 125) thus suggests:

> *"In fact, investing in information technology and information management without leveraging the potential benefits of knowledge management is definitely not smart business practice. Information technology lays a technology foundation on which information management practices and systems can be built, but the true payback will be when we use these systems and processes to enable knowledge to be captured, shared and used in the organisation"*

Therefore, incorporating knowledge management into the information technology and information management strategy of the organisation clearly has benefits. The researcher is thus in agreement with Sinclair's (2006: 125) view that a well established information management infrastructure is the foundation upon which a framework for knowledge management should be built.

Even though knowledge management holds out promises of greater efficiency in the work environment there are yet barriers such as developing a culture of learning and sharing. The old cultural mindset of hoarding knowledge as opposed to sharing knowledge needs to be addressed. Sinclair (2006: 15) speaks out strongly against "inappropriate, grounded, outdated management practices" that have "no place in the public service of the 21st century". Butcher (1998: 8) echoes the same sentiment and she concludes that information and knowledge hoarding impedes flow of information and sharing knowledge in an organisation.

The fact that knowledge management is not well marketed has disadvantaged it especially as far as convincing managers of its relevancy to an organisation. Like any marketing strategy, knowledge management proponents need to understand an organisation's needs and then match that with their product (Sinclair, 2006: 23) Sound knowledge management principles can provide a basis that can help to develop systematic knowledge management practices. Such principles vary,

but the work of Davenport (1997) in which he discusses ten principles of knowledge management stands as informative and shall be the focus of the next section.

3.7 Principles of Knowledge Management

In his known work '*Ten principles of knowledge management and four case studies*, Davenport (1997) spells out, and discusses key issues to bear in mind when embarking on a knowledge management initiative. It is now common knowledge that the practice of knowledge management is not well articulated in organisations (cf. Storey and Barnett, 2000; Wiig, 1999). This is attributed to the fact that most of the discussions on knowledge management are at a 'philosophical and technological level' providing little practical tactics to work with (Davenport, 1997: 187). Davenport argues that working from principles will help illuminate approaches and plans for knowledge management in an organisation. The ten principles are discussed below.

Principle 1: knowledge management is expensive

Knowledge is an asset that organisations have. However, for its value to be realized it needs to be effectively leveraged and this means that extensive investments have to be made. For example capturing knowledge, creating an information infrastructure for knowledge sharing and creating knowledge sharing systems are activities that require extensive monetary investments. An even more extensive challenge, however, is how to quantify knowledge which is mainly an intangible asset (Wiig, 1997; Gupta, Sharma, and Hsu, 2004). The other side of the coin is that not having the knowledge is also expensive. For example it is very costly for an organisation to make poor decisions based on insufficient or poor knowledge, therefore justifying good investments in knowledge management.

Principle 2: Effective knowledge management requires a mixture of people and technology

Knowledge management cannot succeed with people only; neither can it succeed with technology only. Davenport suggests a 'hybrid' solution were a knowledge management project succeeds well with a mixture of people input and technology. Some knowledge management projects have failed because of the lack of a clear understanding that knowledge management projects require a mixture of components. For example, computers are excellent at certain activities such as creating a platform for sharing knowledge, while humans are better at other activities (Davenport, 1999; Sinclair, 2006).

Davenport suggests that "when we seek to understand knowledge, to interpret it within a broader context, to combine it with other types of information, or synthesize various unstructured forms of knowledge, humans are the recommended tool" (1999: 188). His argument is important to this work and the researcher concurs "that we need to construct hybrid knowledge management environments in which we use both humans and computers in complementary ways "(Davenport, 1999: 188).

Principle 3: Knowledge management is highly political

According to Davenport (1997), knowledge management practices are highly political. This is partly because of the adage 'knowledge is power'. This power is associated with money, success, and lobbying. Davenport suggested that "if no politics appear around knowledge management initiatives, it's a good indication that the organisation perceives that nothing valuable is taking place". Knowledge management practices encourage knowledge sharing as opposed to 'knowledge hoarding' which is a common practice. The challenge still is for organisations to develop a different mind set about knowledge sharing that will facilitate efficient use of their knowledge assets. Sinclair (2006) suggests that if knowledge management is to be taken seriously, it needs marketing and this can be done

when knowledge management is advanced as playing a complementary role to information technology and information management which are better understood.

Principle 4: Knowledge management requires knowledge managers

Knowledge, like any other organisational resource (labour and capital) needs dedicated responsibility to engage in marketing, collecting and categorizing knowledge, run knowledge systems, develop and sell knowledge management strategies, influence information technology and information management infrastructure and also to audit and monitor the initiatives.

Principle 5: Knowledge management benefits more from maps than models, more from markets than hierarchies

Approaching knowledge management mapping is more practical than having hypothetical models that can be very abstract. For example it is easier to map customer needs than create a model to depict and map customer needs. Models are often only understood by the creators. Davenport's emphasis is on "mapping organisational knowledge as the single activity most likely to yield better access" (Davenport, 1997: 189).

Principle 6: Sharing and using knowledge are often unnatural acts

Knowledge sharing is not as natural as is generally stated, especially in the competitive business environment. In fact the adage 'knowledge is power' is ingrained in human beings, and sharing knowledge needs deliberate mechanisms to be put in place to ensure that it occurs. In some business organisations knowledge is regarded as the weapon that enables a person to stay ahead of others. Davenport asserts that the "natural tendency is to hoard our knowledge and look suspiciously upon that from others" (Davenport, 1997: 189). That is why some organisations use remuneration as an incentive to

encourage people to share their knowledge. Sharing and using knowledge are activities that need deliberate effort and motivation on the part of the leadership. Moreover, Hibbard & Carillo (1998: 49) have suggested that "getting employees to share what they know is no longer a technology challenge-it's a corporate culture challenge".

Principle 7: Knowledge management means improving knowledge work processes

Authors such as Wiig (1997) and Sinclair (2006) have already challenged that knowledge management should be used to add value to an organisation's processes. Some of these organisational processes may include market research, product design and development. Knowledge should bring improvements to core business activities. This means that knowledge management needs to be aligned with the overall organisational strategy.

Principle 8: Knowledge access is only the beginning

Davenport (1997: 190) contends that "if knowledge access were sufficient, then there would be long queues outside the nation's libraries". Providing access to knowledge is good practice but what counts is translating the knowledge into initiatives that will give advantage for the organisation. Sinclair (2006) suggests that good information management infrastructure and technology are factors that underpin success with knowledge management initiatives.

Principle 9: Knowledge management never ends

According to Davenport (1997), "there is no time when knowledge has been fully managed". Knowledge is constantly changing and going obsolete and this means that knowledge management processes need to be changed over time. Davenport challenges that because knowledge management never ends, it is pointless to invest time and resources in creating models and hierarchies. Using

knowledge maps according to Davenport will provide for a better picture of the knowledge environment of the organisation.

Principle 10: Knowledge management requires a contract

In pursuing knowledge management, various issues arise such as: who owns employee knowledge, knowledge in cabinets, consultants' knowledge while they are consulting, knowledge of outsourced employees. Davenport suggests that these issues need to be spelt out because intellectual property matters are increasingly becoming a key element in the global business environment. What underpins this principle is the fact that the global job market has changed; employees are moving jobs regularly – which may pose challenges of an intellectual nature.

These ten principles highlight important aspects to bear in mind while pursuing any knowledge management initiative. Knowledge management initiatives are worthwhile endeavours as long as they are understood and well leveraged.

3.8 Conclusion

Information and knowledge are clearly very important in the current changing global economy. Clearly, those organisations that are good at generating, storing, organizing and disseminating and using their knowledge will have tremendous advantage over those that are not doing enough to capitalize on their information and knowledge assets. Knowledge on its own cannot propel any organisation to advantage. There is, however, no doubt that when an organisation develops abilities to generate and use knowledge and also abilities to improve the information and knowledge flows within the organisation it will accrue many advantages. Learning within an organisation needs to be initiated and maintained as the sure way of utilizing the information and knowledge generated. It would be pointless to develop knowledge bases that are not utilised.

CHAPTER FOUR

THE KNOWLEDGE AUDIT

"A knowledge audit is the all important first major phase or step of a knowledge management initiative, and is used to provide a sound investigation into the company's knowledge 'health'. (Hylton, 2002a)

4.1 Introduction

As the quote above states, a knowledge audit is a core activity to any knowledge management initiative. This chapter focuses on the knowledge audit activity and aims to create an understanding of what a knowledge audit is, and provide guidelines for this project. Three knowledge audit case studies from the literature are presented to inform this project, and a framework for the research project is developed and presented at the end of the chapter.

The knowledge and skills of employees are increasingly taking centre stage as valuable assets for organisations. In the knowledge management literature it is in fact acknowledged that employee skills are the most important assets that organisations have especially in the current knowledge economy (Prusak, 2001; McInerney, 2002 and Wiig, 1994). The reason for this new paradigm is based on the recent revolution in which knowledge is recognized as the key asset that gives enterprises and organisations competitive advantage (Wong & Aspinwall, 2004). Therefore, knowledge and skills are being leveraged in order to improve business processes and creating innovation that will guarantee survival in the competitive world market environment.

The Gartner Group (2000a) supports the notion that knowledge is one of the most crucial aspects of today's economy. They thus suggested in 2005 that:

> *"By the year 2005, 75% of all global enterprises shall require to make adjustments requiring transformation of governance, human resources, workplace policies and workforce planning".*

Like many practices associated with knowledge management, the knowledge audit has been gaining importance as a process or activity that is 'critical' and which enables organisations to clearly determine, and visually highlight knowledge within the organisation. Authors such as Liebowitz and others (2000) emphasize that the knowledge audit is the first step in introducing knowledge management initiatives into an organisation.

Burnett and others (2004: 25) suggest that together with knowledge mapping activities, the knowledge audit will illustrate where knowledge is available within the organisation. In other terms the knowledge audit is known as the 'health assessment' of an organisation (Hylton: 2002b). This implies that it has to be conducted as a first step of a knowledge management initiative. A 'health assessment' of an organisation will highlight the 'health' status of the environment in terms of information and knowledge practices, organisational learning and organisational culture. These aspects have a bearing on an organisation's competitiveness in the market place.

Although it is generally accepted that the knowledge audit is 'critical' for introducing knowledge based initiatives into an organisation, a search through the knowledge management literature yields results which on closer examination merely offer a 'superficial' discussion of the knowledge audit. This leaves many unanswered questions on how to conduct a knowledge audit. Most references point to proprietary knowledge audit methodologies owned by consulting firms. These proprietary packages are only accessible with a cost and may not be economical for many organisations seeking to conduct a knowledge audit.

4.2 Defining the knowledge audit

The knowledge audit has been defined by many authors each adding their own perspective to the concept. From the various views that have been presented in the literature, the researcher will focus on three definitions that she has regarded as being particularly relevant for this study.

According to Liebowitz and others (2000: 3-4)) the knowledge audit is concerned with the assessment of potential stores of knowledge and it acts as the first step in developing an organisation's knowledge management strategy. Through the knowledge audit, an organisation discovers what knowledge it possesses and then it becomes easier to develop methods of storing and disseminating knowledge. The results of a knowledge audit can be applied to evaluating the needs of the organisation and deciding what changes need to be made within the organisation. The knowledge audit is not limited to capturing explicit knowledge but it also captures tacit knowledge which resides with individuals and in processes.

Stevens (2000) provides a cautionary note in his definition of the knowledge audit. He suggests that the knowledge audit is subject to different opinions and specifics. He suggests, however, a complete audit *'must evaluate in ascending order of difficulty, the state of the company's technology, how well its processes support knowledge sharing, and the work styles and the culture of it's people"*

The Gartner Group (2000a) concludes that a knowledge audit will provide sufficient insights for an organisation that is in the process of developing knowledge management initiatives. This is because the knowledge audit identifies *"the knowledge requirements of all processes that are heavily dependent on intellectual assets and that underlie the targeted business objectives. The Audit also identifies knowledge resources that can fulfil these knowledge requirements and the high level business process steps where that knowledge must be applied"*

4.3 Benefits and outcomes of the knowledge audit

Outcomes from the knowledge audit will provide one with knowledge maps and knowledge inventories. The outputs from a knowledge audit are further summarized by Capshaw (1999)[2] and quoted by Schwikkard & Du Toit (2004) as:

[2] Capshaw, S. 1999. Whaddya know: find out with a knowledge audit the first step towards knowledge management. Quoted in Schwikkard and Du Toit (2004)]

- "An assessment of current levels of knowledge usage and interchange;
- Knowledge management propensity within the enterprise;
- Identification and analysis of Knowledge management opportunities;
- Isolation of potential problem areas; and
- An evaluation of the perceived value in knowledge within the enterprise"

Through the knowledge audit, an organisation's corporate information and knowledge resources, policies, practices, the structure, and flow of knowledge within the organisation are revealed (Hylton, 2002b). The results provide insights into whether an organisation is ready to be called a knowledge-based organisation.

Completing a knowledge audit helps an organisation to become aware of important knowledge and information and where to place emphasis in order to improve efficiency in the work processes (Wiig, 2003). Through the knowledge audit, an organisation becomes aware of important knowledge and information and where to turn to for expertise. Knowledge that leadership considers critical to the success of the organisation is made visible (Schwikkard & Du Toit, 2004).

The knowledge audit further ensures that knowledge management initiatives are sustained. This is because audits help to identify gaps and overlaps of knowledge. Liebowitz and others (2000) & Hylton (2002b) have suggested that the analysis of the audit results can be used in developing a framework for an organisation's knowledge and information management strategy.

Lingham (2004) therefore suggests that the knowledge audit:

> *"helps the organisation to clearly identify the knowledge which is needed to support overall organisational goals, and individuals and teams; giving tangible evidence of the extent to which knowledge is being effectively managed and indicates where improvements are needed".*

Other benefits that an organisation can derive from a knowledge audit have been aptly summarized by Lingham (2004) to include the following:

- Helps an organisation to obtain a clear picture of what knowledge is needed to support organisational and individual goals;
- gives tangible assessment of how an organisation manages its knowledge and points to where improvement is needed;
- through knowledge maps, an organisation can see what knowledge exists in the organisation, how it flows through the organisation and who uses this knowledge;
- provides knowledge inventories, which contain the knowledge assets of an organisation. This allows the knowledge assets to become more visible; The outcome of this being that a clearer understanding of the role of knowledge in achieving organisation goals is obtained;
- lastly, though not least, knowledge audits offer information that is vital for the development of effective knowledge management initiatives and programmes.

4.4 Knowledge audit methodologies

There is as yet no universally accepted methodology that can be followed to conduct a knowledge audit. This is probably because the local situation can impact on or dictate the approach to follow in conducting a knowledge audit. The result has been that a wide variety of approaches and frameworks for a knowledge audit have been proposed, some of which have been applied, while others are still in the initial stages of development. Practitioners thus generally draw insights from a variety of methodologies and in the process develop their own tailor-made knowledge audit frameworks to conduct their audits.

A variety of knowledge audit data collecting tools such as interviews, questionnaires, focus group interviews, workshops, and site observation have likewise been used to collect audit data (Chong & Lee, 2005). Whichever

approach is preferred, Chong & Lee (2005:2) suggest that there should be one objective:

> *"To reveal, within the organisation, who keeps what knowledge (both explicit & tacit) and where, and who uses what knowledge for which task and what context"*

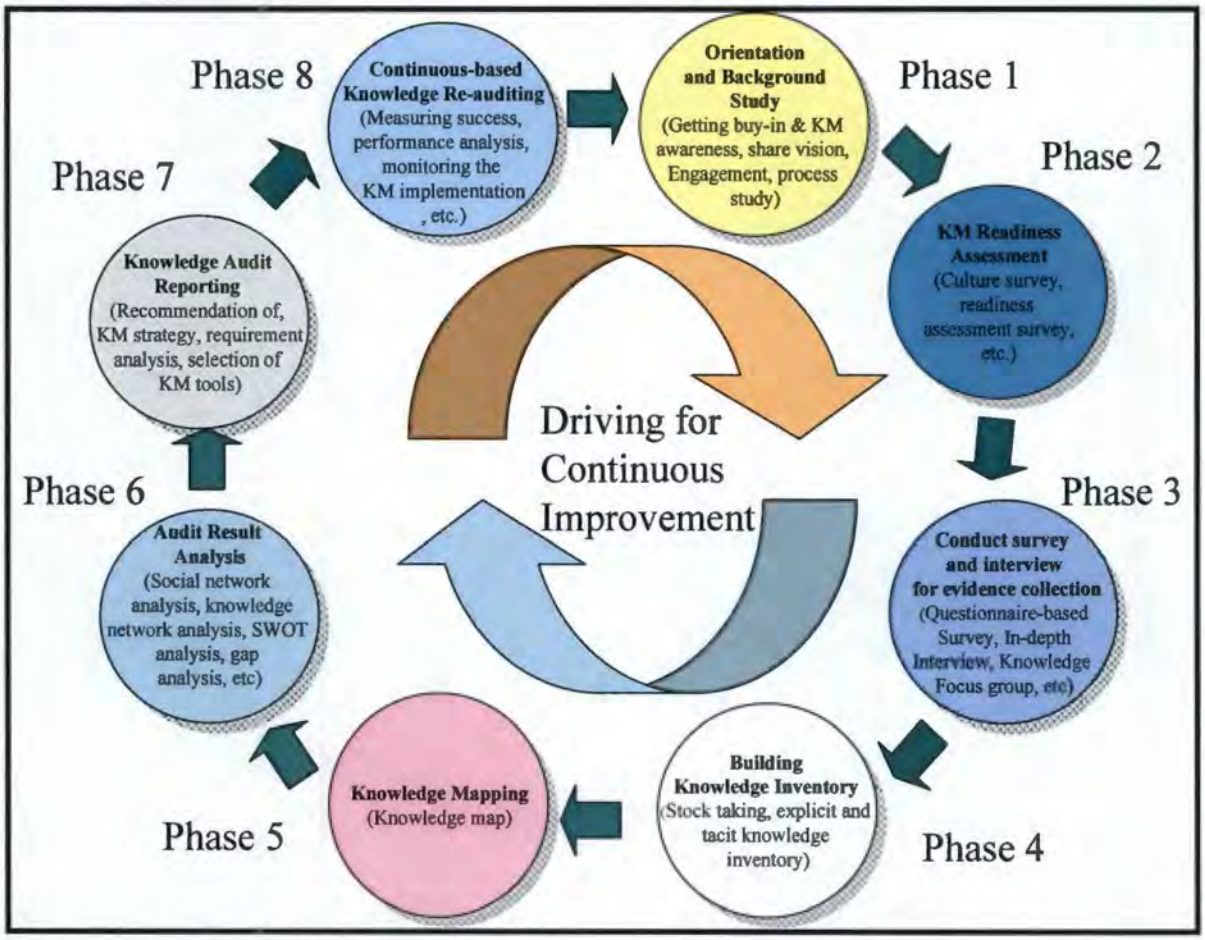
A fact that clearly emerges from the literature is that a knowledge audit can be conducted in any type of organisation. This may range from the manufacturing, to the health sector, to the academic sector, and to business enterprises.

To inform this project, this researcher examined a wide range of knowledge audit methodologies and frame works that have been applied in diverse settings (cf. Liebowitz & others, 2000; Hylton, 2002a; Burnett & others 2004; and Schwikkard & Du Toit, 2003). From this examination it became clear that although a standardized approach and unified theory has not been fully developed from knowledge management practice, there are recurring features that can be identified. This provides a positive indication that knowledge audits may in future be based on a more uniform approach. The researcher has selected three frameworks from the wide variety available to serve as the basis for the model she adopted for this study. These frameworks will be discussed in the following sections.

4.4.1 The systematic Knowledge Audit framework

Fai & others (2005) suggest that the systematic Knowledge Audit framework provides output that ensures that a proper audit has been carried out. This framework has been tested in a prestigious manufacturing company with good results. In summary, this framework is composed of eight (8) phases; the focus of which is on critical functions of the organisation. See figure 4.1 below for details.

Figure 4. 1: A framework for a Systematic Knowledge Audit



Source: Fai and others (2005). Systematic knowledge auditing with applications. *Journal of Knowledge Management Practice.(http://www.tlainc.com/jkmpv6.htm)*

The figure above shows the systematic knowledge audit framework. Basically, it is composed of eight phases which respectively include:

- "Orientation and background study.
- Knowledge management readiness assessment.
- Conduct survey and interview for evidence collection.
- Building knowledge inventory.
- Knowledge mapping.
- Audit result analysis.
- Knowledge audit reporting and
- Continuous-based knowledge re-auditing" (Fai, et al., 2005)

Part of the framework involves creating a knowledge inventory, which is a 'stocktaking' process that helps to identify and locate an organisation's knowledge assets and resources. The stocktaking counts and categorizes an organisation's 'explicit' and 'tacit' knowledge. Knowledge mapping is a key feature of this framework.

4.4.2 Knowledge audit methodology with emphasis on core processes

The methodology that emphasizes the core process approach has evolved as a counter measure to many knowledge management initiatives that try to manage everything whether significant or not (Perez-Soltero & others, 2006). The core process methodology is a ten stage process that contains the following steps:

- "Acquire organisation's strategic information.
- Identify organisational core processes.
- Prioritize and select core processes.
- Identify key people.
- Meeting key people.
- Obtain knowledge inventory.
- Analyze knowledge flow.
- Map knowledge.
- Provide audit report.
- Carry out continuous knowledge re-auditing." (Perez-Soltero & others, 2006:2)

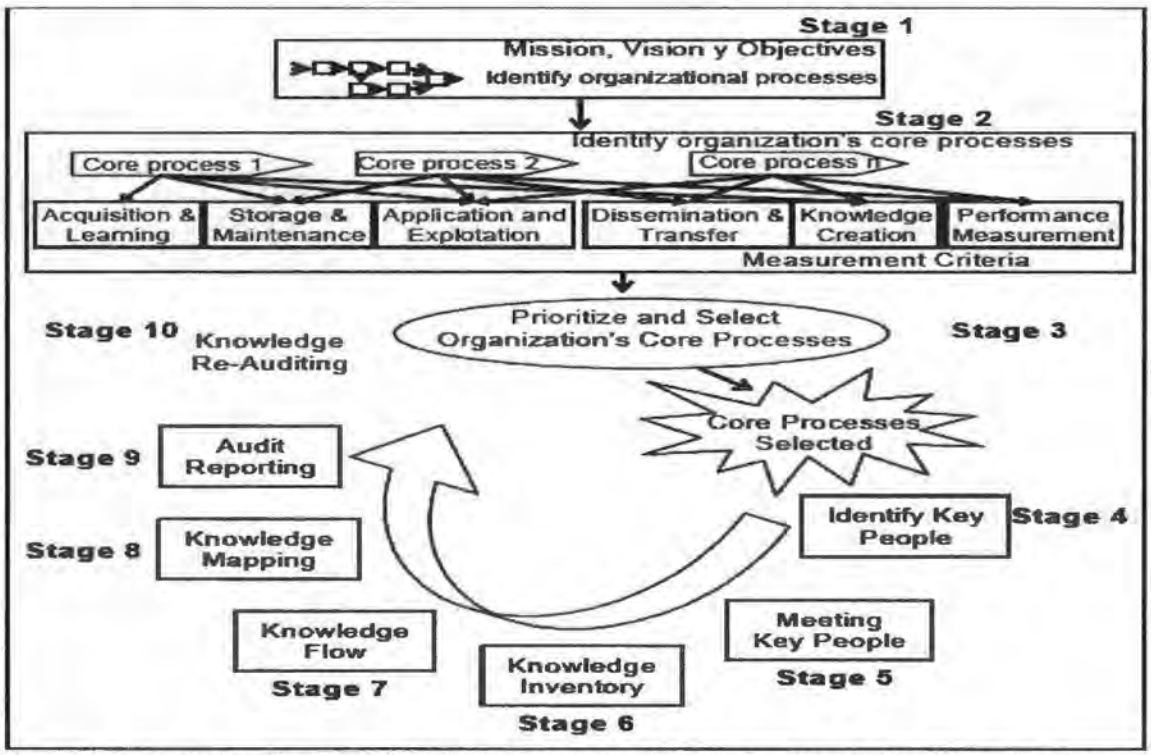
Perez-Soltero & others (2006: 3) believe that any knowledge audit should be based on the core processes of an organisation. Core processes are defined as the "collection of cross-functional activities that are essential for external customer satisfaction and achieving the mission of the organisation". These activities must integrate the people, materials, energy, equipment, and information. The core processes are the areas where everything should go right because core processes are so critical to the organisation and failure to perform

those processes may lead to the deterioration of an organisation. Perez- Soltero & others (2006) suggest the following criteria for the identification of core processes:

- "It has direct impact on the mission and vision;
- it generates revenue or is the most critical to overall success of the organisation;
- it allows to satisfy customer requirements, and
- has valuable human, technological and information resources"

The argument behind taking the core process approach is based on the notion that other methodologies "*do not establish a clear strategy explaining a suitable place where the Knowledge Audit in an organisation or enterprise should be initiated to give a complete audit*" (Perez-Soltero & others, 2006: 5). Below is the visual representation of the core process methodology.

Figure 4. 2: Knowledge audit methodology based on Core Processes



Source: Perez-Soltero & others. (2006: 5). *Knowledge audit methodology with emphasis on core processes*

Issues that need to be the focal point are highlighted, and tools are also provided for each stage. The methodology thus suggests where the actual audit should focus, and provides measurement criteria to assess the impact of core processes, cyclically analyzes core processes and provides for the detection of problems and opportunities.

4.4.3 The Information Audit Model

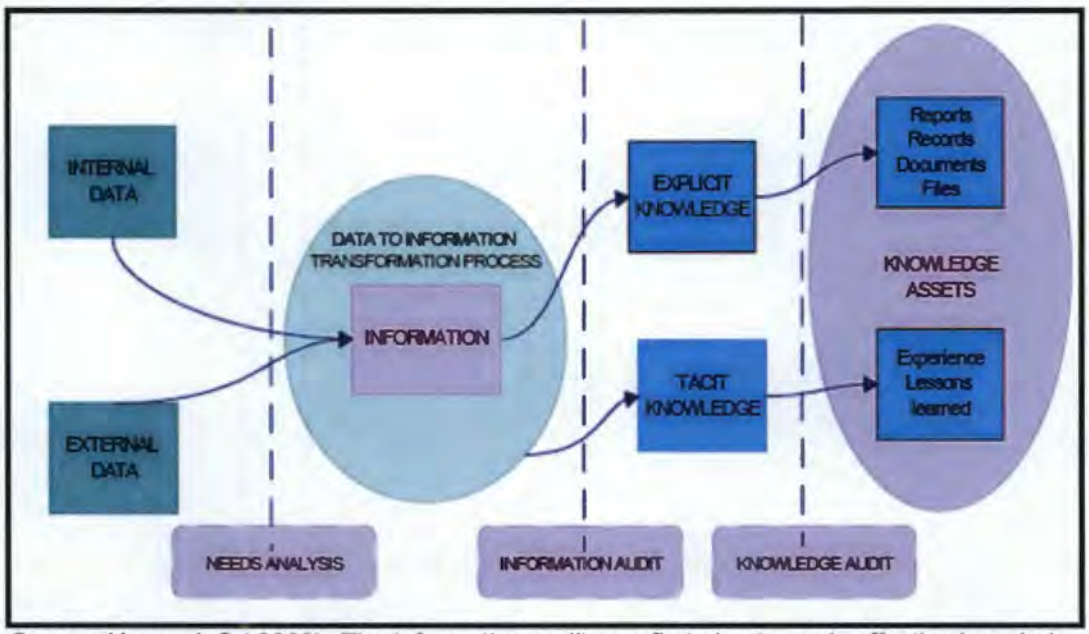
Henczel (2003) proposes The Information Audit Model (2003). According to Henczel, The Information Audit Model effectively determines the current information ecology of an organisation by identifying required information; establishing current information, identifying gaps, inconsistencies and duplications. The reason why Henczel promoted her Information Audit Model is because:

> *"Knowledge management encompasses both the management of information and the management of people. Knowledge cannot be managed directly only the information about the knowledge possessed by people in organisations can be managed" (Henczel, 2003:211)*

This means that sound information management practices provide a backbone for any effective knowledge management initiative. Developing technical systems, which disregard information resources and the people, may lead to failure in knowledge management initiatives. Therefore, Henczel (2003) sees the information audit as the most 'critical' activity as far as developing knowledge management initiatives are concerned.

The Information audit Model advocates for the implementation of three activities that will ensure that an effective knowledge management strategy is developed. These stages are highlighted in figure 4.3 below.

Figure 4. 3: From Needs Analysis to Knowledge Audit



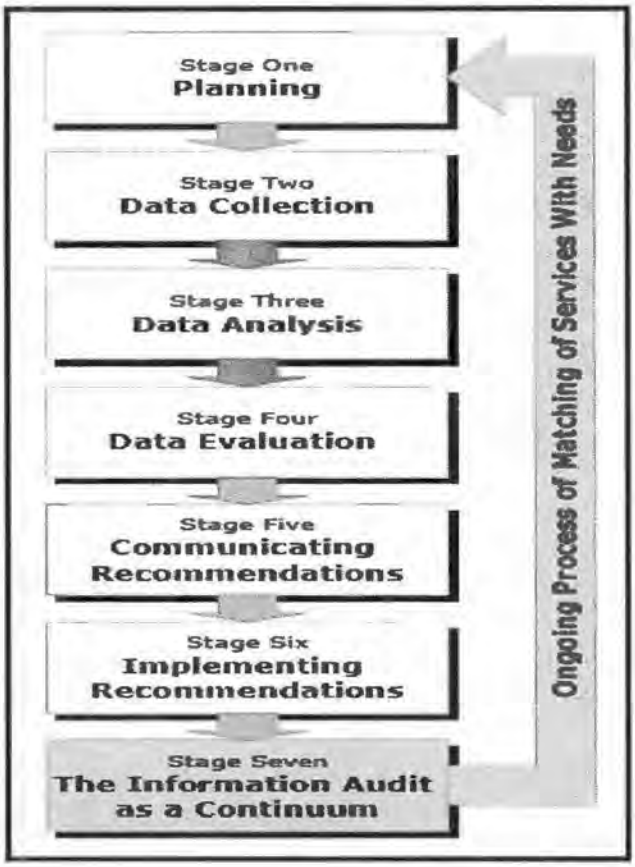
Source: Henczel, S.(2003). *The Information audit as a first step towards effective knowledge management:* http://www.ifla.org/VII/d2/inspel/00-3hesu.pdf

According to Henczel (2003) an information audit is "a systematic evaluation of information use, resources and flows, with verification by reference to both people and existing documents in order to establish the extent to which they are contributing to an organisation's objectives". Henczel suggests that the Information Audit Model will benefit an organisation by:

- Identifying information needs, and resources.
- Mapping information flows.
- Highlighting gaps, duplications, inefficiencies and areas where there is over provision.

The model is a seven step process which begins with the planning stages and ends with the information audit all conducted as a continuum. The most critical aspects that are necessary for its successful implementation are provided and emphasis is placed upon the importance of understanding the organisation's key activities. These activities being the functions, culture, goals, objectives, core business and external entities of an organisation. The seven step processes are highlighted in figure 4.4 below.

Figure 4. 4: Henczel's seven – stage Information Audit Model



Source: Source: Henczel. (2000). *The Information audit as a first step towards effective knowledge management:* http://www.ifla.org/VII/d2/inspel/00-3hesu.pdf

4.5 Summary of the discussion of the models

From the above it is clear that all three models have similar aspects, especially the process of conducting the knowledge audit. However, the conclusion reached from an analysis of the models is that there can never be a 'one size fits all' kind of approach because each organisation is unique. The three models discussed above provided valuable input into the development of a model for this research project (cf. 4.7). The aspects that were deemed to be particularly relevant were the stages in a knowledge audit, what each stage would be looking for, and how to conduct the knowledge audit.

4.6 Deliverables of the knowledge audit

The main deliverables of a knowledge audit are knowledge maps and knowledge inventories. A knowledge map reveals by visual representation what knowledge exists, identifies gaps and duplications and pinpoints knowledge that may be untapped in the environment. An inventory in turn will explicitly list the knowledge and information assets of the organisation, thus making that knowledge and information more visible (Lingham, 2004).

Knowledge maps are important tools for knowledge management. They are techniques that are used in the visualization of knowledge and in the process clearly identify relationships. Through knowledge maps, important features are highlighted (Vail, 1999: 11) and they assist to elicit, share, learn, and create knowledge, as well as assess organisational knowledge and culture. Maps can be simple or if more detailed they explicitly depict knowledge flows in the organisations.

Kim and others (2003:35) identify the following kinds of mapping techniques: *"Frames, Petri net, semantic network, concept mapping and knowledge mapping"* The knowledge mapping technique is our main concern; which according to Kim & others (2003:35) is *"a process, methods and tools for analyzing knowledge areas in order to discover features or meaning and to visualize these in a comprehensive, transparent form, such that the business-relevant features are clearly highlighted"*. Certain aspects of an organisation's knowledge are transferred into graphical form so that they can be understood better.

The knowledge inventory is the outcome of the 'stock take' and provides an inventory that can be used to locate and identify knowledge and information assets and resources throughout the organisation. Hylton (2002b:7) suggests that the inventorying activity should involve counting and categorizing both the

'tacit' and 'explicit' knowledge of the organisation. A typical inventory should list the following explicit knowledge areas:

- Explicit knowledge available (types, categories of documents, libraries, internet/ intranet websites, links and external sources).
- Where explicit knowledge is sitting within the organisation
- How it is organized and how it is accessed.
- For what purpose the explicit knowledge resources exist, are they useful / relevant?

On the other hand, tacit knowledge deals with what resides within the individual, and the focus is on the people who have the knowledge (Hylton, 2002b; Alavi & Leidner, 2002). The kind of information to look out for includes:

- What kind of employees the organisation has – categories and their numbers.
- Where they are located in the organisation.
- What their work entails.
- Their academic qualification and skills.

Together with a knowledge needs analysis, the inventory plays a vital role in identifying gaps and duplications that impede effective work in an organisation. The value of the knowledge audit is clearly emphasized by this activity.

4.7 Previous knowledge audit case studies

Identifying and reviewing previous case studies served the purpose of deepening the researcher's understanding of the topic and adding context. For this purpose the researcher selected three case studies of knowledge audits previously carried out, to analyse, provide context and inform this particular knowledge audit. These three methodologies were appropriate to this research.

4.7.1 Knowledge audit of a behaviour health care organisation

Liebowitz and others (2000) carried out a knowledge audit in a small behaviour health care organisation (fifty employees). Fifteen employees were involved in the survey of which only five were returned. They provide the tool (questionnaire) that was administered. The knowledge audit was based on three areas: Identifying what knowledge existed in the target area; identifying what knowledge was missing in the target area; and then providing recommendations to senior management regarding the status quo (Liebowitz, 2000: 5).

Their analysis was based on the five returned questionnaires and informal interviews they had with management. The informal interviews were used to gain understanding of the corporate culture of the organisation. Their recommendations were that a follow up study was necessary with more extensive interviews, focus groups and observation. The knowledge audit report to the senior management of the organisation is precise and is embedded in the general knowledge management literature with specific reference to the value of knowledge management practices.

Although the above knowledge audit was a 'quick' job done, it does give precise details of how the audit was conducted and the tool that was used to collect the audit data. Being a preliminary audit, it is thus not unexpected that a follow-up study was recommended:

> *"Certainly a proper business needs assessment and cultural assessments also need to be performed as part of the knowledge audit. Careful analysis of the questionnaire results should be conducted, along with follow-up interviews, focus groups, and other related methods"* (Liebowitz & others, 2000: 10).

4.7.2 Analyzing knowledge requirements: a case study

Schwikkard and Du Toit (2004:104) carried out a knowledge audit in a business enterprise in southern Africa. The enterprise has different units and is a global

operation with about 890 employees. The enterprise deals in resource planning with a view of offering specialist outsourcing capabilities.

The objective of the audit was "to identify and describe the current and future knowledge requirements of the enterprise". The researchers applied Grounded Theory principles in collecting and analyzing data for the knowledge audit. Interviews were conducted; five with business unit leaders (to solicit their strategic perspective on knowledge requirements), and three workshops were conducted with representatives of business units (to obtain requirements of each business unit).

The audit resulted in a descriptive knowledge requirement programme for the organisation in which information and knowledge assets plus gaps were identified; functional requirements and the architecture were also outlined.

It was interesting to note that the Grounded Theory approach was applied in this study to collect and analyze the data. The outcome of the audit was a realisation that employees had information needs that had to be met before any further activities of knowledge management could be embarked upon.

The authors conclude that "once the fundamental building blocks of knowledge content are established, only then can a sophisticated solution be developed that will enable knowledge management activities"

4.7.3 Knowledge auditing and mapping: A pragmatic approach

Burnett and others (2004) carried out a knowledge audit in a tax department within a large multinational oil company. The objective of the audit was to assist the department to develop their own knowledge strategy that would help them leverage the intellectual capital of the department. Methods employed to collect data for the audit included:

1. A questionnaire that was administered to all twenty staff in the department. This was to gather data on knowledge based processes existing both at personal and departmental level.
2. A 'learning' day activity was organized to facilitate interaction of the staff and also develop a common understanding of knowledge management and 'buy in' for the project.
3. Audit interviews were conducted face-to-face and utilizing a semi-structured interview schedule with twenty staff members. The data from the interviews provided detailed information from each individual.
4. The data that had been collected was used to develop knowledge maps.
5. A feedback event was the last stage in the audit process in which the methodology for the audit was explained and an audit report was presented to senior leadership.

The detailed outline of the audit process provides key insights that shall be applied to this research audit. Key to the knowledge audit was meeting with senior management to establish the current situation in the organisation. In the initial stages they developed a knowledge process model that was used throughout the audit processes.

The result from the questionnaires and interviews were used to develop knowledge maps that mapped each individual.

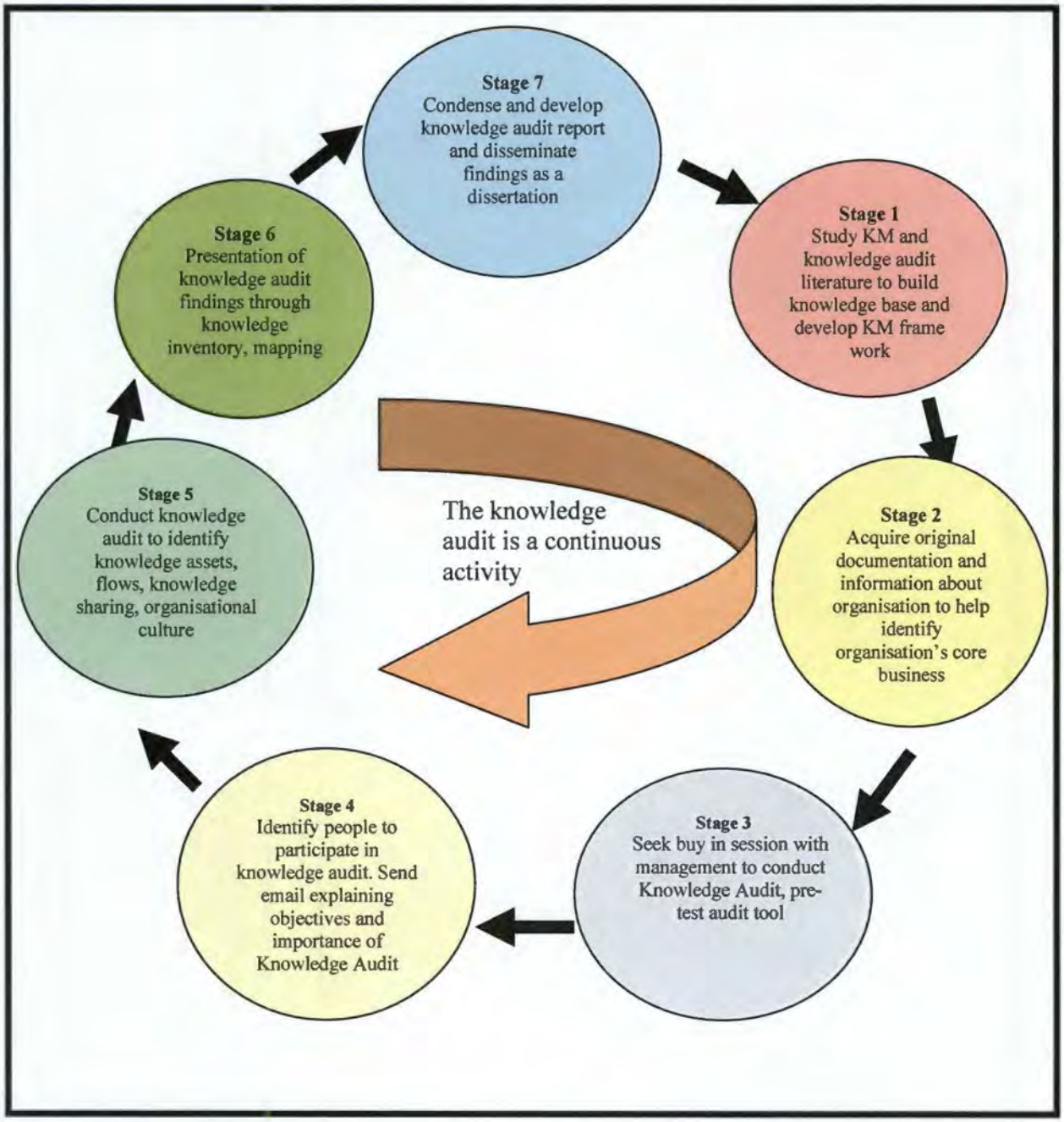
Burnett & others (2004) remind that mapping is a time consuming process but the benefits are that a pictorial representation of where knowledge was acquired, stored, applied and disseminated by each individual is obtained (2004:33). They (2004: 36) warn that "in knowledge management implementation projects, the project and tools used must reflect the culture and operations of the organisations within which it is applied".

4.8 Proposed Knowledge Audit framework for this study

Based on the knowledge audit literature and especially the methodologies and case studies investigated for this project, a tentative framework was derived to guide the audit process. The intention was to conduct the knowledge audit of the organisation covering elements such as the people, the organisational culture, the processes and the technology.

It is emphasized that this knowledge audit was exploratory and the proposed framework is tentative, since it was envisaged that changes would occur in the course of the actual data collection stage. The preliminary framework prepared for the audit consisted of seven stages. These stages and their core activities are depicted in the figure 4.5 below.

Figure 4. 5: Proposed Knowledge Audit framework for this study



Each of the stages in the above framework is explained below, indicating details of each stage, the focus of and the benefits from each stage. It should be noted that knowledge and information audits are not an end in themselves; they are a continuous process that an organisation ought to engage in from time to time to ensure continuous improvement.

Stage 1

Study the knowledge management and knowledge audit literature to build a knowledge base and develop a knowledge audit framework: The objective behind studying the literature is to develop a better understanding of knowledge management and knowledge audits. During this stage, the researcher is thinking and forming ideas of the knowledge audit framework, objectives of the audit are defined as well as the extent of the audit.

Stage 2

Acquire original documentation and information about the organisation to help identify the organisation's core business. The objective is to extract the mission, vision, objectives, history and activities of the organisation. The kind of places to look for such information would be: general documentation of the organisation, annual reports, minutes, press information and the organisation's website. At this stage one also begins to sensitize staff about the intensions of the impending knowledge and information audit.

Stage 3

D*uring this stage, seek buy in session with management to conduct the knowledge audit, and take the opportunity to pre-test the audit tool.* At this stage, explain the value of knowledge management, the knowledge and information audit, and what the beneficial outcomes of the audit shall be. With permission granted, one is then ready for stage 4.

Stage 4

Identify people to participate in the audit. This can be done through personal profiles and talking to individuals requesting them to participate. Send information to identified people explaining objectives and importance of the audit. One has to draw from the research methodology literature to determine, especially how the sample should be drawn. This step is crucial because the people identified and sampled are the sources of the data needed in the audit. The stage is now set for data collection and building rapport with individuals.

Stage 5

This is the data collection stage or the actual knowledge and information audit stage. The data is collected by means of interviews, and an interview guide is used to establish knowledge and information assets, flows, knowledge sharing, organisational culture, etc. Consider tape recording interviews with permission from the interviewees. This will help in capturing important data that may easily be missed in the course of the interview. The data can be transcribed later.

Stage 6

Present results with help of knowledge inventories and mapping tools. The knowledge inventory taps into knowledge sources, ownership, distribution, and location of knowledge in the organisation. Utilise knowledge maps to indicate knowledge location, individual employees, and knowledge sharing and knowledge exchanges. Other tools to draw from include: diagrams, tables, graphs and knowledge mapping software.

Stage 7

Provide managers with Knowledge Audit outcomes. Condense and develop knowledge audit report and present findings as a dissertation. Aspects to include: knowledge assets, gaps, recommendations for improvement and a road-map for knowledge management that could be adopted and implemented for continuous improvement.

4.9 Conclusion

Knowledge audits are being recognized as important interventions in the business world because through the audit activity an organisation is able to assess its information and knowledge environment and the related aspects of information technology and organisational culture. The current global market environment where innovation and creativity is a key to success means that any organisation would do well to develop its innovative and creative capabilities; the

knowledge audit can highlight aspects that will enable intervention and action in this light.

There is no standard knowledge management audit methodology and this can be attributed to the fact that a single methodology would not suit all organisations. Each organisation is unique with its own unique characteristics. In fact, Kirrane (1999:3) has suggested that:

> *"No template exists for making knowledge management easy, because it ultimately requires complex interrelated changes in organisational culture and systems. However, by investigating knowledge management deeply perhaps with knowledge management team- you will be able to choose which characteristics best fit your* [organisation]*".*

What can be done is to modify and adopt methodologies that have been reported in the literature and come up with a framework that would suit a specific environment. This may explain why Knowledge audits have not as yet been standardized. The literature review has provided sufficient insights that have served as a basis to develop the audit methodology for this project.

CHAPTER FIVE

RESEARCH METHODOLOGY

"Well for a start, there needs to be recognition that there is no 'best type' of research. There are only good questions matched with appropriate procedures of inquiry, and this is always driven by the researcher, not the method. It is up to the researcher to thoughtfully put together the pieces of the jigsaw in order to form a meaningful picture of the world being explored"
(O'Leary ,2004: 9)

5.1 Introduction

This study explores knowledge management initiatives by means of a knowledge and information audit carried out in the organisation that was described in chapter two. The definition of Knowledge management the researcher has found to be particularly relevant to this project (cf. chapter 3.3) and which she has adopted as the underlying framework for this study is the one provided by Gurteen (1999) where they suggest that knowledge management is:

> *"....a business philosophy; emerging set of principles; processes, organisational structures, and technology applications that help people share and leverage their knowledge to meet their business objectives* [organisational]".

The decisions regarding the best methodology and data collecting technique to use for this project was informed by and based on recommendations made in the literature dealing with knowledge audits (cf. Chapter 4) and the knowledge audit framework that the researcher proposed in Chapter 4.7. The most appropriate research design to adopt for the study was deemed to be a qualitative approach where the audit would take the form of a case study.

5.2 Case study methodology

Knowledge and information audits seek to understand the 'how' and 'why' questions in an organisation's knowledge and information environment. Case study research, according to Yin (1994:10) provides a basis from which valid conclusions based on events and evidence are collected. Eisenhardt (1989: 536)

argues that case study research is useful in exploratory studies, as well as in developing theory. While Cooper and Schindler (1998) view case study research as providing opportunities for full contextual analysis of a case leading to development of new hypotheses thus advancing new theory.

The grounded theory approach that is extensively used in qualitative research was further seen to provide an appropriate methodological framework for this project. Grounded theory was originally developed by Glaser and Strauss in the 1960s as a new methodological approach for qualitative research in the social sciences (Glaser & Strauss, 1967). They had observed that qualitative researchers were confronted with the dilemma of interpreting large volumes of unstructured qualitative data without having an established theoretical framework to draw from. With the grounded theory approach, theory must emerge from the data or theory must be grounded in the data. It applies a systematic set of processes to eventually arrive at a grounded theory about a phenomenon (Strauss & Corbin, 1990).

The argument of grounded theory is that a researcher needs to enter the field with no theory and preconceptions. When the researcher conducts field research, he or she then retreats to existing theory for comparison until saturation is reached and this will then allow theory to emerge. This research method can be used by any one conducting qualitative research because what counts "are the procedures and they are not discipline bound" (Strauss & Corbin, 1990: 26). Strauss and Corbin emphasise that the grounded theory approach can "provide each investigator with procedures for analyzing data that will lead to the development of a theory useful to that discipline" (Strauss & Corbin, 1990: 26).

Using the grounded theory approach, the researcher identifies conceptual patterns and categories. However, Henwood & Pidgeon (1992: 7), warn that in qualitative research, the researcher is confronted with vast amounts of unstructured data to work through. Babbie and Mouton (2003: 292) reminds that the approach places emphasis on research procedures, especially systematic

coding and it "allows studying a relatively unknown social phenomenon around which no specified theory may exist yet".

Although this knowledge audit draws extensively from the grounded theory concept, it should be stated that the methodological approach followed did not try to emulate the classical approach outlined by Strauss and Corbin, but used it merely as the organisational framework. The work of Eisenhardt (1989: 536) on case study methodology was further found particularly appropriate for this study. She details an eight step road map that can be applied to case study research. These eight steps in chronological order are:

- Getting started.
- Selecting cases.
- Crafting instruments and protocols.
- Entering the field.
- Analysing the data.
- Shaping hypothesis.
- Enfolding literature.
- Reaching closure.

The eight steps above informed the knowledge audit especially in shaping the audit process and "crafting" of the data collecting interview schedule.

5.3 The knowledge audit process

The scope of the audit was organisation wide with particular focus on the research staff who are core to the organisation's business – that of research and teaching of a post-graduate programme. The audit took the form of interviews which were conducted and that dwelt on the various aspects of the information and knowledge activities of the organisation. The audit identified knowledge requirements of the organisation by establishing the information and knowledge assets of the organisation; establishing the information and knowledge needs of the staff, their sources of key knowledge and information, how they store and

share their acquired knowledge, with whom they network with as sources of key knowledge, and how they view themselves and their interactions in relationship to the entire organisation.

An important outcome was to reveal knowledge flows in the organisation and identify knowledge gaps. Part of the audit was to establish in what ways technology was used to support organisational objectives and the organisational culture.

Schwikkard & Du Toit (2004: 106) suggesting that while carrying out a knowledge audit, *'it is essential to establish a business case for knowledge management as well as a clear understanding of the [organisation]'s culture as part of the knowledge audit',* was seen to provide an appropriate basis for this audit.

5. 3.1 Audit sample

A total of twelve employees were interviewed, of which most of these were researchers in the various research clusters of the organisation. Amongst those interviewed were one manager, the director and the deputy director of the organisation.

5.3.2 Searching and studying the literature

The first step in the audit process was searching the literature to provide context for the audit and to understand knowledge management and knowledge and information audits in particular. Regular interaction with the project supervisor provided the professional insights and understanding that was needed. Interactions with the audit environment helped in refining the data collection instrument and to build rapport with the employees.

As has been mentioned in chapter 3, knowledge management is a new and evolving field which still needs conceptualizing and understanding. The knowledge management literature was thus carefully examined to derive a basis

for a clear understanding of the field. The literature search thus provided the foundation upon which the whole dissertation was built and especially impacted on chapters 2, 3, and 4. The literature from organisational reports, minutes, and information on the organisation's website specifically influenced how chapter two developed.

5.3.3 Organisational buy-in

A 'buy in' stage where the director of the organisation was met to request for permission to conduct the audit was important. This provided the platform to speak to staff individually and set the scene for the interviews that followed. A letter (cf. Appendix 2) of introduction from the University of Cape Town's Department of Information and Library Science was presented and the objectives of the knowledge audit explained.

Communication from the director went out to staff with information about the audit and a request to give support to the project by being available to be interviewed (cf. Appendix 3). This was followed up by an email from the researcher explaining and emphasizing that the audit constituted an important component of her MBibl research project and that data and information collected would not be used for any other purposes. This was also emphasized in the actual data collection because the researcher was aware that the kind of audits that people are familiar with such as a finance audit, were often seen as a threat. Based on the positive feedback received individual appointments were made with staff to conduct the audit interviews.

5.4 Data collection

Easterby-Smith and others (2002:18) stress that in any research project; there are no right answers in a process such as this one. Therefore the researcher was aware that there are many paths that could be followed in conducting a knowledge and information audit. Three data collection techniques were used.

While interviews were the primary method, they were supplemented with, and enhanced by observation techniques and an analysis of documentary sources, e.g. the knowledge management literature, and organisational reports. Eisenhardt (1989: 534) also suggests that when conducting case study research the investigator should combine and triangulate data collecting methods such as analysing archives, interviews, questionnaires, and observation. In their knowledge audit, Liebowitz and others (2000) further also relied on interviews and informal interaction with employees and questionnaires as their data collection instruments.

5.4.1 Validity and reliability

Validity and reliability of research is about enhancing the credibility, transferability, and dependability of the results (Marshall & Rossman, 1989: 146). According to Marshall and Rossman, this is achieved through triangulation. Triangulation is "*the act of bringing together more than one source of data to bear on a single point. This approach greatly strengthens the usefulness of the study to other settings*". (Babbie & Mouton, *2003: 310).*

In discussing reliability and validity in case study research, Yin (1994: 33) outlines what he refers to as 'tactics' to ensure the quality of any social research. These include the use of multiple sources of evidence, allow key informants to read the report and making sure that procedures for the research are well documented so that anyone can follow them in order to replicate the same study. However, he cautions that reliability and validity are much more complex in qualitative and particularly case study research designs than what normally research students would be dealing with when using other more quantitative approaches.

Marshall and Rossman (1989: 147) discuss a few controls that help to counter and avoid bias when interpreting qualitative research. They highlight these as:

- "A constant check for negative instances;

- a partner or person playing 'devils advocate' who critically questions the researchers analysis;
- checking and rechecking data and purposeful testing of possible rival hypotheses;
- devising tests to check analyses and applying the tests to the data, asking questions of the data;
- and following the guidance of previous researchers to control for data quality".

The literature stresses that qualitative research doesn't pretend to be replicable; therefore this study was handled with that mind set. The underlying basis for this is the fact that 'qualitative research avoids deliberative controlling of the research conditions and concentrates on recording the complexity of the situational contexts and interrelations as they occur' (Marshall & Rossman, 1989: 148).

According to Punch (1998: 192), qualitative research can increase the quality of the data and therefore improve the credibility and reliability of the data by:

- Carefully planning for data collection,
- ensuring that the people are approached in both an ethical and professional manner,
- appreciating training in preparation for data collection.

5.4.2 Knowledge audit interviews

Interviews formed the primary data collecting instrument for the audit. An interview schedule was developed and refined to suit the context of the study; a copy of which is appended as Appendix 1. It has been noted in chapter 4 that knowledge audits cannot be generalized because each organisation being audited is unique and therefore, there is no 'one size fit all' approach. Adjustments therefore have to be carried out on the audit procedures and the data collecting instruments to suit the particular study being conducted.

Mishley (1986: 9) defines the interview situation as:

> *".. Face-to face verbal interchange, in which one person, the interviewer, attempts to elicit information or expressions of opinion or belief from another person or persons.*
>
> *"Specialized pattern of verbal interaction-initiated from a specific purpose, and focused on some specific content area, with consequent elimination of extraneous material"*

Interviews aim at obtaining valid and reliable information (Marshall & Rossman, 1989:82) and knowledge and information audits use interviews to solicit data relating to employees' use and access to information and knowledge resources, knowledge flows and the various organisational and cultural factors that impinge on the knowledge environment of an organisation (Liebowitz & others 2000; Smith, 2005)). In an interview, the interviewer gently probes the respondent, which permits them to have a conversation in which ideas flow freely (Casley & Kumar, 1988:5).

Three forms of interviews are identified by Goulding (2005: 59) and these are defined by: differences in structure (structured or unstructured); whether group interviews or individual interviews are conducted; and the mode of the interview (face to face, telephonic interviews, electronic, etc). The strength of the interview as a data collecting technique has been summarized by Marshall and Rossman (1989:82) as:

- "[Providing a] useful way to get large amounts of data quickly.
- Allows for a wide variety of information and large number of subjects.
- Allows for immediate follow-up questions [clarification].
- Follow-up interviews easily scheduled.
- Together with observations, interviews allow the researcher to check description against fact".

While interviews have strengths, the researcher was aware of the weaknesses in the interview technique which may affect the study. Marshall and Rossman, (1989:83) outline a number of weaknesses in the interview technique as follows:

- "Must involve personal interaction.

- Co-operation from interviewee is important.
- Interviewee may be unwilling to share information that is needed by interviewer.
- Lack of expertise and familiarity with interview jargon means researcher may ask inappropriate questions or interviewee not comprehending questions properly
- Interviewer needs some good listening and interpersonal skills to ensure quality of data.
- Used alone, data distortions are likely [because of personal biases].
- Large volumes of data may make it very difficult to manage and manipulate".

In this knowledge audit, face to face individual interviews were preferred in which a fairly structured interview guide was developed and applied. Careful planning took place to ensure that the interviews would run smoothly. The interviews were tape recorded and this was further backed-up with the notes that the researcher took. This process fitted in with what Bell (1993:96) has proposed:

> *"...with experience, interviewers learn to devise shorthand systems of their own, and as long as notes can be written up immediately, or very soon after the interview ends, it is possible to produce a reasonable record of what was said in the key areas."*

The tape recordings of the interviews were later transcribed and correlated with the notes that the researcher took. Punch (1998) reminds that there are advantages associated with capturing the entire interview because note taking may have weaknesses if one has not developed the skill.

The interview schedule consisted of two sections (see appendix 1): Section one collected data on the explicit knowledge and information resources of the organisation and the value attached to these resources.

Section two was based on the implicit knowledge of the organisation. In this section the questions focused on the key pillars of knowledge management – people, culture, process, resources, and tools. It especially tried to identify

experts; collaborative relationships and networks; how knowledge and information is shared in the organisation; how individuals capture, store and share knowledge; what resources are core to support individual's work process and what tools were being used by individuals to share and generate knowledge.

5.4.3 Observation techniques

Observation techniques were used as one of the secondary techniques, taking the form of participant observations. At the time of conducting the knowledge audit, the researcher was working at the organisation as a temporary librarian. This constituted observations of how information resources were used and what kind of information resources the interviewees collected in their offices.

According to Marshall and Rossman (1989) observation as a data collecting technique *"entails the systematic description of events, behaviours, and artefacts in the social setting chosen for study"*. The technique is *"basic to qualitative research and it ensures 'access to a number of events, people, and perspectives on the social phenomenon chosen for study"* (Marshall & Rossman, 1989: 81).

In the literature two broad observation categories are described; structured and unstructured observation techniques. Gorman and Clayton (2005:103) have emphasized that structured observation *"samples a predetermined event or activity, using prearranged instrument or form into which categories the observer records whether specific activities take pace."* For this study however, unstructured observation techniques are employed. In unstructured observation, the *"observer records any behaviour or event that is relevant to the research questions being investigated"* (Gorman & Clayton, 2005:104).

The process of unstructured observation is open ended, making it suitable in exploratory studies such as this knowledge audit. While a number of advantages and disadvantages of using observation techniques have been reported in the

literature, Gorman & Clayton's (2005) advice was considered to provide a useful guideline for the researcher to follow:

> *"Careful, considered used of unstructured observation as a technique can help make best advantage of its strengths as a data collection technique and minimize, so far as possible most of the inherent limitations" (Gorman & Clayton, 2005: 105)*

5.5 Data analysis

On analysing case study evidence, Yin (1994: 102) has this to say:

> *"Analysing case study evidence is especially difficult because the strategies and techniques have not been well defined in the past"*

Analysing the large volume of tape recorded interview data posed a severe challenge. Nevertheless, the analysis started with identifying general themes that were emerging from the data. This analysis was based on Yin's (1994: 102) four analytic techniques that he proposes should be implemented in case study data analysis, viz:

- "Pattern – matching.
- Explanation- building.
- Time series analysis.
- Programme logic models

Propositions in the literature especially that which related to case studies and the three knowledge audit methodologies examined provided the orientation for the data analysis. In addition, the work of Hylton, (2002a); Henczel, (2003); Liebowitz, & others, (2000) and the literature in chapter 3 and 4 provided the basis for the data analysis process. Data was specifically analysed to discover themes and emerging issues that related to the research questions and therefore the main issues that the study was addressing.

5.6 Conclusion

This chapter describes the methodology adopted for the knowledge audit. Interviews were the primary audit data collection method. The data analysis process was founded in and grounded on the knowledge management literature. Emerging themes in the data were noted, a knowledge inventory was developed and knowledge flows in the organisation were identified. In this process, gaps, duplications and areas that need strengthening were identified.

CHAPTER SIX

ORGANISATIONAL KNOWLEDGE

"I often waste a lot of time searching for information inefficiently because of not initiating the right searches which impacts on how quickly I find pieces of information".
PLAAS employee

"I can't articulate it but I know within myself that I could use [Information technology] more efficiently. I measure this against my colleagues who have interesting ways of discovering key pieces of knowledge and information". ***PLAAS employee***

"One would wish there was a bit more interaction because we have a lot to learn from each other and also cross sharing of knowledge, methodologies and also the findings and how they apply to policy; it can be done better than it is at the moment".
PLAAS employee

6.1 Introduction

The opening quotes are a reflection of some of the issues that emerged from the knowledge audit activity. This chapter focuses on the results from the audit interviews that were conducted. The structure for this chapter is based on the main themes of the interviews and other issues that emerged from the transcripts. The chapter is structured in a way that will give meaningful insights into the current information and knowledge practices of the organisation. The transcripts provided greater understanding of the contribution of technology and organisational culture and how these influence the core engagements of the organisation - i.e. is to conduct research on land and agrarian matters, to disseminate research findings, and ensure that such findings inform policy at all levels.

The objective of the study was to explore the current information and knowledge environment of the target organisation in order to reveal where knowledge (both explicit and tacit) resides and where gaps and duplications exist. Data was primarily collected by means of interviews, supplemented with observation and the analysis of documentary sources. The analysis of the audit findings will provide a synthesis of the various knowledge management issues and an

additional outcome will be a 'road map' with proposed interventions that the organisation could follow in order to improve and augment their information and knowledge activities. The knowledge audit process is summarized in the table that follows and its purpose is to provide context for the analysis of the knowledge audit. As already mentioned, the literature on conducting knowledge audits is inadequate and therefore this table is seen to be a useful tool and a framework for conducting an audit.

Table 6. 1: Knowledge audit process summary

Stage	Information collected	Purpose
Background stage	• Literature on knowledge management, knowledge audits, and research methodology • Information about the organisation and its activities	• Provide clear understanding of the subject of Knowledge management and previous audits. • Establish the vision/ mission and objectives of target organisation • Streamline the interview process • Provide a backdrop for the roadmap that will be developed at the end of the process
Conduct face to face interviews	Explicit knowledge relating to • Information resources, key documents, location, value. Tacit knowledge relating to • People - who to turn to for information, collaboration. • Culture – how each individual perceived themselves. • Process – how information and knowledge is captured, stored and shared. • Tools – how information technology is used to support work; key resources that the organisation has.	• Assess risk to resources • Locate and describe resources • Help to analyse and identify gaps and duplications • Help to create inventory and knowledge maps. • Identify tacit knowledge, and organisational culture. • Identify the role of the resource centre • Assess role of information technology and other traditional communication tools • Provide knowledgeable input for recommendations on IT, knowledge sharing activities and improvements
Analysis stage	Based on the themes emerging from the data. • Identify knowledge gaps • Highlight the opportunities, threats and weaknesses in the current knowledge and information environment of the organisation	• Recommendations for improvements and the creation of a roadmap

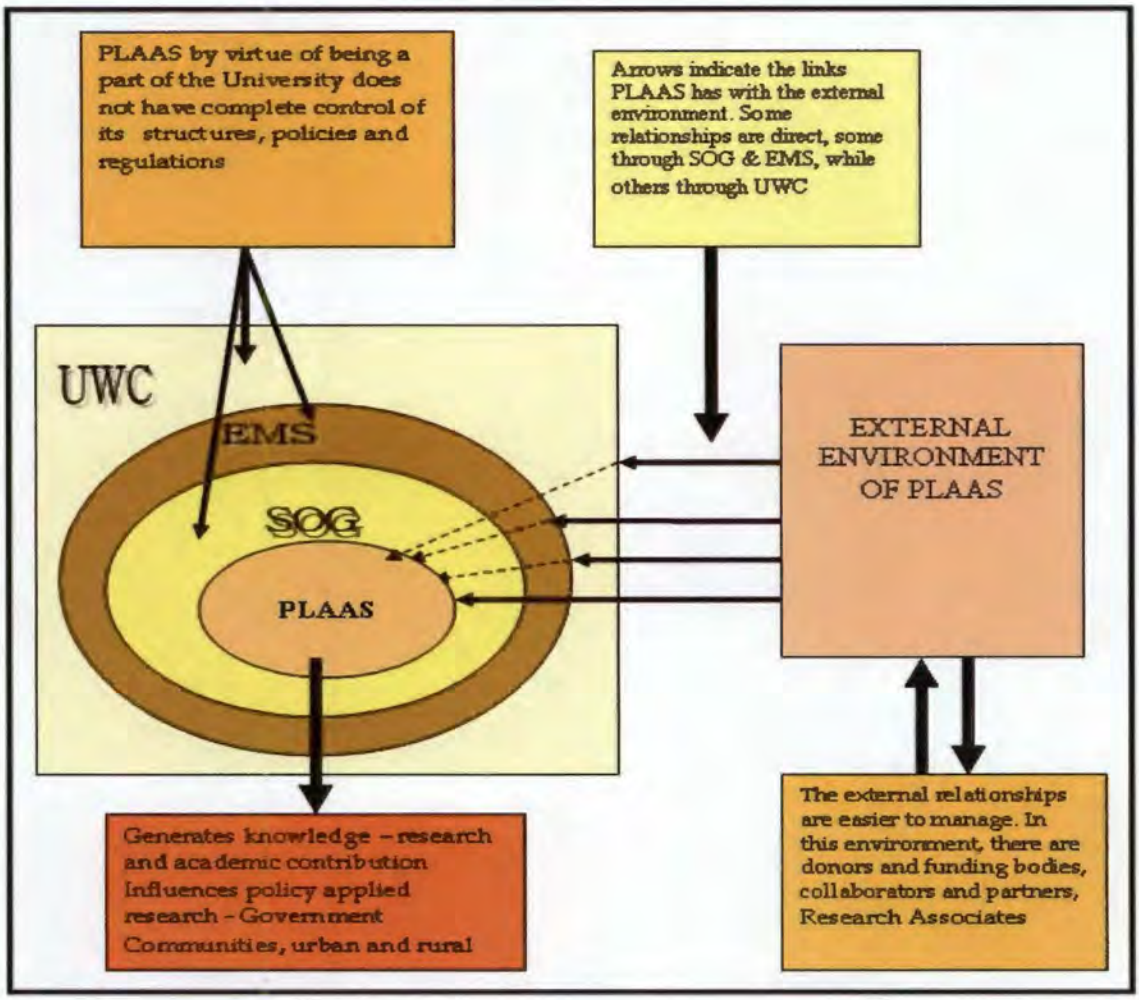
The report of the audit analysis is based on the broad categories that were contained in the interview schedule. However, while the interview schedule provided the foundation for the analysis framework (cf. Appendix A), other issues also emerged as recurring themes in the interviews and these were further used to enhance the original framework. This audit analysis thus focuses on the following main issues: organisational structure, organisational culture, organisational knowledge and information assets, knowledge sharing, organisational memory, organisational technology infrastructure, resource centre and how the individuals perceived themselves in relation to the rest of the organisation.

6.2 Organisational structure

The organisation is structured into key business areas which are: Research, Finance and Administration. Finance and administration play a supporting role to the core area of research. The research activity is predisposed towards informing policy and that means that it has a strong element of applied research. Conducting more theoretical or basic research is however also an important function and here, some of the researchers are regarded as key players in their specific research areas.

The research domain is further divided into four clusters – Land, Fisheries, Natural Resources and Poverty while the Water component cuts across all clusters. PLAAS functions within the broader framework of the University of the Western Cape. This broad framework affects the decisions and some of the functions of the organisation. Figure 6.1 below illustrates this framework and how it influences PLAAS as an organisation.

Figure 6. 1: Organisational environment: Links and relationships



It can be seen from figure 6.1 that PLAAS as an organisation functions under the EMS (Economics and Management Science) faculty of the University and within this faculty is the School of Government (SOG) of which PLAAS is a Unit. The external environment entails the donors, funding bodies, partners, research associates, government departments and collaborative relationships. This environment is easily managed because PLAAS relates to them as a unit. However, some of those relationships and contacts come through the University or the EMS faculty. The latter are very difficult to manage because they have to subscribe to the rules and interests of the University. In other words, PLAAS by virtue of being part of the University community has to submit to the rules and regulations that govern the University. It was observed that this environment plays a role in shaping the culture of the organisation because it partly shaped

the organisational structure of PLAAS. This organisational structure, while being described as flat in some aspects, is partly hierarchical as is the University's general structure.

6.3 Organisational culture

Organisational culture plays an important role in shaping the general practices, the values and the norms within an organisation. The influence that culture has occurs at different levels in an organisation and Debowski (2006: 83-84) particularly believes that "organisational cultures strongly influence retention and productivity" as well as how "open individuals are to new concepts and possibilities".

Through the interviews, issues relating to the culture of the organisation emerged. The interviews revealed that there were aspects of the organisation that created broken links within the organisation. One particular aspect that came across strongly was that the organisation had a historical problem relating to how the individual research clusters can be better integrated to function more closely together.

One of the reasons for this 'silo' effect can be because the research clusters developed independently and thus differently over time. It is thus possible that the way the research clusters developed may have a bearing on what importance is placed on each cluster. Closely linked to the 'culture factor' is the impact of the individual staff members. The staff profiles reveal that most of the staff had attained PhDs in different fields and they are known to be experts in their own right. This suggests that there is a considerable amount of key knowledge residing within individuals.

It is thus clear that the employees, especially the research staff, are a key knowledge asset for the organisation. In the next section a more detailed discussion will be provided of these and other knowledge assets of PLAAS.

6.4 Organisational knowledge and information assets

The knowledge audit identified key knowledge assets of the organisation. In no special conceptual order (other than alphabetical) these assets include:

- Advertisements.
- Articles and books authored.
- Awards and commendations the organisation has received.
- Best practices – in project reports.
- Cooperative agreements.
- External news releases.
- Internal databases (Contacts database).
- IT hardware and software.
- Organisation's website.
- Partnerships and collaborative relationships.
- Project descriptions.
- Project success stories.
- Radio and TV interviews /presentations.
- Regular Publications.
- Research reports.
- Resource centre (Library).
- Resumes.
- Staff competencies.
- Winning proposals.

The organisation has many knowledge assets that may not be very obvious and in fact, one of the main thrusts of knowledge management is the identification of tacit resources that should be leveraged to give an organisation advantage.
For example the research staff have considerable expertise as well as advanced academic qualifications, and they have made considerable advocacy and representational contributions to many communities that have been marginalised in some way. These experts have been sources of empirical evidence in law

courts and have also presented their findings which have eventually informed policy relating to land and agrarian matters in South Africa.

Completed project reports and findings are further key assets. These assets have however not been stored in any database resulting in significant loss with regard to the organisational memory. The organisation's website is another asset that provides a means through which anyone seeking information on land issues can access such information without a cost. However, interviewees suggested that there is need for considerable effort to enhance the value of the website by providing links to primary research publications that relate to land issues. One interviewee brought to the fore the fact that there is no comprehensive information source for land- related matters anywhere in South Africa. PLAAS should take the initiative and create such an integrated database and unify all land related information.

6.5 Organisational memory

Organisational memory refers to an organisation's knowledge that represents prior experiences and which is saved and made accessible to users at a later stage. The value of creating a database wherein the organisational memory is stored is that it creates an important knowledge resource that can assist with future decision making in the organisation. Such a stored memory includes stored records such as corporate manuals, databases and filing systems of the organisation. Such a 'memory' should be stored in some form of database which is accessible to all employees and there must be policy in place to ensure that it is up to date. It was ascertained during the interviews that there is an urgent need to create such a stored memory for the organisation.

For example, various interviewees suggested that:

> *"If I am to leave the organisation, I would leave with a wealth of knowledge but if the organisation asks, I will be willing to leave copies of all my work here at PLAAS".*

"We all collect private collections and when we leave, we leave with all the key pieces of knowledge. The organisation would benefit if there was a database for such knowledge"

"A database of PLAAS content would be an excellent idea... people can then be directed to the website as a starting point"

The organisation's knowledge resources are dispersed throughout the organisation and they are generally not readily accessible other than to the individuals who created them. As a consequence, there is a lot of duplication and time wasted in seeking information that is already within the organisation. One interviewee lamented that often when there is an urgent need for a key piece of knowledge one cannot ascertain where it is.

In another interview, the issue of organisational memory was discussed as being a very difficult programme to initiate. The specific difficulty that was raised related to the dedicated time that is required to keep the system functioning. A further concern that was expressed referred to the many disadvantages of creating overly structured systems. Nonetheless, most of the interviewees were in support of a kind of database where key pieces of information and knowledge could be stored and possibly linked to the website to allow easy access.

Another interviewee suggested that they were willing to give up their key documents that relate to their work for the benefit of the organisation. Their view is summarized as follows:

"There is no place in South Africa that has good holdings that can be accessed in one place on land- related research. A database of PLAAS content would be an excellent idea to fill in this gap and enhance the organisational website"

A database with PLAAS content would provide a rich resource especially because PLAAS is a highly rated organisation in the field of land matters not only in South Africa but even globally. To support this, one interviewee had this to say:

"Increasingly there are academics, students and people doing related work, if we had a system in place, we would refer them to the website as a starting point for information"

The PLAAS website refers to important policy engagement activities that the organisation conducts. For example, the website indicates that in 1998 one of the researchers participated in the land restitution programme where he "co-ordinated a Ministerial Review of the Restitution Programme, authoring the influential final report of the review" (http://www.plaas.org.za/policyengagement). However, this report cannot be readily accessed. This highlights problems relating to access to the organisational memory and strongly indicates the need for a centralized database. This would considerably enhance the work and standing of the organisation.

The other issue that was raised in relation to the organisational memory was that the organisation has experienced a high staff turn over in the recent past. When individuals leave they take all their experience, expertise and knowledge that they have acquired while working for PLAAS with them. Because there is no system in place that captures both the explicit and tacit experiences of individuals, the organisation has to "re-invent the wheel" each time a new recruit has to be oriented to the work processes of the organisation.

The organisation is however currently setting in place a system where performance appraisals are used to obtain feed back from staff on what works, what their experiences at the organisation have been and their recommendations for the way forward. In this way, PLAAS is beginning to gather valuable staff input. The annual report as well as minutes of meetings is the primary way that the organisation currently records its organisational memory. In fact minutes are used to track and see that the organisation is functioning well and that individuals with specific tasks are carrying them out.

The organisation engages in many activities from which knowledge emerges as an output or product. Because it is a knowledge intensive environment where key knowledge is needed to generate new knowledge and insights, care needs to be taken that the research staff have their information needs met. The figure below explains the activities of the organisation that are knowledge intensive.

Figure 6. 2: Current knowledge activities

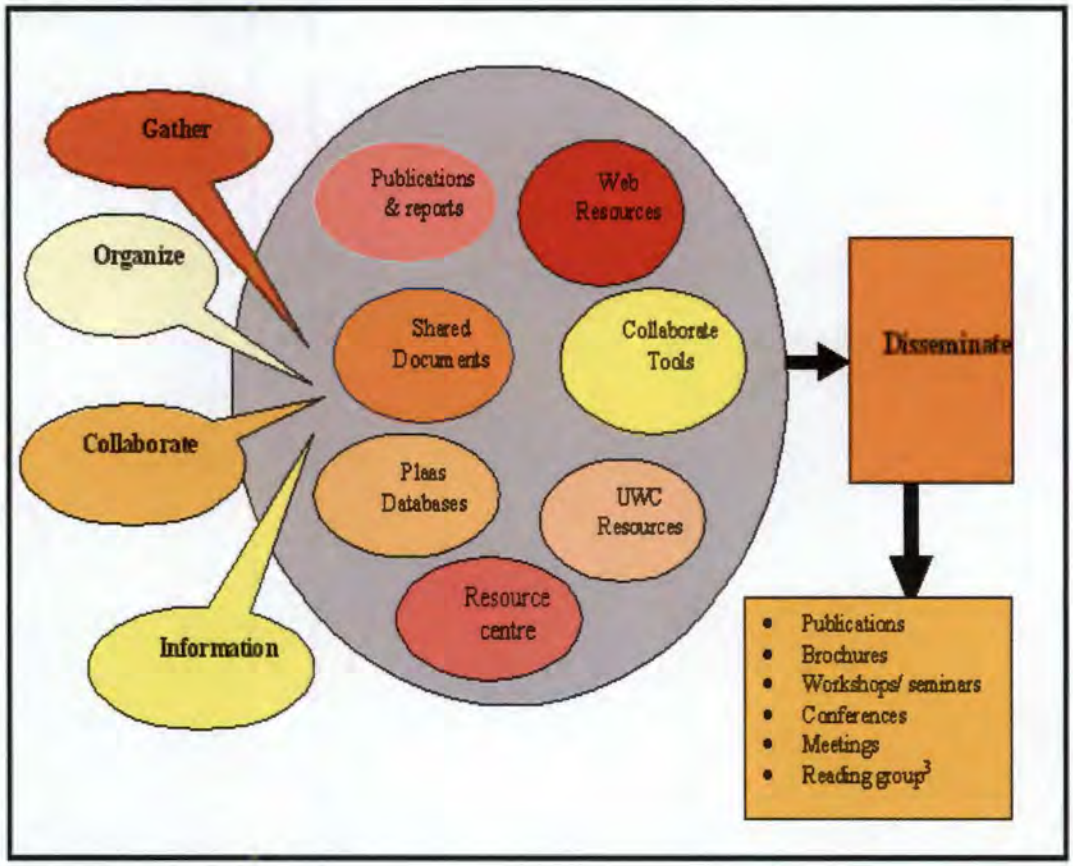


Figure 6.2 above shows the means by which the organisation receives new information and knowledge and the various other sources of knowledge within the organisation. Internally researchers interact with resources of knowledge and in the process they generate new knowledge and in turn disseminate information by means of the seven mediums specified under the disseminate box. Other knowledge sharing activities are discussed under the next subheading.

6.6 Knowledge sharing activities

There was a general feeling that even though the organisation has systems in place to enhance knowledge sharing, these could be improved upon. Currently knowledge sharing takes place by means of informal interactions between

[3] The reading group is an internal medium where the researchers discuss and share on topics of interest. It is a learning activity and a knowledge sharing experience

individuals, seminars, organized workshops, conferences, regular PLAAS research reports, the teaching programmes and through the reading group where researchers discuss a specific issue or article once a month. The challenge to the current system was however the sharing between individuals. One interviewee captured this when he said that:

> *"One would wish there was a bit more interaction because we have a lot to learn from each other... As a group of researchers we could do better than what we are doing in terms of working and sharing knowledge, methodologies and also findings particularly where it applies to policy"*

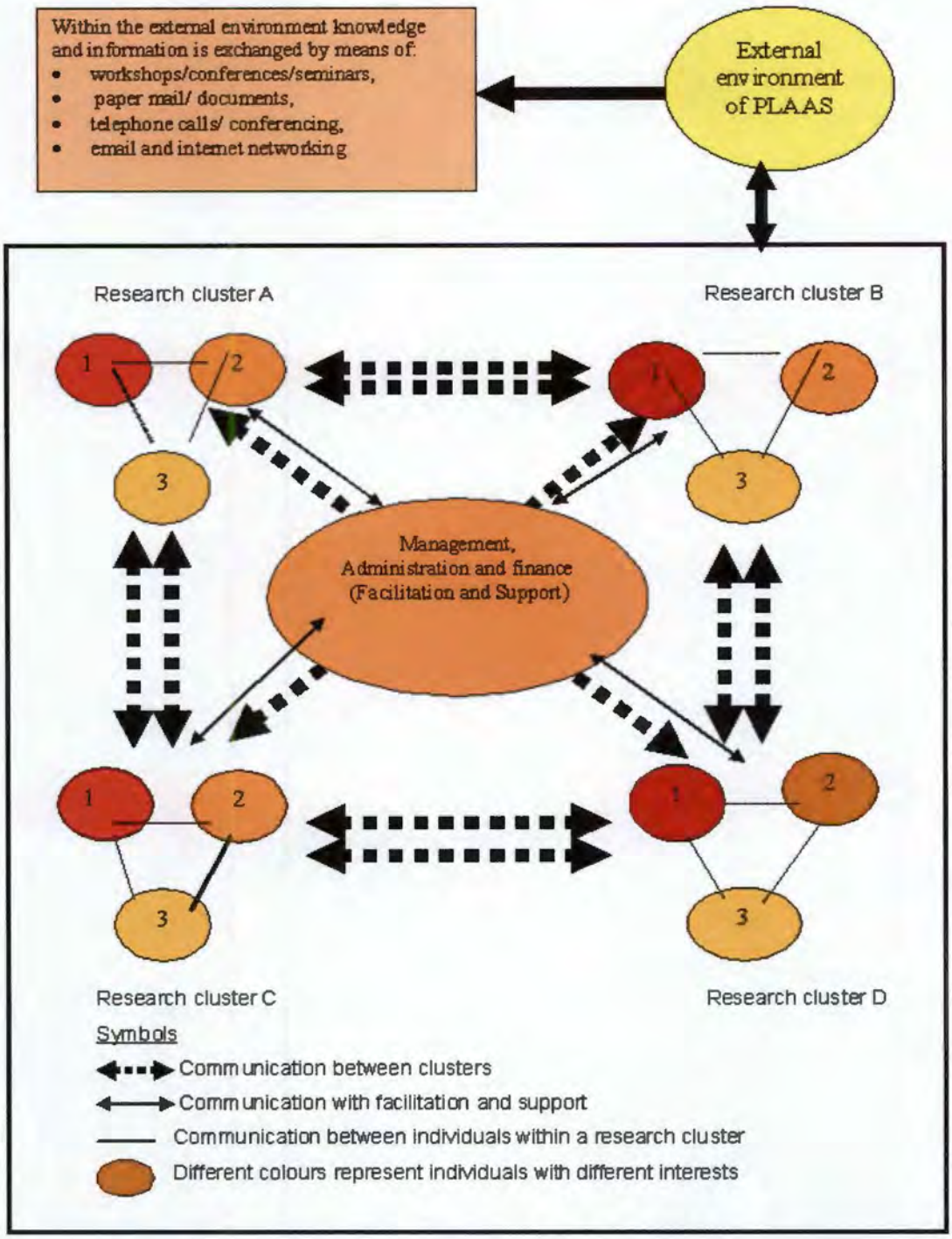
These knowledge sharing activities however focus more on imparting what individuals know and have learnt as opposed to learning from each other. Knowledge sharing within the organisation was related to the way knowledge flows within the organisation and is linked to how individuals perceived themselves and their interactions within the organisation.

On internal knowledge sharing, one interviewee had this to say:

> *"We share informally. Also we have limited knowledge of what people are interested in at a particular time. It is all based on vague ideas on what others need".*

Figure 6.3 below provides a graphical outline of how knowledge and information flows in the organisation. All individuals that are engaged in research interact mostly within their research clusters. Outside these clusters the communication is not frequent as can be seen by the thickness of the lines or the broken lines. According to the interviewees, the system of interaction is partly derived from the history of the organisation and also has partly to do with the nature of their research. Research is based on individual proposals and focuses on specific research issues that may not cut across divisions in the organisation.

Figure 6. 3: Information and knowledge flow in the organisation



In figure 6.3 above, the different line thicknesses suggests that there is variation in the communication between individuals within a cluster, other research clusters, and with the management and administration.

The frequent and strong communication is often determined by the work that individuals could be doing at the time, and how much they need to constantly consult with colleagues. Communication between for example research cluster A and D and research cluster C and B is not very different from the communication between research cluster A and C, and research cluster B and D. There are strong, broken or even weak communication activities and this depends on the work individuals could be doing at the time and the consequent need to interact between clusters.

Within PLAAS information and knowledge is exchanged by means of

- Information and other informal interactions.
- Internal seminars/work groups.
- Monthly meetings (home day).
- Email communication.
- Publications and documents.
- Informal coffee breaks.
- Social networks within the organisation.

The above forums are used to facilitate information exchange and knowledge sharing, both internally and externally. Individual research staff are involved in many knowledge generating projects and they could cross share in order to mentor and learn from each other. This aspect is captured in the following comment of a respondent:

> *"The wealth of insights and information generated by the research that is conducted and areas covered is so extensive that there is too much to squeeze everything into a document and a lot may not be captured. This is where the seminar structure plays a vital role so that individuals can share and state opinions with peers"*

One key aspect that came up during the interviews was that the organisation thrives on informal networks that individuals have developed as a result of their research. These networks are not limited to PLAAS and even extend beyond the organisation. Some links are with other experts in the land sector.

One interviewee indicated that they had many individuals they consult with on a regular basis depending on the need at the time.

Some networks provided sources of information that is not available from the University's online resources. Although these networks are scattered globally, most operate in the more developed countries. Through these informal networks, a considerable amount of information is exchanged and knowledge shared and this is very beneficial for their research activities. It was, however very clear that internally there were obvious gaps relating to individuals working in isolation. One respondent, for example, stated that in as much as they were all part of the PLAAS, individuals often worked as if they belong to different organisations.

The interview with one of the managers further highlighted the defects that exist in the home day programme. This day is set apart each month for staff members to interact at a more relaxed informal level, exchange information, and engage in team building. It was pointed out that the common goal of the home day should be revised continuously to provide structure and direction so as to make the day more meaningful with regard to information exchange. For example, it was mentioned that staff motivation to attend the home day was declining at the time of the study and that there were many challenges with regard bridging the gap between research staff and administration staff.

The knowledge audit further highlighted a number of disconnections within and between the administration area and the research area. For example one interviewee in the administration section had this to say:

> *'It would be wonderful to know the content of the work of PLAAS then we would be able to give better and more knowledgeable support'*

In fact a suggestion was made that would help in bridging the disconnections:

> *'Knowing the content of PLAAS should be part of the induction process. But we get tit bits all the time about important matters. I wish it would be a 'whole'*

In as much as technology and especially the email system play a role to help bridge the disconnections, it would appear that far more needs to be done to enhance communication on core issues of the organisation. Items relating to the technology infrastructure are presented in the next section.

6.7 Organisational technology infrastructure

The term organisational technology infrastructure refers to the information technology systems that support the core business of the organisation through collaborative technology, communication system and storing of the collective memory of the organisation. Providing such an infrastructure would enable a better and more integrated organisational system. Information technology provides the platform and tools that can reduce duplication of effort, increase the ability of individuals to share and communicate through networking by means of, for example, email systems, at a much reduced cost.

The interviews revealed that PLAAS is well endowed with an appropriate technology infrastructure that has the potential to facilitate the effective sharing and disseminating of information and knowledge that the organisation generates. The sharing is at two levels; within the organisation and to the broader community who are the clients of PLAAS. The interviews and the observations clearly indicated that the organisation has an infrastructure that, if fully utilised, can support the core business of the organisation. For example, the organisation has full access to and use of the internet and email services of the University. Besides these systems, the staff can access a range of databases such as EBSCO Host (Search platform for online research databases in institutions world wide), JSTOR (Scholarly journal archive database), and many others that offer full text research articles.

Despite the good technology infrastructure, a number of respondents identified many problems relating to their interaction with the current system. The most significant of these were the respondent's assessment of their expertise in finding useful pieces of information. The following quotations highlight these aspects:

> *"I still think that the resource centre could become more helpful if we can get some kind of specialized databases because most of the time our work is in the field and we cannot access the library"*
>
> *"The way I gather and store information is a bit messy. There are gaps although I create files and folders to keep things in order"*

"I think I lack some skills in doing proper searches for information... basically I Google but I know there are many more ways to initiate the right searches"

The downside to sharing the University's system is that the internet services are at times slow and individuals do not have sufficient space to save their work on the general system. The other problems relate to the University's system often experiencing down-time and the rigid rules that governs the University's technology system was seen by some interviewees as an inhibiting factor.

6.8 Resource centre

The resource centre houses an excellent collection of books, journals and reports relating to land and agrarian matters. The collection is current and a concerted effort is made to keep it up to date. Staff generally expressed the view that the resource centre is a core facility that needs nurturing. The usage however, appeared to vary and depended on the individual researchers. Some used it extensively while others didn't have the time to go into the resource centre.

There was clearly uncertainty as to how the resource centre functions and whether researchers can request help from the person running the centre. This aspect can be related to the history of the resource centre and the fact that there is not a permanent person to run the service. It became evident that the resource centre's role should be clearly defined with explicit indications as to what its functions are, what services to expect, and how the budgeting and acquisition of materials takes place.

Many interviewees further found the resource centre cumbersome to use. The individual interviews clearly brought to the surface that the resource centre would serve a more useful purpose if there was a permanent person to run the services who would be able to support the information needs of the researchers.

6.9 Individual perception of interactions within the organisation

The individual perception focuses on how each individual employee perceived themselves within the organisation. This individual perception links up with the organisational culture and the overall objectives and goals of the organisation. Individuals used different metaphors such as 'tuba', 'amoeba' 'octopus' to describe themselves. Quotations from the interviews capture the current individual perceptions:

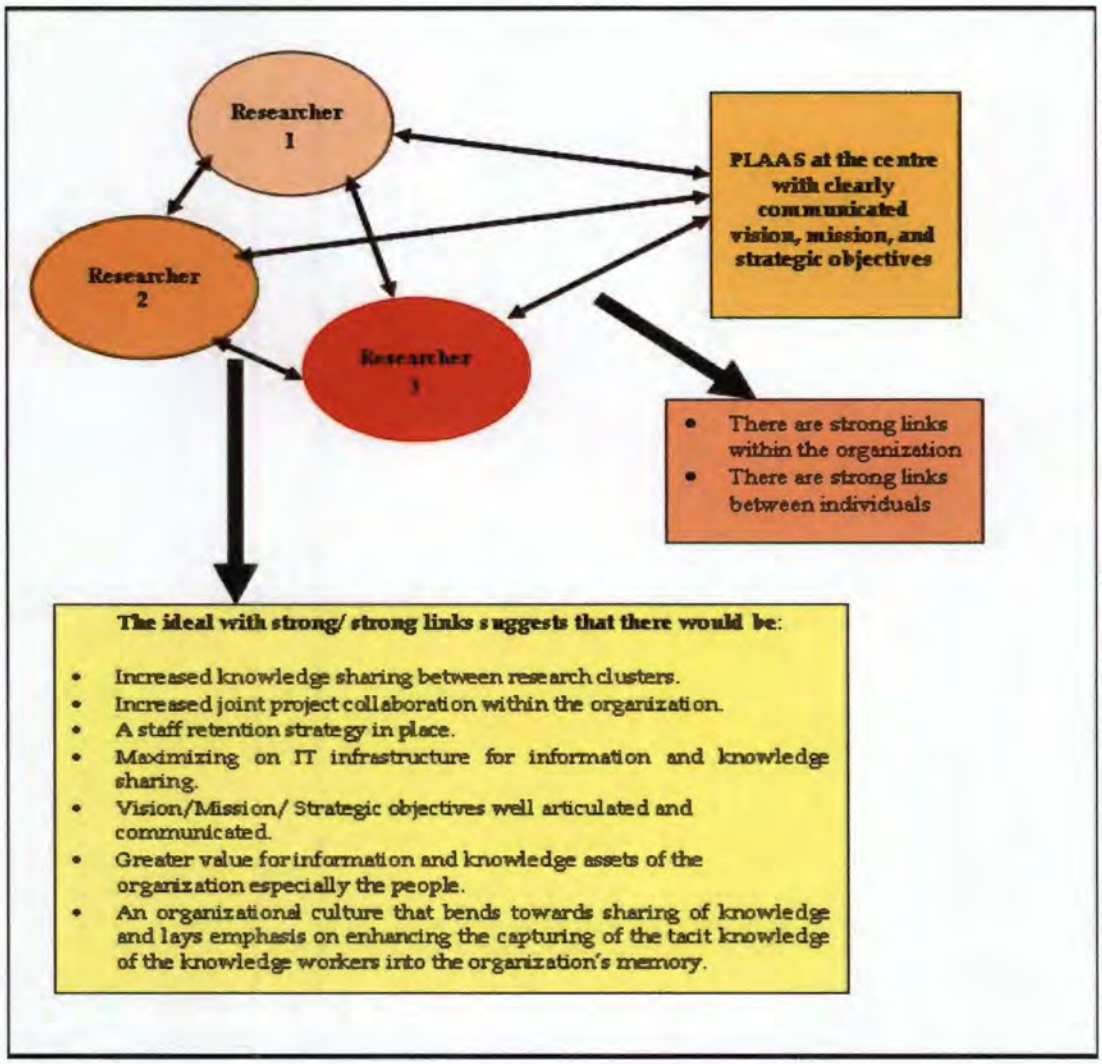
> *"We work as isolated clusters. Within clusters, we relate well and some times share but outside of that we are like in different organisations"*
>
> *"Each individual focuses on their area of interest and we use clusters to bounce off ideas. We call it clusters but we actually operate quite individually"*
>
> *"One would wish there was more interaction because we have a lot to learn from each other and also cross share knowledge, methodologies and findings"*

Two models emerged from the individual descriptions. The strong and strong links model is the ideal that the organisation is working towards. In this model, all the links between individuals are strong. The second model is where the links are strong and weak. This seems to be the current position and thus description of the links within the organisation. See below for a graphic description of the two models.

Model 6.1: Strong links

In the ideal situation as depicted in model 6.1 below, the mission, vision and objectives are well communicated and embedded in the work processes of the organisation. In this strong model, the links between the different research clusters are strong. This implies that there is regular communication and there is cross sharing of knowledge between clusters. This model is what the organisation seems to be striving for and individuals expressed the same sentiment.

Model 6. 1: Strong /Strong links



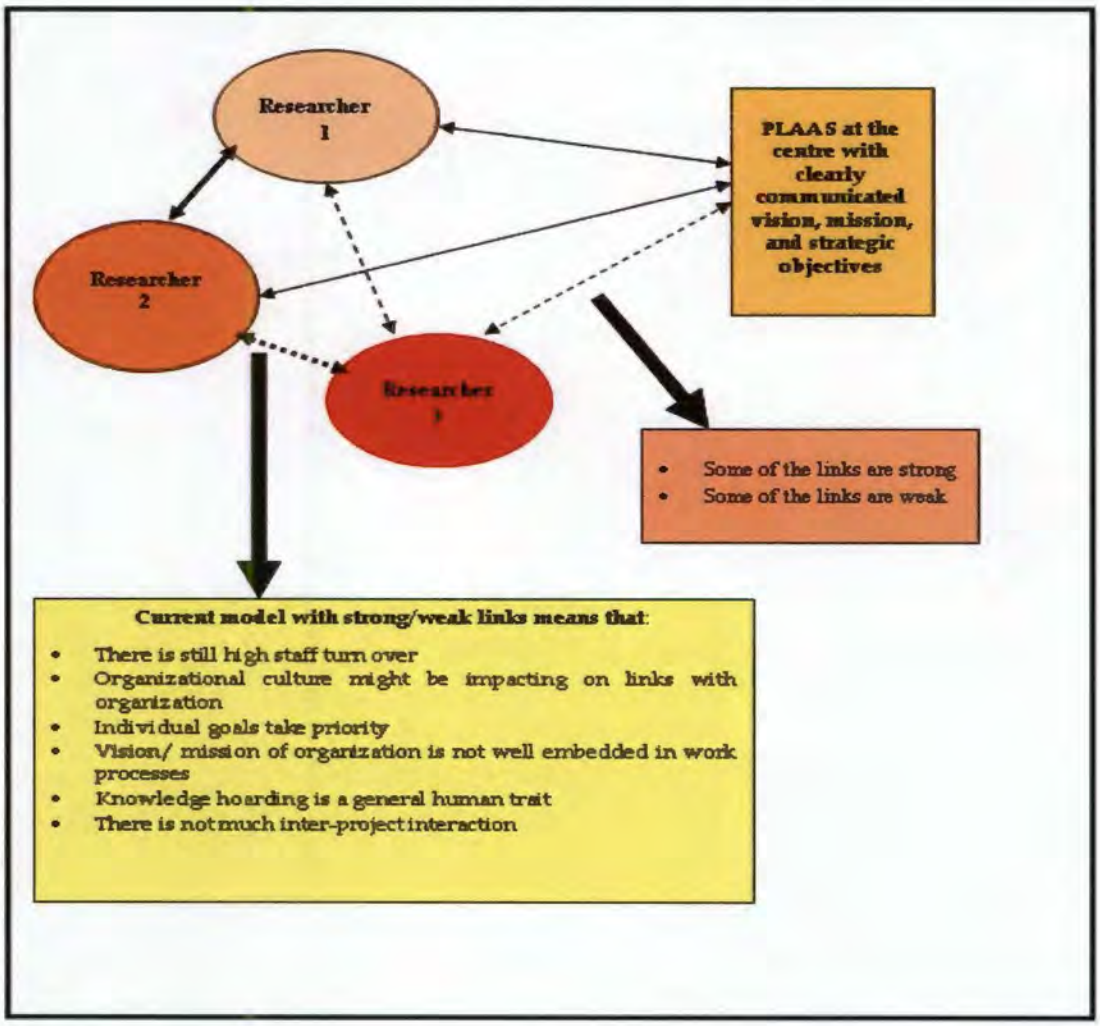
Model 6.2: Strong/ weak links

It is suggested that the strong/weak scenario as outlined in model 6.2 below evolved from certain factors in the current system that are impeding the creation of an ideal situation as depicted in the strong/strong model above (see model 6.1). The audit highlighted the following inhibiting factors:

- An organisational culture where the vision and mission are not well articulated and where individuals pursue their own goals.
- The lack of a clear explication of the value that is placed on knowledge may affect the value placed on the people who are the knowledge workers and may also affect the sharing of knowledge.

- The lack of leadership in shaping the culture of the organisation especially creating innovative forums for sharing knowledge.

Model 6. 2: Strong/weak links



6.10 Other emerging issues and recommendations

Other issues were raised and proposals were made by the interviewees of activities that they deemed would help to enhance the current knowledge and information environment of PLAAS. These included:

- Revisiting the organisation's goals and objectives in order to remind the employees to incorporate them into the day to day core activities.

- A few of the interviewees suggested that having a corporate intranet would enhance the sharing of knowledge and information as well as helping in developing a database for the organisation's memory. This was also seen as a system that would help to overcome the short comings of storage space on the University's information technology platform.
- There was the suggestion that in house technology training would help to close the gap that some of the interviewees were experiencing in searching for information and handling their own key information files.
- Interviewees pointed a number of short falls in the structure and the definitions of research projects. For example one interviewee suggested that many of the 'disconnections' in the way research clusters functioned had strong links to how projects develop.

6.11. Conclusion

In conclusion, the knowledge audit highlighted the current knowledge and information environment of the organisation. The results presented are based on the analysis of the audit interviews. Key areas that emerged suggest issues that PLAAS needs to tackle in order to enhance and improve the organisation in general. Many issues were closely linked to the organisational culture, the technology and the nature of the work clusters.

CHAPTER SEVEN

CONCLUSION AND ROADMAP

Providing work environments that are conducive to the generation, exchange, and respect of knowledge and ideas will pay dividends in morale, staff retention, and financial revenue. Pleasant physical facilities; progressive human asset policies; an 'open door' management culture; articulated, achievable incentive programs; and a culture of genuine partnership and collaboration all participate in inspiring and harnessing the best in and from knowledge employees" (Frey,2002:177).

7.1 Introduction

This chapter is based on the findings in chapter six and further grounded in the knowledge management literature. The intention is to draw conclusions from the findings and to recommend a 'road map' that the organisation can adopt in order to address the problems and gaps identified in the knowledge audit. Throughout the knowledge audit, individual interviewees made useful suggestions that could enhance the current knowledge and information system. These have also been incorporated in the conclusions and the recommendations.

This project set out to inventory the current knowledge assets of the organisation, map knowledge and information flows of the organisation and in the process identify the gaps in the current knowledge and information environment. The key emerging issues are discussed within the general framework that was outlined in the previous chapter (six) and they relate to organisational structure; organisational culture; organisational knowledge and information assets; organisational memory; organisational knowledge and information sharing activities; organisational memory; organisational technology infrastructure; the resource centre; and individual perception of knowledge exchange within the organisation.

The discussion shall identify the areas of strength and weakness, as well as the areas of opportunities that can be exploited and the threats to the organisation. These shall be tabulated in 7.3 as a PLAAS SWOT (Strength, Weaknesses,

Opportunities and Threats) analysis summary. Other generalized items that came out of the interviews are also incorporated into the discussion. Thereafter, based on the outcomes of the discussion, recommendations are made in the form of a 'road map' for knowledge management implementation.

7.2. Summary of findings and recommendations

This section provides a summary of the findings together with recommendations for future action and is based on the main themes and issues that emerged form the study.

7.2.1 Organisational structure

In order for the organisation to move towards a knowledge 'aware' organisation, the strategic goals and objectives of the organisation need to be understood and incorporated into a knowledge and information strategy for PLAAS. Strategic goals are statements or declarations of what an organisation wishes to achieve over a period of time and they generally reflect the vision, mission as well as the environment of the organisation. Having a knowledge and information strategy that is integrated with, and aligned to the organisation's overall strategy ensures that knowledge management initiatives feed into and strengthen organisational objectives.

The interviewees highlighted a number of shortcomings in the way that the leadership articulates and communicates the strategic goals and objectives of the organisation to the employees. It is suggested that the leadership should regularly discuss and communicate the strategic objectives of the organisation with all the employees. This would suggest to employees that the leadership was committed to seeing that the organisation moves forward to fulfil its vision and mission. This would further encourage and motivate employees to develop their individual work plans to fit in with the overall organisational aims, and objectives.

It was evident from the reports and observations that the overall university structure influences a number of the key functions of PLAAS. For example the organisation cannot implement any major information technology infrastructure without the support of the University. Many of the interviewees stated that if the PLAAS structure was completely independent of the University's structure, there would be more flexibility to innovate and implement knowledge and information projects such as a new technology platform.

7.2.2 Organisational culture

A culture where trust is built and which fosters team work and collaboration is more likely to succeed with knowledge management initiatives. Hamm (2006:122) has further suggested that such a 'healthy' culture is "a key factor that will help an organisation to win in the market place". Likewise, a leadership style that is flexible to try new things, facilitate learning and provide room for building trust is more likely to underpin the success of knowledge management and move the organisation to greater success.

It was evident from the interviews that PLAAS needs to change certain cultural aspects that have inhibited the fostering of knowledge and information activities in the organisation. Developing a 'healthy' culture in which individuals are made to realize that they are valuable members of a team, it is suggested, will contribute immensely to the success of the organisation.

Culture is displayed in the way organisations conduct their day to day business and a number of these aspects were identified during the interviews. For example it was demonstrated by the way the different research clusters communicated with each other and the comments made that the organisation has a historical problem of how individual work clusters functioned. Even though they worked in clusters, individuals seemed to work very independently. One interviewee even suggested that they worked as though each one was from a different organisation.

Organisational culture clearly played an important role in influencing how individuals perceive themselves. The PLAAS leadership thus has a major task to help in defining and communicating the organisational vision and mission and also in making their expectations for the organisation clear so that they can develop a culture that is meaningful and which enhances the objectives of the organisation. It is proposed that a culture such as suggested by Hamm (2006:123) below could serve as a model and challenge for the PLAAS leadership to enhance the current culture and thus also the knowledge and information activities of PLAAS.

> *"In companies with healthy cultures, employees aren't kept in the dark; rather they are supported in the belief that they are part of an exciting future. They come to work with a fire inside them, a result of clearly stated leadership and business practices that everyone explicitly understands. Every one in the company [organisation] knows how to individually contribute to its future."*

7.2.3 Organisational information and knowledge assets

The study clearly indicated that PLAAS is endowed with many knowledge related assets that if properly leveraged could add considerable advantage to the operation of the organisation. The organisation has, for example, kept the reports of key research projects that have been completed in the past. A major problem, however, relating to these resources is that because they are scattered all over the organisation and unorganised they cannot be traced when required. If they were stored in a well structured database that contains the entire organisational memory any one requiring access to such information would be able to find and use them.

The interviews further suggested that the employees, especially the research staff, were PLAAS' most important asset. Many of them are regarded as experts in their fields and have held responsible positions in different land related sectors within South Africa; some have been tasked with consultancies of an international nature; and many have been key authority speakers in forums relating to land, poverty, natural resources and water. It however, clearly emerged that the knowledge of individuals is not being put to full advantage. This

was basically because there was no system in place to capture individual expertise and create a well structured organisational memory. These factors are compounded by the difficulty of capturing tacit knowledge. This resulted in individuals often not being aware of key knowledge held by other individuals. This in turn meant that a lot of time was wasted trying to find information elsewhere and also effort duplicated in 're-inventing the wheel'. The high staff turnover further meant that the amassed experience and 'know how' of individuals was usually lost when they left the organisation.

Coupled with the above, a recurring theme that emerged was that the staff generally had gaps in their IT (information technology) skills when it came to searching for the right kind of information and knowledge that they needed. In as much as PLAAS has access to the technology infrastructure of the University (e.g. email and internet access), the organisation needs to fill these gaps internally with a more systematic and efficient way of capitalizing on their knowledge and information assets.

7.2.4 Organisational memory

The absence of an integrated and well structured repository that contains PLAAS' organisational memory was identified as a significant problem that severely hampered the knowledge and information activities of the organisation. This aspect and the fact that PLAAS' knowledge resources are dispersed throughout the organisation meant that key information resources relating to the organisations' experiences are generally lost to its employees. The organisation has completed many major projects (cf. Chapter 2) but if access is required to these reports or any information relating to these projects, this cannot be provided as there is no consolidated repository. The high staff turn over has further resulted in many employees' amassed experiences and skills not being captured in an organisational memory system.

It further emerged that a number of knowledge needs of the PLAAS employees were not being met because access was not provided to important information

relating to land and agrarian policy issues and new developments in the land sector in South Africa. It was generally felt that the only way to resolve these issues would be by developing an organisational memory system in the form of a corporate portal. Such a portal could have the functionality to track knowledge and information on specific subjects and provide the links to the various knowledge resources of interest.

7.2.5 Organisational knowledge sharing activities

The results of the knowledge audit indicated that the nature and definition of research projects determined the way researchers interacted with each other and thus their overall communication behaviour. Although PLAAS has created a number of forums where knowledge sharing takes place - e.g. by means of seminars, conferences, teaching programmes, home day meetings, reading groups etc. - knowledge sharing between individuals was not occurring at a satisfactory level. This was because researchers worked within specific research clusters which meant that they mostly only interacted with other individuals within their own research clusters. Knowledge sharing between individuals was further hindered by the fact that, even within research clusters, researchers focus on their own research interests and projects.

It is clear that the leadership needs to investigate ways in which inter-personal interaction can be stimulated and enhanced. An environment should be created where there is more team work and collaboration between the different researchers. It is proposed that this can be achieved if PLAAS were to:

1) Initiate a projects committee within the organisation that looks at proposals and deploys appropriate staff at the different stages.

2) Explore the possibility of joint or collaborative publication of papers and books. This could be a way of bringing together the researchers as a team to share and learn from each other. Within projects, researchers could for example explore possibilities of collaborating and sharing the writing of literature reviews for their projects and in this way a problem can be

looked at from different angles since PLAAS has many different experts in various specialized areas.

7.2.6 Organisational technology infrastructure

Technology tools provide important support for knowledge management activities because they facilitate the generation, organisation and dissemination of explicit knowledge. Tsui (2005:1) however, cautions that technology per say cannot alone provide the drive that ensures the success of knowledge management and by extension of the organisation. The balance between technology, the processes, the people and the content is the key that brings success to an organisation.

The knowledge audit revealed that although PLAAS has access to the university's technology infrastructure, the services that were provided did not satisfy all of PLAAS' knowledge and information requirements. The services that they had access to included the Internet, a range of databases, a drive on the university's server (the H-drive) where their own information could be stored, and their own website. The main problem was that these tools although adequate in their own right, did not provide a single integrated interface that is dedicated to PLAAS' unique requirements.

7.2.6.1 Intranet technology infrastructure

It is thus not surprising that a key theme that surfaced recurrently from the audit was the idea that PLAAS should develop its own intranet to serve as a technology platform that would be dedicated to their specific requirements. Many interviewees suggested that such a system would aggregate all IT related requirements and thus not only facilitate communication but also provide a system where key knowledge items could be stored and made accessible.

A number of authors (cf. Debowski, 2006: 145 and Scott, 1998:3) have advocated adopting intranet technology solutions to enhance knowledge

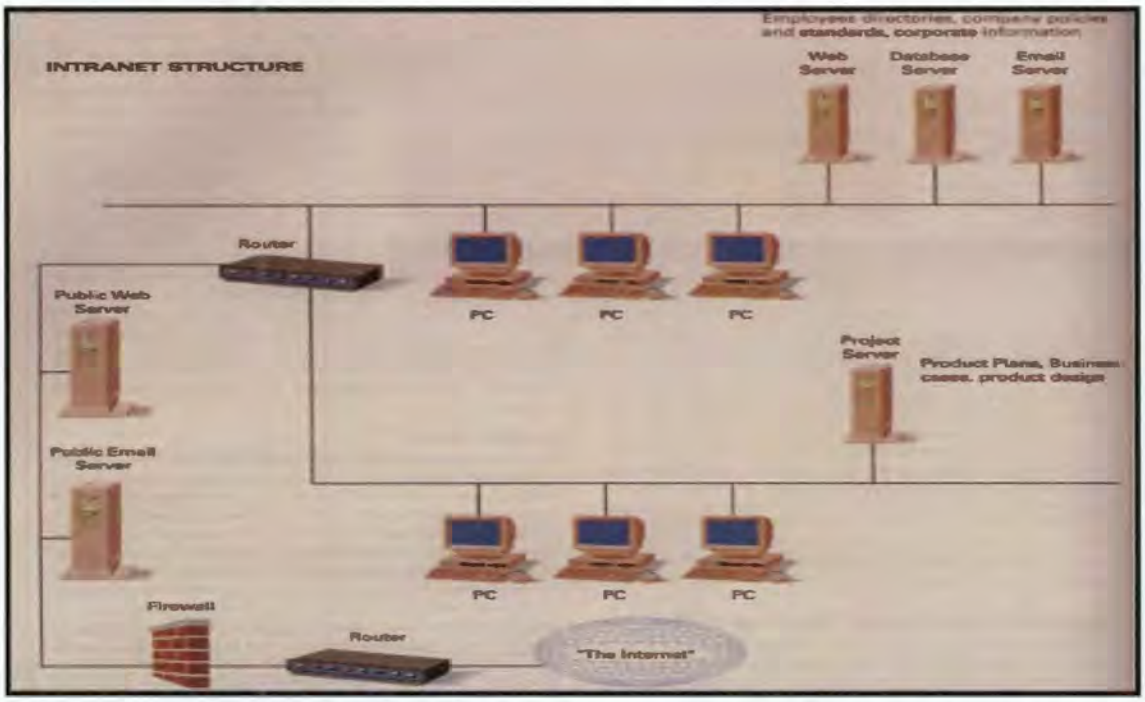
management activities. Various factors have been highlighted as providing the rationale for introducing intranet technology solutions:

- It facilitates communication across geographical and organisational functional barriers.
- It assists collaboration among sites and with suppliers and customers.
- It facilitates the handling of organisational knowledge, i.e. it creates an accessible platform for the creation, sharing and dissemination of knowledge.
- It creates a platform for discussion forums where individuals can receive feedback and share specific information.

The existing technology infrastructure of PLAAS would in fact facilitate the introduction of an intranet. For example the current technology supports a local area network (LAN), and all that is required is the purchase of an internal server. It is thus suggested in this project that the introduction of intranet technology would enhance the current knowledge activities in that it would facilitate better communication and interaction amongst the researchers, it would provide a means to store the organisational memory that can easily be accessed and updated, and discussion forums and expert directories can be created.

The argument against the introduction of intranet technology is that it needs regular and dedicated updating and also that users often resist the need to be involved in the development of the system. These drawbacks are however not insurmountable and it is the researcher's view that they can easily be overcome and that the benefits would far outweigh the disadvantages. It is thus recommended that an intranet platform similar to the one outlined in the schema proposed by Haag and others (2002: 214) and visually represented below be introduced.

Figure 7. 1: Technical infrastructure of an envisaged intranet system



Source: Haag & others (2002: 214). *Management information systems for an information age.*

The researcher would however like to signal that if such a technology solution is introduced, the organisation would have to carefully plan and budget for its implementation and maintenance. Specific aspects that should be considered are the need for

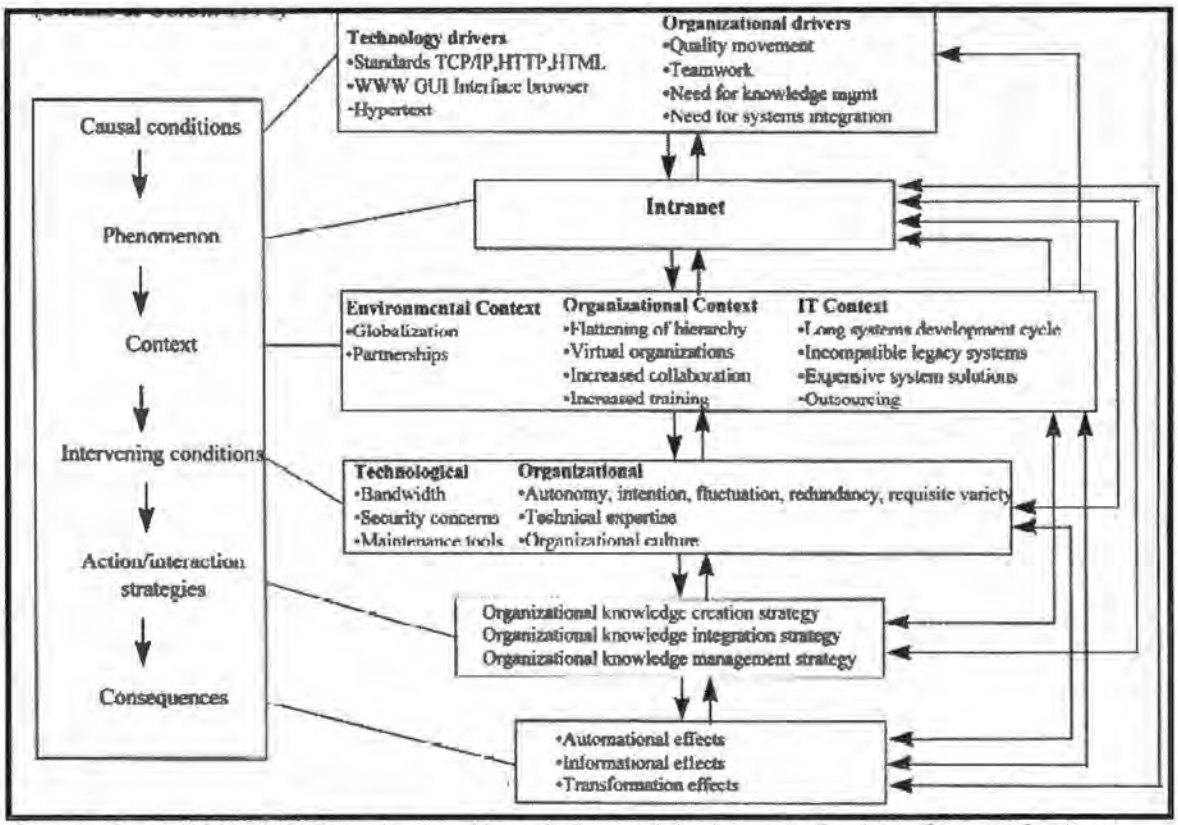
- A dedicated information technology staff member who will run and maintain the system.
- A server that will be adequate to store information sources as well as handle communication platforms such as email interaction.
- Other technical requirements such as a router and a fire wall to ensure protection from unauthorised users. The fire wall will ensure protection against intruders such as viruses and hackers of internet based systems. The router would enable interaction with the World Wide Web and provide access to the extensive array of information on World Wide Web.
- The leadership needs to instil in the users the value of using such a system to pre-empt any negative views, e.g. it being a waste of time.

- Coupled with this is also the need to train staff to effectively use the system.

The researcher has no doubt that an intranet will enhance the organisation's knowledge creation, exchange and sharing activities and that users will be enabled to more easily access the organisational memory and other information databases containing relevant information.

Scott has provided a useful model (cf. Figure 7.2 below) that clearly outlines all activities that could be incorporated into an organisation's intranet system. It is suggested that Scott's model provides a structure that can readily be adapted to suit PLAAS' specific knowledge and information activities. The model embraces most of the key aspects of an organisation's environment and demonstrates the beneficial application of intranet technology.

Figure 7. 2: A framework for organisational knowledge and the intranet



Source: Scott.(1998: 11). Organisational knowledge and the intranet. *Decision Support Systems*. 23 (1):3-17.

7.2.7 The resource centre

The PLAAS' resource centre houses an excellent collection of books, journals, reports and grey literature relating to land and agrarian matters. The collection is current and a concerted effort is being made to keep it up to date. This is evidenced by the more than adequate annual book budget and the active acquisition activities.

Information provision is beyond a doubt the core service of any resource centre or library, and the level to which information needs are being satisfied, the key indicator of its relevancy. This audit revealed that the users had different perceptions of the role that the resource centre plays in their work environment. Some of the interviewees suggested that the resource centre was not important to their work because they mainly used online resources. Others were of the view that they were not sufficiently conversant with the functions of the resource centre and the services it offered to them to use it effectively. Still others while regarding the resource centre as important only used it sporadically. Many of the staff acknowledged the importance of the resource centre, but expressed concern that it did not have a qualified person who could assist them to navigate the resource centre and support their research and other information needs.

It is thus clear that PLAAS needs to investigate how its resource centre can more effectively provide the research staff with relevant information timeously. It is suggested that this can only be effected if PLAAS were to appoint a dedicated person to manage the resource centre and the information services. In fact this aspect was mentioned frequently during the interviews as a priority area that should be incorporated in the knowledge and information strategy of the organisation. Many knowledge management practitioners warn that there is a tendency for organisations to rather invest in technology or information resources than in the people who are the all important drivers of knowledge management initiatives.

7.2.8 Individual perception of interaction within the organisation

Individuals perceived their interaction with each other, with the organisation and their role within the organisation in various ways. These perceptions were generally linked to the fulfilment of the overall organisational objectives. Individuals described themselves with different metaphors such as 'octopus', 'tuba' or 'amoeba' and from these descriptions, two models were developed as visual representation of the two types of inter-personal / organisational interaction. The ideal model (cf. model 6.1, chapter 6.9) indicates the one type of interaction where links between individuals are at all times strong. The second model (cf. model 6.2, chapter 6.9) portrays the situation where the links between individuals varied between weak and strong.

The variation in the strength of interaction, (as indicated by the two models) clearly suggests that the organisation needs to work towards arriving at a situation that more closely approximates the ideal situation (cf. model 6.1.). It is suggested that PLAAS should more rigorously integrate its mission, goals, and objectives into the daily activities of the organisation. Such integration would increase functionality and benefit the organisation in the following ways:

- enhance the activities of knowledge and information sharing;
- individuals would feel that they are part of an organisation that appreciates and values their input;
- communication between individuals and the organisation as a whole would be improved;
- a culture of shared experiences would underscore the benefits of improved work relationships and cultivate a greater team spirit.

Although the PLAAS currently engages in activities that are aimed at improving and enhancing communication and sharing of information (e.g. the home day programme, reading group and other meetings) these activities need to be strengthened (e.g. regular and open feedback). This will ensure that the management is aware of whether the programmes are achieving their objectives.

7.3 PLAAS Knowledge Management (KM) SWOT summary

In order to fully identify and pinpoint KM related gaps, a PLAAS SWOT (Strengths, Weaknesses, Opportunities, and Threats) summary was developed. The SWOT recaps and summarizes the issues raised in a more structured and simplified way. Figure 7.1 below summarizes the PLAAS SWOT analysis.

Table 7. 1 : PLAAS SWOT Summary

Strengths	Weaknesses
• General culture of sharing exists. • Staff have access to a variety of sources of information, both internal, and externally. • Organisation is small enough to facilitate efficient knowledge sharing activities. • Many of the research staff are regarded as experts in their fields. • Adequate technology infrastructure and access to internet services provided. • Well organized resource centre exists. • External links with other research bodies and donors. • Extensive networking and collaboration takes place. • Well rated postgraduate programme in land and agrarian studies offered. • Diversity in employee skills, and experiences.	• Culture of individualism hinders sharing. • Knowledge sharing is compromised by lack of enough time to share and nature of researchers' workloads. • Lack of organisational memory leads to re-inventing the wheel when searching for key documents. • No strategy in place for knowledge and information management for the organisation - hinders effective handling of the knowledge and information activities. • Lack of culture of openness to facilitate continued feedback. • Synergy between clusters hindered by nature of work clusters.
Opportunities	**Threats**
• New staff provide new sources of knowledge. • Opportunity exists to gain knowledge through integrating research clusters. • Opportunity to develop organisational memory and gain advantage in the market place. • Opportunity to develop knowledge and information strategy and associated benefits. • Different staff backgrounds and experiences opportunity for organisational transformation and cultural enhancement. • Opportunity to enhance organisational culture through shared activities such as home day and reading group.	• Opportunities for organisational change very limited. • High staff turn over - loss of key organisational knowledge. • Heavy workloads affect knowledge sharing activities. • Working individually creates 'knowledge silos'. • Nature & history of the research clusters may affect further organisational integration. • Current organisational culture has aspects that hinder better integration.

It is suggested that the PLAAS SWOT analysis could serve as a guiding framework that would facilitate the development of an information and knowledge strategy.

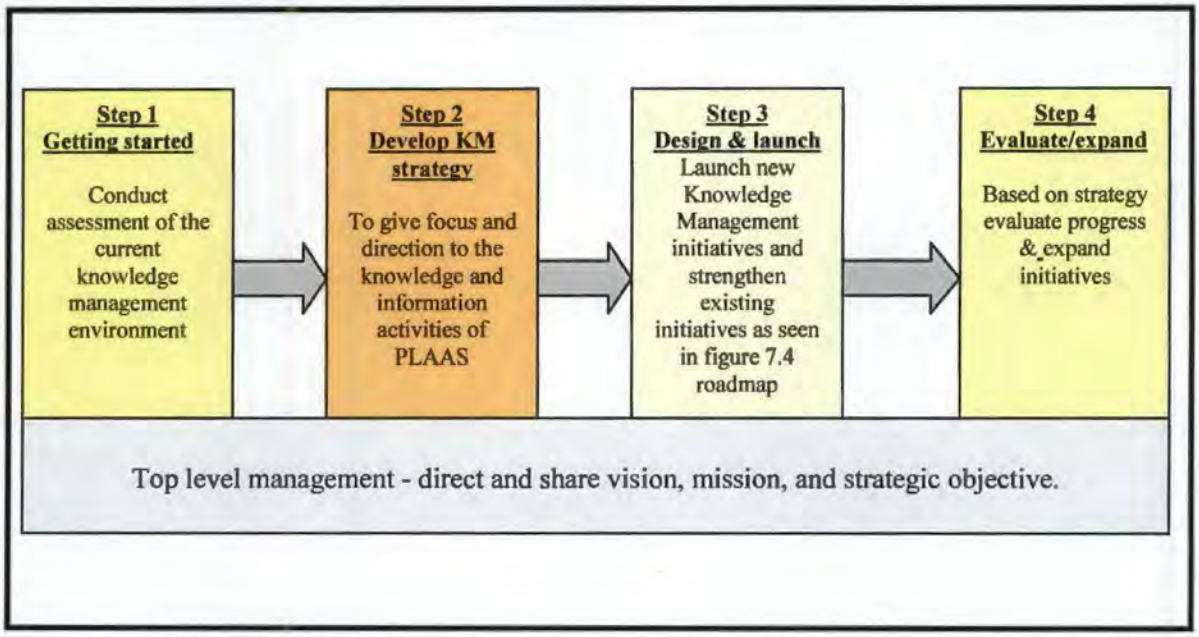
7.4 Roadmap for knowledge management

Although the PLAAS leadership acknowledges the potential of leveraging knowledge and information resources as a source of advantage, the results from the knowledge audit suggest that there is still a lot that needs to be done to develop a well integrated organisation that capitalizes on knowledge as a key asset. Knowledge resides in the human mind and therefore there is need for training and creating opportunities for individuals to share, and interact in teams. These are key factors that will ensure success in any knowledge management initiative. Technology per se is not the main driving force for knowledge management but the synergistic integration of technology, the people and work processes.

This section therefore provides a 'road map' that PLAAS can adopt to effectively initiate and implement knowledge management and strengthen its information activities. It is based on the results of the knowledge audit, the analysis as well as the observations made while conducting the knowledge audit. The knowledge management literature has further provided valuable input to the 'road map'.

The 'road map' here refers to activities that the organisation could focus upon in order to improve the knowledge and information environment of the organisation. Figure 7.3 below provides a framework that can be used to develop a road map to improve the current knowledge and information environment of PLAAS.

Figure 7. 3: Steps for the PLAAS knowledge management 'road map'



It is suggested that the model depicted in figure 7.3 above presents a framework that the organisation can utilise to systematically adapt the activities suggested in 7.4.1 to 7.4.7, and which are consolidated in the road map outlined in figure 7.4 below. It is noted here that although PLAAS has not categorically stated that they are a knowledge focused organisation, the knowledge audit results indicate that knowledge management initiatives are already taking place. These however, can be strengthened to create greater efficiency in work processes. The ensuing outline of activities and 'road map' for knowledge management summarizes key aspects that PLAAS should focus on.

7.4.1 Leadership

Having a strong leadership is critical to the success of any knowledge related initiative. The leadership sets the tone and direction an organisation will take and this can only take effect if they clearly articulate and share the vision, mission and objectives of the organisation. A strong leadership that is ready to implement change, who involve all stakeholders, and who communicate vigorously would provide the required drive for the knowledge management initiative. Strong leadership ensures that there is maximum utilization of the knowledge resources

of the organisation and establishes the mandate for knowledge management. They should also communicate the value of leveraging knowledge and the changes that the organisation needs to go through.

Other aspects of leadership include a leadership that inspires employees to share their knowledge, builds the strategic objectives of the organisation, spearheads planning, develops clear feedback systems that benefit the organisation, listens to the employees and makes them feel part of the of knowledge management initiatives.

7.4.2 Organisational structure

The nature of the organisational structure because it affects employees' expectations and the way that work and responsibilities are structured, has a direct impact on the success of knowledge management initiatives. Handzic and Zhou (2005:39) suggest that a networked system encourages open communication and access to the right kind of information, while a hierarchical structure generally hinders innovation in an organisation.

It was found that the PLAAS structure is not well defined and that there was a mix of hierarchical and flat elements, and often a 'hybrid' situation prevailed. Hybrid refers to researchers that work in their clusters that operate on both hierarchical and flat levels, while the administration staff generally follows a conformed hierarchical system of reporting. The structure should be clearly defined and communicated to the employees so that they are aware of the kind of environment they are operating in. Cultivating a more networked structure and incorporating activities that support knowledge sharing (e.g. an expertise database) would further enhance the working environment and support knowledge management initiatives at PLAAS.

7.4.3 Organisational knowledge and information strategy

Developing a clearly defined and stated knowledge and information strategy ensures focus is provided for the implementation of knowledge related activities. Such a strategy would spell out the knowledge and information activity development plans, and the policies and procedures that would govern these activities. Other aspects that should be incorporated would include the definition of roles and responsibilities.

Arguably having a specific person or group of people to head the knowledge and information implementation in an organisation is important for its success. Such an individual/s would be concerned with the knowledge needs of the organisation and based on their background and experience, facilitate the deployment of knowledge management in the organisation. To ensure effective knowledge management initiatives, a system of rewards and or incentives have been advocated in the literature. How these are handled depends on an organisation and developing long term approaches to such an incentive scheme would ensure sustainability of knowledge management.

In the short term individuals can be rewarded, for example, by means of recognition, extra time off, a note of thank you, opportunities to attend training courses, and delegating challenging assignments to individuals. These activities need to be spread across the board and not limited only to certain employees.

7.4.4 Organisational technology infrastructure

PLAAS operates in an environment where knowledge is dispersed throughout the organisation and where knowledge has been described to be 'fragmented'. By implementing and utilizing technology more effectively, the sharing, publishing and creation of knowledge can be facilitated, consolidated and integrated and thus more effectively utilised. PLAAS can explore the implementation of intranet technology that would facilitate the location of useful knowledge, help to transfer 'best practices', connect people of similar interest, provide a platform for forums

where discussion can take place and a system where a consolidated knowledge repository can be developed.

PLAAS research staff spends a lot of time on fieldwork outside their offices and by using technology creatively the challenges of time and space maybe addressed innovatively. Technology also facilitates the development of the organisational memory as discussed in the next section.

7.4.5 Organisational memory

Developing an organisational memory ensures the capture and wide dissemination of individual and organisational expertise and this in turn helps individuals to learn from an organisation's past. The focus should be on capturing tacit knowledge as well as explicit knowledge in the form of research reports, project proposals, memos, manuals, guidelines, and existing organisational databases. Based on the work and research output of PLAAS, the development of such an organisational memory could result in many benefits, for example helping to create a learning organisation, providing access to important information on land issues, increasing PLAAS' competitiveness in the market place and in the long run the development of more extensive collaborative relationships.

7.4.6 Organisational culture

Many authors have argued that changing an organisation's culture is a complex and difficult activity (Schein, 1994: 173 – 217). However, the leadership needs to take the initiative and work actively towards arriving at a desired culture that embraces knowledge management initiatives. In knowledge management, a culture that facilitates the free flow of knowledge, openness and trust, and which encourages knowledge sharing as opposed to knowledge hoarding are the desired outcomes.

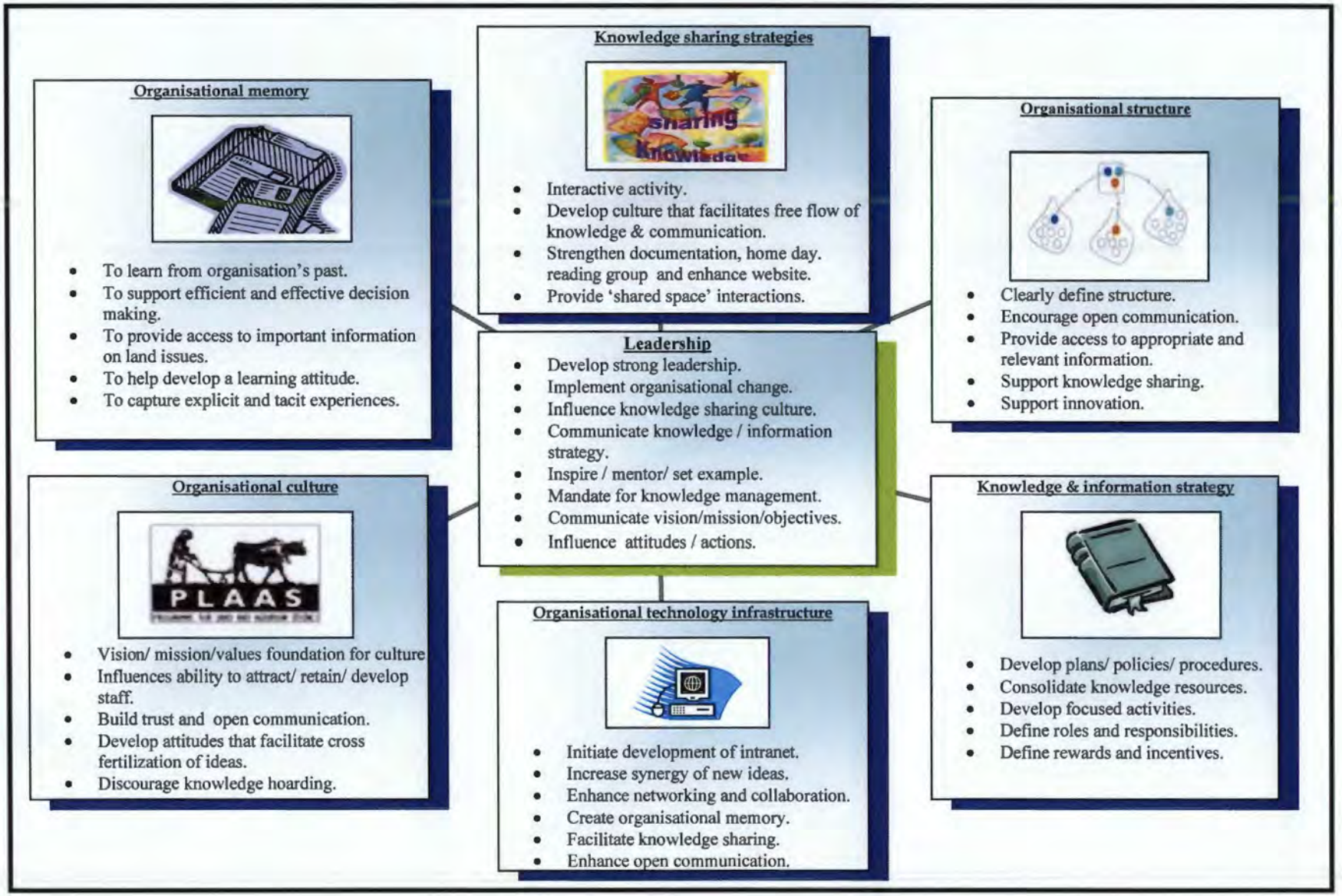
The PLAAS leadership needs to understand the culture of its organisation and develop a favourable environment that will foster knowledge sharing. Cultural change takes time but as a start, initiatives such as building trust, defining core values of the organisation, and openness in communication can be promoted together with the development of behaviour that encourages and facilitates cross- fertilization of ideas.

7.4.7 Knowledge sharing strategies.

Knowledge sharing is an interactive activity and by developing a culture that facilitates interaction, knowledge sharing will be stimulated. This is where the role of leadership plays an important role to encourage the free flow of knowledge and make employees aware of the knowledge that exists in the organisation, as well as to sensitize them to the benefits of knowledge sharing. The knowledge sharing activities that PLAAS currently engages with (i.e. the organisational website, the home day activity, staff meetings and the reading group) clearly need to be strengthened and individuals have to be encouraged to actively participate in them.

The issues discussed above in 7.4.1 – 7.4.7 are summarised and visually depicted in Figure 7.4 below. This represents the proposed road map to implement knowledge management at PLAAS.

Figure 7. 4: Summary of the proposed roadmap for knowledge management at PLAAS



7.5 Conclusions in relation to the research questions

As part of the conclusion, this section examines to what extent the research questions that guided this study were answered (cf. chapter 1.4). The three research questions that were derived from the objectives of the study were:

1. What are the current knowledge and information assets and related activities of the organisation?
2. What are the knowledge requirements of the organisation?
3. In what ways can knowledge management practices be applied to enhance the work of the organisation?

The study indicated that while PLAAS was clearly a knowledge creating, generating and disseminating organisation, the leadership have not fully acknowledged the need to develop a knowledge-based philosophy to guide these activities. The knowledge related activities were identified in the work processes such as research reports produced, conferences and workshops conducted, training programmes and through the networking and collaborative relationships.

While these activities suggested knowledge work was being done, it was evident that much needs to be done to enhance them. The knowledge audit further indicated that the most important knowledge asset that the organisation has is its research staff, many of whom are known 'experts' in their field. A further important knowledge asset is the reports outlining completed research projects.

In analyzing the knowledge audit results a number of knowledge and information related gaps were identified and in summary these related to:

- The lack of an organisational memory.
- Inadequate technology infrastructure.
- The need for a qualified person to run the resource centre.
- The need to improve knowledge sharing activities.

- Weakness in the current organisational structure and the culture of the organisation.
- The lack of a clearly articulated knowledge and information strategy.

The final outcome of the audit resulted in:

- Providing a PLAAS SWOT analysis (cf. chapter 7.1) as a tangible summary of the interventions that PLAAS can adopt in order to begin the process of developing a knowledge and information strategy for the organisation.
- Suggests of various recommendations and the development of a road map that could be used to enhance the information and knowledge environment of the organisation.

7.6 Future research

This project has by no means provided a definitive answer to all issues in the complex field of applying knowledge audits to implement a more effective knowledge management initiative. In the process of conducting the research, a number of issues surfaced that need further investigation, e.g.

- More research is required to help refine the methodology relating to knowledge and information audits.
- Information technology aspects need to be researched in greater detail, particularly in the way that they relate to the best way of developing an organisational memory system.
- The value of knowledge management as a critical initiative that gives organisations advantage needs more research.
- Further research needs to be conducted on how organisational cultures can be enhanced to support knowledge management initiatives.

7.7 Final comments

The knowledge audit highlighted the key knowledge areas and the many knowledge management challenges, strengths, areas of weakness and opportunities that PLAAS faces. It has further resulted in the formulation of a roadmap that can be adopted to improve the current knowledge and information environment. Developing a knowledge and information strategy with clearly defined policies and an implementation plan are an essential prerequisite to mapping a way forward for knowledge management. This is an indispensable step to enable the organisation to effectively leverage its core strengths, and take advantage of the opportunities while addressing the weaknesses in the system. While being a small organisation has benefits (it is easier to manage the environment), it also has its disadvantages as it has limited resources to manage the wealth of knowledge and information effectively. A clear strategy will ensure that all the challenges and ambiguities of knowledge management can be addressed.

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APPENDICES

APPENDIX 1: Interview schedule

INFORMATION AND KNOWLEDGE AUDIT

Name of focus are:
Role in organisation
Date of interview

EXPLICIT KNOWLEDGE RESOURCES

The following questions will be explored

- What key documents do you have in your area?
- Where are these located?
- How are they protected from destruction or loss?
- How valuable are these documents/ resources?

Resources/ description	Location	Value assessment	Risk to resource	Ownership

IMPLICIT KNOWLEDGE

The following questions shall be posed to the interviewees. Participants shall be allowed to freely comment on the issues posed from their own point of view. Any unclear questions shall be clarified to ensure that the correct message is put across.

a) People

With whom do you consult often for advice and opinions regarding your work? Indicate whether internal or external to PLAAS. If external name the person's organisation?

- Whom do you regard as the expert (s) in your field, inside or outside your organisation?
- Who does your work group collaborate with either inside and /or outside your organisation?
- Discuss your interaction with consultants, who are they?
- Discuss your interaction with government departments / organisations/research bodies, who are they?
- Are you a member of any association or institution for professional development and networking? Please name them.

b) Culture

How do you see yourself in relationship to the entire organisation (Draw your unit/focus area in relation to the entire organisation)

Describe ways in which knowledge is shared in your organisation?

- Do you feel that knowledge sharing is important? Why?
- In what ways do you share in your organisation?

- What would you suggest can be done to ensure that knowledge is shared readily?
- In what way does the organisation encourage and reward knowledge sharing? Please give examples of such incentives?

c) Process
How do you capture, store and use knowledge? What are the sources of this knowledge?

- How do you capture, store and use knowledge from consultants?
- How do you capture, store and use knowledge from Government divisions
- How do you capture, store knowledge from collaborators such as universities, research bodies and so forth?
- How do you capture, store and use knowledge generated inside your organisation?
- How do you think the current knowledge capturing, storage and use can be improved to avoid duplication and to identify gaps for example?
- Do you belong to any internal or external committee/workgroup where knowledge related to your work is shared? What is your role in such committees or workgroups?
- Which focus area does your focus group/ work group make contact with the least? why

d) Resources
What key resources do you use for purposes of your work?

- What knowledge resources in your environment are scarce and where else could they be found?
- Can you indicate instances where knowledge essential to your work was not readily available?

e) Tools
Name and describe tools that support your information searching and sharing?

- Are there tools you feel are needed to facilitate knowledge/information seeking?
- What other tools do you feel are needed to facilitate knowledge/information communication/sharing?
- What internet resources do you visit regularly and would you like to recommend to your colleagues at work?

f) General

- Do you have anything to add, questions, comments or suggestions regarding any aspect of this project?

g) Other questions to explore

1. How does the organisation go about acquiring knowledge that the organisation needs?
2. Does the organisation have a meaningful information and knowledge policy?
3. What are the key pieces of information that tell you your organisation is running well?

APPENDIX 2: Letter of introduction from supervisor to PLAAS director

UNIVERSITY OF CAPE TOWN

Centre for Information Literacy
University of Cape Town
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South Africa
Room 4.09, 4th Floor
Hoerikwaggo Building
Upper Campus, Rondebosch
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Personal e-mail:Gretchen.Smith@ uct.ac.za

09 May, 2007

The Director
PLAAS
University of the Western Cape

Dear Sir

Ms Beatrice Aliba (ALBBEA002) is registered for the Mbibl degree at the University of Cape Town. She is on the point of conducting the empirical component of her research project on 'Knowledge management in research organisations: A knowledge audit'.

While she was temporarily employed by PLAAS she developed a keen interesting in the work of PLAAS and came to the conclusion that it would constitute an ideal environment for her empirical study for her MBibl research project. She thus wishes to conduct an information and knowledge audit of PLAAS and I would therefore like to request that you grant her permission to interview your staff members on the information and knowledge needs of your organisation. She will further also like to create an inventory of all information and knowledge assets in your organisation and from this data arrive at a gap analysis where she will identify lacunae in your information and knowledge resources, areas of strength or weakness, as well as create a map of knowledge flows.

The outcomes of this study should result in considerable benefits for your organisation as you would then be in a position to use the findings to remedy information and knowledge deficits and meet the information and knowledge needs of your staff and the organisation as a whole.

We would, therefore, be most grateful if you would grant her permission to conduct the interviews.

Yours sincerely

DR J G SMITH
Supervisor

APPENDIX 3: Letter from PLAAS director granting permission for the study

From: Benjamin Cousins
To: gretchen.smith@uct.ac.za
Date: 2007/05/10 03:33:12 PM
Subject: Beatrice Aliba's research

Dear Dr Smith

I have great pleasure in giving permission for Beatrice Aliba to conduct interviews with my colleagues on the information and knowledge needs of PLAAS, and thus contribute to her Mbibl thesis.

Beatrice has done excellent work for us in her part-time position here in our Resource Centre. We look forward to benefiting from the findings of her research.

Best wishes

Professor Ben Cousins
Director
Programme for Land and Agrarian Studies (PLAAS)
School of Government
University of the Western Cape
P. Bag X17, Bellville 7535
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email: bcousins@uwc.ac.za
www.uwc.ac.za/plaas

CC: baliba@uwc.ac.za

APPENDIX 4: Letter from PLAAS Director to the staff about the audit

From: Benjamin Cousins
To: Aliba, Beatrice; Andries Du Toit; Barbara Tapela; Daries, Genevieve; Delpaul, Donovan; Dison, Arona; edgar; Edward Lahiff; Frank Matose; Hara, Mafaniso; Karin Kleinbooi; Lulekwa Gqiba; Maluleke, Themba; Manenzhe, Tshililo; moenieba; Neves, David; Ruth Hall; ursula; Webster Whande; Zamchiya, Phillani
Date: 2007/05/10 03:29:15 PM
Subject: Beatrice's research

Colleagues

Beatrice will be undertaking research for her Mbibl degree at UCT over the next few months, using PLAAS as a case study for her thesis on "Knowledge management in research organisations: a knowledge audit".

She has sought permission to conduct interviews with PLAAS staff, on the informationand knowledge needs of our unit, which I have granted. Please co-operate with her in this interesting exercise, which clearly has the potential to benefit PLAAS.

Many thanks

Ben

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APPENDIX 5: Sample interview conducted

Interview conducted at PLAAS

Q)Tell me about the core of your work/ engagements here at PLAAS.

A) Key performance areas in no particular order - I will run through the areas. The first function is the management function which entails management of an area of staff. So to speak being the line manager of a number of staff members primarily reception officer, admin assistant and then also the administrator in project support, the resource center also falls within that areas. Those are the direct supervision line. Then the indirect supervision is the other admin staff which should be the finance officer whose direct manager is the finance manager, and also the administrator academic postgraduate programme who has his own direct manager who supervises him daily, but we also connect. We used to have student assistants but that function no longer applies if need arises that is part of the function

The other management function would be in so far as performing duties as required by the management committee which comprises the director, the deputy director, two managers and two staff representatives who should be researchers. Having said staff representatives reminds me of some thing we should be discussing about the staff representation whether we need an admin representative as well.

PLAAS also has a management team which comprises the director/ deputy and the two managers. The Mgt team meetings happen frequently, fortnightly and management committee meet quarterly. The management team deal with the day to day issues and decisions at a certain level where as the management committee would deal with policy issues at a higher level.

Q) In your day to day work are there specific people you connect with for your key information and knowledge you need in your work area?

They are people internal to PLAAS. Usually other management team or committee on more serious matters. I would confer with project managers, the researchers are co-coordinating specific areas. I would confer with admin staff as well depending on the nature of the issue.

External to PLAAS. I would confer with relevant departments at UWC especially the HR department there is a lot of bureaucratic requirements especially around staff contracts. The varsity has more recently revised its contractual arrangements. So with the new regulations and with new staff appointments at PLAAS there is quite an active connection between PLAAS and the HR department.

The other UWC departments would be the offices of the rector and vice rector whenever we need executive approval when we make appointments we need them approved and their salaries approved, even though PLAAS raises its own funds. We have to get approval especially where salaries are higher than the UWC we have to get approval from Senate. Quite often all this gets in the way of getting things done quickly especially right now we are waiting to get approval for new staff because it has to go through faculty.

The other external department would be the EMS faculty also the School of Government being our parent institution. The University is the parent but we are a research unit within the school. We connect with a range of other university units where necessary. Other external bodies outside UWC would also be a range of other NGOs partners within the land sector/ natural resources/ our actual content partners. other contacts would be those connected to our publication production. This function is outsourced which means there is quite a bit of liaison with the service providers who produce our publications.

Q) How do you normally capture the information/ knowledge which is important to your area and how do you disseminate

The info I am responsible for generating would be of three different types. The PLAAS policy manual which contains the collection of policies which are largely within the ambit of the university unit. We have to abide with the UWC policies and procedures but where we find that we need to review our position especially with policies we find to be un–progressive, management would recommend this, e.g. the UWC maternity leave has many discrepancies. At PLAAS we standardize to make available standardized benefits, and all this we have to capture. All the information I generate would be processed and stored electronically. Some of them would find their way to a dual filing system, where I do keep and make available hard copies. If its information to be disseminated to staff that then it is made available in hard copies.

The other information that I generate is the minutes of meetings; recording of various meetings which take place, staff meetings those minutes are also stored electronically and disseminated to staff as hard copies and electronically. The other meetings that we need also to record are staff retreats and the end of year function. Those would be recorded as well. That is also generated electronically

The other info I also process are staff records and this would be contracts, there is quite a bit of paper work we keep electronically but also hard copies which have to go to other departments. We also keep records here

Q) While here you mentioned some of your records electronically,. is there a system in place to ensure than your electronic information is safe in case of a problem?

I don't have a reliable arrangement system. I do have a backup but in fact I am not sure if I am a good at making sure my backup is up to date. I do confess to neglecting that area. The H drive is available to members, but I am not sure even how the H drive works - I know they talk about backup on the H drive. Some staff have been encouraged to work in the H. There are some individuals who work in H drive. I need to consult someone on the H drive because I think I lost the clock with my backup, do I need to back up daily or does it automatically capture that. I have lost that aspect a bit. I would confess not being on top of it. I am acutely aware of my responsibility of my record keeping and the organisational memory to make sure it is secure and accessible and that there is a reliable backup. I am very good at making sure all my work is saved on my C drive. I think also because of the sheer load of work daily, some of these aspects are neglected.

It is possible work is saved on the H drive but one has to go and back up regularly. I need to make some pointers to remind myself about this

Q) In your day to day work are there key resources/ information that you refer to regularly to enhance/ improve efficiency of your work area?

Because my area is so diverse, where I need to get my hands on so many things. I experience frustration of not having sufficient time to do the necessary things, checking and getting my hands on key resources. Just in terms of getting quick responses and having contacts on my finger tips, some times its easier to pick up the phone and get the info one needs. For HR I need to work with them on a regular basis. UWC has a lot of policies and procedures but yes I am the HR person in PLAAS so I need to be equipped to be able to fill in information and inquiries. I myself I haven't had formal training in HR my training has been in other areas so I do rely on the HR practitioners at the University and I also have access to an electronic HR and labour manual which is quite comprehensive. It provides useful guidelines on practical things we have to address. Contractual/ workers rights. Those are the resources I utilise. I utilise the HR department and the electronic manual.

Q) If you were to be given a piece of paper to plot/ visually represent yourself in PLAAS. How would you describe yourself.

As an octopus with multiple tentacles, many more than 8 tentacles. That's how I see myself especially with the kind of inquiries, requests, the kind of cry for help that come to my door step. I think you know that my door is open I find it very difficult to operate because staff members need attention. I have really had to try and close the door, but in five minutes some one will ask why the door is closed. So I just feel there is a definite connection with every staff member because of the very nature of interaction with staff, not just HR matters but organisation matters, its management matters, its staff issues, its work area specific issues, its sometimes connecting one staff member with other staff. Staff members are very seldom in the office at the same time, - these are the networking functions that I perform. There are also interpersonal dynamics where there are some people who do not connect that readily and regularly with other staff so one has got to be mindful of staff dynamics. There are occasions when some of the work related interactions that I have convert into counselling where you find yourself in a situation where it becomes necessary to move beyond the work world and to be aware of each and everyone's personal situation which involves confidence and an understanding that each one has a situation and to balance that with the demands of work, the humane aspect which comes with this role. It's a range of things.

Q) Is there a way we can actually draw and represent this whole description into some thing visual

Am positioned at the heart/ core/ nerve center of the organisation by virtue of work and responsibilities.

I see a range of different associations. I don't want to use some terms which are loaded with connotations. Peripheral. I connect with staff members I think my office is probably one area where several activities are anchored and facilitated so I would interact perhaps a lot more closely with the management component of this management team/ management committee. From there would flow to other relations with project managers research staff and very closely inter twined is the admin staff to make sure that the projects and the content work of PLAAS are adequately supported. I make sure I take stock of the required standards and content.

I think also my period of service at PLAAS is also quite a key feature I have been here since 1999 so it should make it about 8 years, having 8 years of organisational memory and also sense of the history and so much detail of the history and background to certain projects and why certain things are the way they are. Also having been in a range of admin posts at PLAAS before coming into this post I feel that it allows me more understanding of the various areas of admin and how those areas came to be developed and what kind of pressures are involved. So at the admin level I think that is very beneficial and at the research level my own personal interest in the content of PLAAS and my decision to study I think that is a rich blend of insight into the content of PLAAS. I understand the core business of PLAAS because I do share in the goals and vision of PLAAS.

Q) As an organisation how do you ensure that you don't loose key people and more than that how do you ensure you don't loose important key knowledge

That is a concern especially when one looks at the high staff turnover. I don't think we have been doing well especially in the earlier years. I think one way of capturing knowledge is using staff reviews and performance appraisals and very recently in my entire association with PLAAS we have re looked at how performance appraisals and probationary staff reviews and how that happens. Emphasis has been taken off just stressing performance per se but building into it the feed back from staff, i.e. what works, what has been there experiences and what are their recommendations and way ahead. With the other performance appraisals one can gather staff compliments and one can collect a wealth of exceptionally valuable input from every one connected to the organisation. If it is not just looking at what was done, what wasn't done, and salaries. The issue has been moved to include the recording the experiences of the staff. The UWC has a monthly column where people are praised - I think if we can extend to that what the experiences of the people turn the wheel, to look at what has worked, their experiences what causes people to be unhappy. To take stock and record and from that we would be able to create the organisational memory. Is your performance more than appraisal? Is the content shaped in the right way, do we create an occasion for gathering memory from year to year, and perhaps have an account of why things happened - would be a very valuable record. The other official document is the annual report. Those have been consistent in the way they have been appearing. We had a celebratory report for 10years. I think also the other organisation records minutes of meetings I think those would be channels to ensure the organisational memory is secure

Q) In which ways do you use technology to share information/ knowledge

My interaction with technology is limited. Using the computer and email are the easiest and probably the primary tool. Info is shared both electronically and as hard copies and is generated by computers. The Internet I use for my own interest and study. Occasionally I use it in my work area but its not key. In my work area I don't generate a lot of Internet based material I use it occasionally but its not a key requirement for me. I would rely primarily on the computer and email.

Q) How do you ensure that the organisation is running well. Are there pieces of information or documented knowledge that tell you from time to time that the organisation is running well?

Yea being at the nerve center of the organisation. I am responsible for making sure that the sharing and dissemination of information works well. One area which gets rattled about is in fact the minutes . Even when one knows it needs to be done and disseminated. We have been over stretched , we become over taken by the immediacy and urgency of other stuff. That is one area we are trying to improve upon. I think minutes are key in ensuring that all staff are on the same wave length and remain on track, especially with tasks identified for attention and for making sure that the decisions and proposals are captured and followed thru and things are done and as a reminder to pointers of responsibilities of the various things as it was mutually agreed.

The other information that needs to be disseminated is around staff documents - salaries documents, contracts and ensuring that the details are correctly and clearly captured and secondly that there is mutual understanding and agreement on terms and conditions of contract.

The other documentation are the publications. Research is conducted ultimately to find its way into a research report or an occasional paper, the actual publication of research findings or policy briefs and comments made on certain issues. It is a key component of my area to ensure that I mediate how the publications are produced and more importantly how the information is disseminated to make sure that whatever we generate has tangible prove of the work we do here and to inform policy out there.

Q) How do you see the role of the Resource centre in the organisation? How do you see its value in the organisation?

I think it is a central area and that it is worthy of nurturing. I think we have an obligation to keep it current and the information relevant. The information that it houses must be relevant and accessible to the PLAAS audience, PLAAS staff and then immediate associates and partners and students and other partners. I think it also needs to be accessible to the UWC community and I think we can decide how public a resource we want to make it but it also needs to be accessible to the broader academic community. It has certain functions it has to fulfil. I don't think that we should try and develop it to run in competition with other libraries. I think it has sufficient worth as a collection and I think if we fulfil all the requirements of a special collection for the audience it serves I think we will have fulfilled its function. Decision of what it wants to be? go on the website, first its got to serve its parent institution, PLAAS and students and we can decide to what extent we go public. It's a very valuable and rich collection especially now that it has been put in order. Its got to be maintained and consistently updated and weeded when necessary I think the importance is accessibility of this rich collection we have here.

Q) What role does the home day play in the life and work activities of the organisation?

Home days are very valuable. It was primarily decided upon because staff were not connecting with each other, the reason why it was agreed that we should introduce and formalize one day in a month was in the first instance to create an opportunity for staff to connect with each other. Where it takes the form of meeting each other or just catching up , just interacting to connect and also to try and bridge the divide between the researchers and admin staff. These are of course connections but they connect people to a greater or lesser degree - we have come far in connecting and bridging the divide. It is something that needs nurturing. I think broadly to introduce a group component in the organisation like through group activities. It would be to connect with each other not on an academic level but to get to know each other better and also to try and improve staff relations by connecting and interacting at a more relaxed informal level. It is definitely for group building as well.

In some ways it has achieved its goals. I am concerned that the common goal we have is something that needs to be revised and reviewed continuously - I think if a home day is not held in a way that one monitors like checking a pulse, it defeats its purpose. Certainly I think last year it was quite a structured and well thought out programme - there was a momentum that was maintained and there was great participation - I think we achieved a lot. I think it works well when everybody is committed to it to the extent that once the dates have been made available that it is a date that will not be broken - but I have found that with the beginning of this year, well people do get busy and have external demands that are out of their control, e.g. is a key fundraising meeting or a new connection. I just found the urgency and the seriousness with which its taken dissipates. We don't have the same coordination we had last year. We have been ad hocking through the year - I think that if there is a more causal approach, it is easy for the home day to loose importance - it needs a more solid coordination. We haven't had group activities this year because we don't have a coordinating committee. I feel that component is loosing. I think it starts with your coordinating function

We have agreed that with the high staff turnover that is the time to revive it and perhaps see that we have a programme for the rest of the year where we plan focal points and activities built into it - it needs a firmer structure and it needs to be driven by a subcommittee.

Q) Normally PLAAS conducts seminars. How do you see the value of the seminars in relationship to PLAAS core engagements?

The seminar programme is a vital area of the PLAAS operation containing primarily PLAAS content The seminars happen at a number of levels - its primarily the public seminars where the academic persons are invited and also we have the internal seminars. The internal seminars are invaluable for training researchers, interns, and postgraduate students presenting proposals for peer comments. It provides a valuable forum for that to happen. The public seminars which go wider I think they are crucial in the functioning of PLAAS. The research that is conducted and the areas that are covered - there is so much to squeeze everything into a document - the wealth of insight and information. The danger lies in finally putting together a document which may not capture everything, I think that is where the seminar structure plays a vital role to take it further than what is covered in a

document and also to share and state opinions with peers and academic peers. To certainly also disseminate the wealth of information that researchers gather because undoubtedly researchers at PLAAS they do emerge as specialists in their areas and there aren't always that forum in the media but the seminar platform has been created for them to go public to share their insights and experiences they have and what they have documented.

2) Does the attendance suggest the success of seminars, knowing that staff are regarded as experts?

There is a range of factors impacting on assessing success. We have different responses to different seminars. It is a known fact that the more senior presenters who are well known in the academic circles, that there presentations are usually attract greater response in terms of attendance. It also has got to do with what kind of content area is being addressed. If we look at areas such as chronic poverty and especially if the seminar is connected to broader themes out there, they attract more public interest. The other factor would also be the timing of events. Now we know when it is exam period, colleagues are busy, students are engaged in studies, there will not be such a big campus presence so no matter how well you advertise there are priorities that occupy your audience. Only those who really have a keen interest will make an effort to get here. Definitely timing is key.

Advertising is very important as well, we have a network - we have a seminars invitees list. For that reason you can never predict what kind of responses you are going to get but there are some givens you can rely on to know when you need a bigger venue or expecting a bigger crowd. But it is a key platform.

Q) Anything you would like to add

We have covered all the areas related to information. Perhaps one area we didn't cover is the marketing of PLAAS, particularly the marketing of the postgraduate programme - that is specifically to promote the teaching programme. That goes to a specific audience. We did initially advertise in newspapers but we found that the word of mouth response is always a better one; it is a very specific audience we can't just throw it out there. The postgraduate programme has specific areas - we have of late stopped advertising in the media and we rather send out our postgraduate brochures to a selected audience, e.g. govt departments. Selection is important; we need to bring people on board who will give good account of themselves. We did initially have people from other areas who were admitted because they met criteria of postgraduate studies. That is the marketing. We also market the publications by means of our website postings that we do, and occasionally we have a special flyer, we advertise in the news papers, so that is the marketing component.