

An organization should have proper training to assist employees acquire new knowledge and contribute to the creation and transfer of knowledge required for its operations. Pre-professional education and in-service training are believed to be vital in preparing civil servants, and for developing them to become knowledge-workers (Monavvarian & Kasaei, 2007). Therefore, it was important for the study to establish how the directorate ensured that their employees obtained the appropriate operational knowledge. Although there are different factors influential in “changing the attitudes and skill levels of the public employees” and “generating greater managerial capacity at top levels”, training was considered as an important factor.

Under the circumstances, it would be hard to effectively communicate information and knowledge to people lacking similar skills or experience (Chong *et al.*, 2007).

Lack of skills-retention measures

The organization lacks proper measures to preserve the much-needed knowledge. Participants feared that critical knowledge is leaving the organization, especially the highly sought-for-skills in the different areas of engineering. The intellectual capital of all departments is not co-ordinated well, leading to its loss. It is true that important documents that could inform various processes and decision-making are not traceable. One participant indicated that “... *hospital blueprints are intellectual property*”. These drawings are regularly improved to keep them current, in accordance with the building standards; and sometimes the additional information is not documented.

This means that important knowledge is lost, leading to the need for re-invention in future operations when similar knowledge is needed for re-use. Lack of proper documentation is not the only challenge for the directorate. The problem, to a large extent, is that this knowledge is not documented appropriately; it is not co-ordinated, thus remaining inaccessible for sharing. This results in the costly duplication of efforts (re-inventing the wheel), as each department embarks on a solution-finding task, instead of learning from one another's achievements, mistakes and failures.

Another major hurdle is finding ways to retain the transferred skills acquired through such programmes as *Mzashaki isizwe*. However, a constant difficulty experienced by the directorate is the retention of the transferred skills. Once the graduates get the required skills, it becomes extremely difficult to retain them – partly due to the many opportunities presented

to them in the private sector. Another factor driving the young graduates to leave is the remuneration. The salary packages offered in the public sector cannot compete with the amount offered to these people in the private sector.

“The big problem here, far more than any other in the department, is manpower. It is a huge problem; and this manpower is linked to [the] payment scale. It says: if you have got so much experience and you are an engineer, you get so much, if you are a trainer you get so much. So we can only offer them a certain salary, and they laugh at you, and say: Is this all you can offer me, ya, it is not”.

Critical institutional knowledge is also lost when an ageing workforce retires. Many of the public servants that are in leadership positions, specialized positions, or on long tenure with the organization possess valuable knowledge and experience that gets lost when they leave. This may have a negative impact on the organization (Egbu, 2004). One participant pointed out that: “... it becomes difficult to find a person who could take the place by having at least similar qualifications.” Loss of knowledge is expensive for any organization. This has resulted in the departments failing to deliver on their mandates; and if they do deliver, the quality of the services rendered is questionable.

Government organizations have various programmes set aside to provide employees with the necessary skills related to their work activities. However, the study indicated that employees were not aware of any formal or informal KM training programme aimed at improving the internal structures, as well as their individual skills. Some of the participants claimed that the administration of KM activities is arranged externally; and little was done to follow up on the execution, and also to understand the performance internally. Lack of awareness of KM and its importance, can be explained by the lack of formal or informal training; and this remains a huge challenge to the organization in the face of managing knowledge.

Lack of KM incentives and rewards

Knowledge-sharing is an important KM process. Lack of rewards or insufficient rewards, could interfere with the sharing of knowledge among employees. Participants recognized a few incentives believed to be present in WHD; but these were not directly related to KM practices, namely: monetary, promotion, performance-based recognition, and peer appreciation. The greatest challenge is not having dedicated resources to enable learning and to facilitate knowledge-management, a situation that places the responsibility on passion-

driven rather than motivated people. It becomes difficult for the majority to look for an effective KM programme when the incentive mechanisms are missing.

The department has tried to prevent the loss of skills transferred to graduates, but without success. As stated by one participant: They are not winning in this regard: *“No, the only way we try to keep them is to make a counter offer. But they got big salaries on offer from the private sector; that is why government cannot compete with the private sector, so you know it is a sad story...”*

Employees would have no motivation to share what they know with their colleagues if their efforts are not acknowledged and rewarded (Yu *et al.*, 2007). The situation may worsen if it is accompanied by the fear of losing a job, if they share too much information. Managers are charged with the responsibility of ensuring that knowledge is shared with the organization; however, the issue of rewards is complicated – particularly in the public sector. Some researchers suggest that having efficient reward practices are crucial to knowledge-sharing (Fathi *et al.*, 2011).

Some public organizations are using measures such as incentives to encourage knowledge-sharing, and using these in performance evaluation (Yao *et al.*, 2007).

Trust

Another factor that surfaced from the interviews is the trust issue among individuals, and between employees and management; and this constitutes the major barrier to knowledge-sharing. Employees refrain from sharing what they know with each other – not because they are afraid to reveal confidential information – but because of the lack of interpersonal trust. When there is an established system of trust, employees are not only willing to listen to others, but they are also able to share their knowledge with others (Alawi *et al.*, 2007).

Most managers in the B category considered the level of trust in their organizations to be low, or altogether lacking in some areas. One interviewee said:

“...most of us are behaving like we are all thrown into this bottomless sack, and we can only survive if we strictly protect what we know, the attitude is blocking any form of sharing information”. Another one said: *“Trust is a big word, and surely a major*

concern in my line of work, I cannot afford to trust other people recklessly ... knowledge is personal”.

Other participant commented that it was like giving yourself away when you are asked to share knowledge. Trust between employees is considered key in encouraging employees to share what they know with each other (Sveiby, 2001; Alawi *et al.*, 2007; Singh & Kant, 2008; Renzel, 2008). Trust forms the basis for the establishment of a knowledge-sharing culture at both personal and organizational levels; and this is followed by creating a fostering environment within the organizations (Edmonson, 2010).

Collaboration

Collaboration is recognised as an aspect of any knowledge-‘friendly’ culture. In the literature, an obstacle to sharing may be caused by fear of collaborating with the wrong people and simply being used without any recognition or reward (Edmonson, 2010). In a study conducted by Sveiby and Simons (2002), public sector organizations appeared to possess a worse collaborative environment than private sector organizations. This could be attributed to hierarchical organizational structures. In effect, the most difficult barriers to overcome in implementing KM projects in the public sector are culture and contracts that hinder, rather than support, the collaborative and improvement-focused culture (Milner, 2000).

In a different study, Amidon (1997) showed that collaborative practices continue to be considered more beneficial to organizations, particularly in leveraging the skills of highly skilled professionals.

Communication flow

The participants cited poor communication flow within the department as a big hindrance to overall performance. *“Red tape has jammed [the] communication progress; if we can get rid of this problem, the department will be in a better position than ever before”*. Government departments are said to be characterized by hierarchical and bureaucratic structures that, in turn, prevent the free flow of information (Liebowitz & Chen, 2003). Flat structures are acknowledged to favour KM (Sinclair, 2008). This poor communication in the department may hinder the flow of knowledge – both within and externally.

Inadequate awareness

When it comes to KM practices, most participants maintained that it is a practice that only exists in a document. The management have failed to create enough awareness of the practice, in addition to failing to inform the employees on what they are expected to do. The interviews revealed that employees are encouraged to participate in training sessions and other programmes designed to empower employees. As a result, employees gain skills and experience, which are not fully recognized or used – thereby causing the loss of these assets – along with their potential benefits.

The organization seems to be incapable of utilizing all the knowledge and experience of their employees if they are not aware of the structures put in place to support the impartation of knowledge.

5.10.4 Technological barriers

Some participants acknowledged that technology was a major motivating factor in the directorate. Collaboration with the DoH means that the directorate exchanges large amounts of information. Some of the participants indicated that the deployment and the use of the right technology would help them utilize knowledge more efficiently. ICT provides new capabilities and practices that change much of the nature of the public sector and interactions at large (Wiig, 2007). The WHD has implemented technological systems, such as Livelink to capture, store and transfer explicit knowledge. The lack of a knowledge repository is a huge problem in the directorate.

The departments do not know 'what they know', because there are no databases that give them a grasp of their own knowledge base, that is, any co-ordinated understanding of what their workers know. Importantly, the intellectual capital or knowledge of institutions is in its employees' heads. These systems are not suitable for extracting tacit knowledge embedded in employees' heads. As discussed in section 5.7.1, the departmental approach to KM is focused on finding technological solutions. Tacit knowledge has been recognized as a crucial asset to organisations in a knowledge-based economy; and therefore, it is critical to establish a mechanism for retaining this type of knowledge asset.

It is important to identify ways of developing and utilizing the human side of KM processes. The drawback of the lack of understanding on what WHD knows, of what public officials

know, is complex – in that there is no proper transfer of skills; resources are wasted, as competencies are duplicated; and people are discouraged – because they do not feel valued.

Others were of the opinion that relying heavily on technology could dilute the real meaning of knowledge-management, when in reality, people play a major role in exchanging knowledge through non-technical means, such as formal and informal meetings. In effect, KM is practically a deeply social process that should consider both the human and other factors (Mason & Pauleen, 2003). Investing heavily in information technologies does not necessarily translate to better KM.

5.10.5 Political factors

Political factors, such as political changes, ethical codes, behaviour, and command and control are identified as barriers to KM transfer efforts in general. Managers underlined the fact that most of the portfolios in the department were held by government appointees; and when there are political changes in a country, there could also be changes to the department, such as putting different policies in place. This could hugely affect the existing knowledge-transfer structures and the overall initiatives. In addition, the government has in place a code of conduct or ethics that deter employees from being honest about specific activities.

The divulging of such information is considered a breach of the code of conduct. This was put into perspective by a manager who maintained that:

“... we talk of preserving knowledge in the way we share information ... our hands are tied almost all the times ... it is difficult to share “classified” information with others unless they have previously been released by the Department or approved in that format”.

Clearly, political factors have a significant relationship with the performance of knowledge-transfer, as well as knowledge assets. Their existence may have a negative impact on the overall KM efforts.

Likewise, the structure of government, with its emphasis on command and control, could be a barrier to the free flow of information. The implementation of KM programmes might suffer delays from administrative red tape on national security, privacy or regulatory issues. And political changes can endanger or stall new programmes.

5.11 KM benefits

When asked about the potential benefits their organization would be likely to get by managing knowledge successfully, most participants felt that it was saving the knowledge of employees who leave and protecting strategic information that was key. Other benefits were associated with the technology that enables easier access and viewing of information indicated as follows:

“I have no answer to that question. I only know it started here in 2006, so I don’t know there are obviously benefits; but I can’t quantify them. I can briefly say that with the Livelink system, I can almost get any information I need that is within my access right. Another thing is that the Livelink system has come at the right time, when other people put in new information, I can see that immediately”.

The government’s new development in the form of a reduction in the budgetary allocation for the main expansion projects, the mobility of talented employees, and the shortage of skills, among others, has placed considerable pressure on the DPW operations. Most of the participants stated that they lost core competencies when staff leaves to join other organizations or units. The WHD relies heavily on the expertise of consultants who offer expert knowledge in most of their specialised building areas, such as engineering.

This knowledge is lost; and this loss is often attributed to the lack of a well-structured and developed KM system.

Bearing the above issues in mind, KM practices – if applied appropriately – provide improved results to individuals and the organizations alike. From an individual position, employees get a chance to share their experiences, knowledge, and to learn from each other’s mistakes, thereby resulting in an improvement in their performance and skills. On the other hand, organizations benefit in the efficiency, quality, productivity, in addition to better decision-making (Cong & Pandya, 2003). The acquired knowledge by individuals and the lesson learned from projects should improve the performance of the directorate when applied well.

5.12 Conclusion: The answer to the research question

In this chapter, the case-study findings from the semi-structured interviews were analyzed and discussed. A significant issue in the implementation of successful KM initiatives is the

preliminary preparation of the organization to acquire, convert and utilize new KM processes. Preparing an organization for KM initiatives also requires establishing an enabling environment for the core KM processes – by adapting a sharing culture, strategy, the right tools and techniques, resources, and leadership. In addition, the existing challenges impeding KM success should be identified, in order to realize the benefits. This study has employed non-empirical and empirical research to understand the existing KM principles and practice in the WHD, as well as to answer the research questions.

The first sub-question was answered by examining the relevant literature and the empirical findings. It was established from the preliminary study conducted through unstructured interviews in section 2.2.4 that the directorate is facing several challenges in the process of delivering a health infrastructure. These problems included: (i) The nature of the projects; (ii) communication flow; (ii) the loss of project and institutional knowledge; (iii) information and knowledge overload; (iii) skills shortages; and (iv) advances in the use of ICT.

As a result, the directorate has been compelled to acquire and put in place ways of managing knowledge more effectively – with the key aim of becoming more innovative, adaptive and to improve the delivery of a health infrastructure. As a result, the WHD, as with public sector organizations elsewhere in the world, is now recognizing the potential benefits of KM as an important asset – with the capacity of offering sustainability and survival in the knowledge-based economy, as well as assisting in the need to improve government services, in order to deliver effective health-infrastructure services. In answering this sub-question, it has also meant that the first sub-objective has been achieved.

The second sub-question on the motivating factors has been answered by examining the relevant literature in section 2.2.1; and this was confirmed in the empirical findings in section 5.8 that public sector organizations' reasons for KM are more related to the provision of improved services. The participants indicated that the fostering of team work, knowledge-protection, retaining knowledge in-house, and the prevention of repeat activities comprised the key factors.

There is, however, evidence that many public sector managers have not come to terms with the actual meaning of KM as a concept and a strategy. Although the directorate has a formal KM policy in place, it was clear that KM initiatives are mainly associated with the implementation of ICT, which is merely the technical aspect of KM. Thus, most managers

describe KM as information-management or document-management, which may be perceived as a positive issue, since information forms the basis for the formal implementation of knowledge-management practices.

KM enablers are considered a requirement for the success of KM practices. As in other public sector organizations elsewhere in the world, KM initiatives have been present in the WHD for quite some time, as was discussed in Chapter 2. KM is about people, as much as it is about systems.

This study concludes that organizational culture, organizational structure, leadership and strategy, ICT, and KM resources are five critical enablers for effective KM from previously published literature on public organizations, as underlined in section 3.3. Government managers understand that ICT plays a major role in KM. The study also indicates technical support, and that facilities in the directorate are at a fairly good level of implementation. KM systems, like Livelink, can be used for managing content and for collaboration.

The directorate should, however, refrain from focusing their KM efforts too much on the technical aspect; but they should consider the social aspect, which is so vital to the successful KM initiatives. The WHD requires a flexible and easily adaptable KM culture. This is because the existing culture is still at a low level; and it needs to be boosted to facilitate other cultural aspects, such as the willingness to share knowledge, trust and collaboration. Also, incentives and rewards should be set aside to encourage a knowledge-sharing culture. Through the case study of WHD, in the leadership and strategy, getting the support of the top managers is given more emphasis.

The government managers believe that effective KM implementation requires all top-level managers and KM agents to come fully on board in their understanding and support of the efforts. The department is adequately aware of the significant role played by leadership in KM projects. The KM unit is headed by a senior manager who promotes the values and practices associated with its practices. For the resource-enabler, people are believed to further the KM vision and mission if they understand the underlying objectives of the KM project.

Having enough human capacity and promoting individual learning through formal training for the employees are key factors. It is also important to have a dedicated KM budget to drive the learning and KM. On the aspect of human resources, the department is grappling with staff turnover – particularly in the different fields of Engineering. This not only affects the

organization's memory negatively; but it also interferes with the effective provision of services to the public.

This section addresses the KM barriers extracted from the literature and from the empirical study believed to obstruct effective KM. Government managers have in the study identified certain weaknesses that exist in the system. These are generally labelled as individual, organizational and technological. For instance, they acknowledge that time constraints, trust, a knowledge-sharing environment, rewards and incentives, communication flow, insufficient training resources, and the lack of system integration exist as the main barriers. In the light of the study, a new barrier resurfaced, namely: political changes.

The barriers to effective KM are largely due to the lack of awareness and the lack of time. Employees often work under significant time constraints, thereby affecting their ability to create or apply knowledge effectively. The lack of time could be interpreted as a lack of awareness of KM's importance. On the whole, the participants are certain that the culture in the department is not favourable to KM. Some indicated that it does not exist at all. Employees at WHD are already sharing knowledge to some extent on an informal basis. The literature agrees that knowledge-sharing can only function successfully if the culture of the organization supports it, or the employees have mutual trust. Employees share knowledge on a need-to-know basis, or from individual choice. It is difficult to measure "culture" directly, as stated in Chapter 3; thus, the presence of KM enablers in organizations is seen as indicating the existence of KM practices.

The results clearly indicated that the existing rewards and incentives did not encourage knowledge-sharing. Rather than offering non-attractive, meaningless incentives, the organization should invest time and effort in explaining the potential personal and organizational benefits of sharing tacit knowledge to motivate staff support and involvement, and then to offer appropriate rewards aligned with staff values.

The loss of critical knowledge was cited as a barrier to effective KM. The department is placed at the risk of losing employees through retirement, job-'hopping' and crucial knowledge from building experts. It was also noted that there are insufficient numbers of people who are adequately trained to replace retirees and people lost to attrition. There is insufficient KM training for all employees – meaning, that the present expertise is already

being lost. There is no official or encouraged forum for disseminating knowledge to other individuals.

KM processes should be treated as distinct from KM enablers. As discussed in section 3.4, KM processes can be considered a structured co-ordination of activities for the purpose of managing knowledge effectively, as it is enhanced by the appropriate use of KM enablers. The literature established four main KM processes as in: acquisition-oriented, conversion-oriented, and application-based, along with protection activities. The results from the study also confirmed that government managers have an understanding of what these processes entail, although not entirely. With respect to knowledge-application, the government officials were concerned about the threat that large-scale departure of staff posed to the inventory of organizational knowledge.

Knowledge, unlike data or information, exists solely within people, originating from their training and experience, and it comprises essential components, such as judgment, values and insights. Knowledge of this type is not easily replaced. However, some of the tools and techniques, like mentorship, a knowledge repository – if well utilized – could prevent the loss of crucial knowledge from leaving the organization.

In an era when knowledge and information are considered essential strategic tools for enhancing performance, the emphasis on the conscious management of these intangible assets is crucial in facilitating the achievement of the KM-associated benefits.

The following conceptual model, illustrated in Figure 5-1 presents the factors recommended as fundamental in adopting successful KM initiatives.

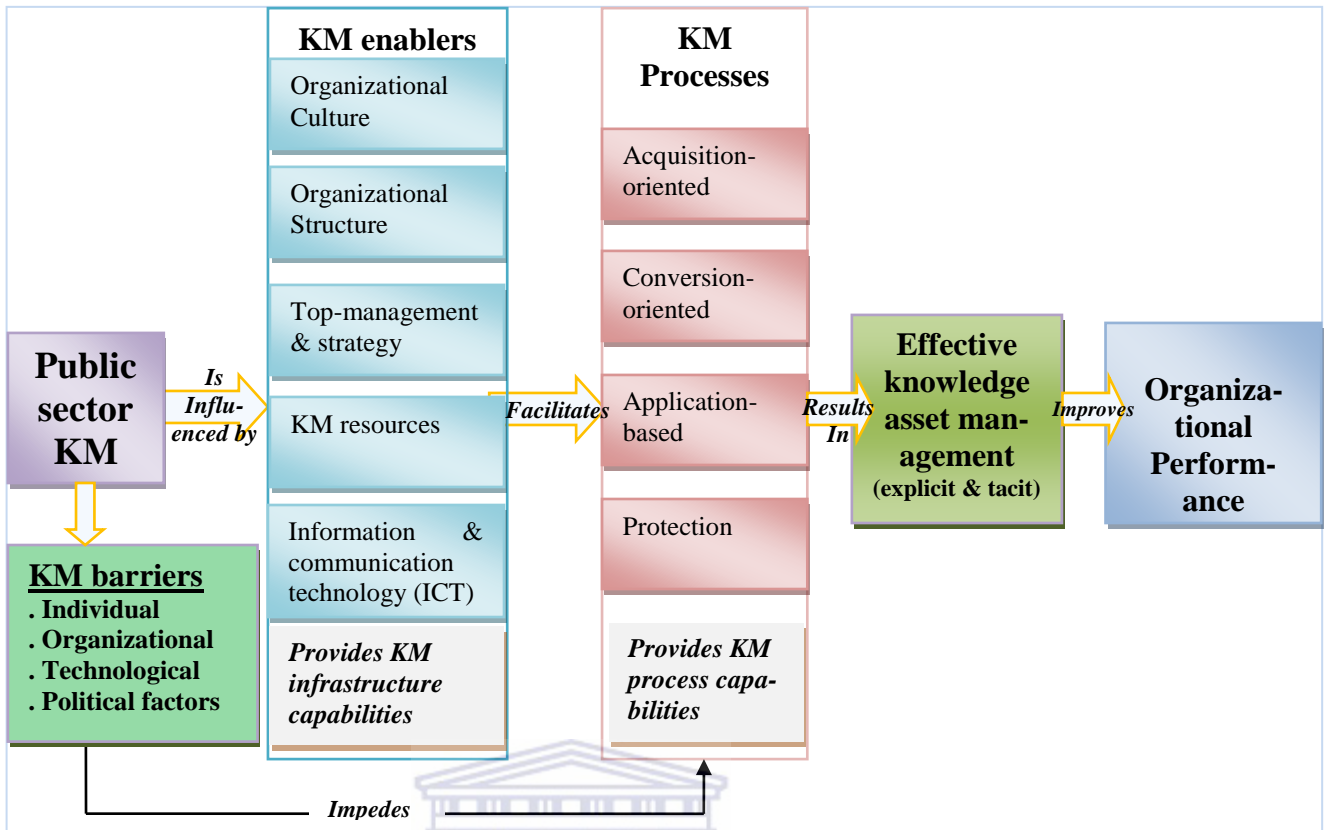


Figure 5-1: The final proposed KM framework based on the study's outcome

(Source: Author)

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CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The main objective of this study was to empirically investigate the critical factors that influence knowledge-management's effectiveness within organizations, which in turn, would have a positive influence on the overall performance of the organization. The purpose was to answer the main question of whether the public sector in the WHD is practising KM. This was to be done by investigating the presence of KM enablers, processes, barriers and benefits. KM enablers are considered as KM success indicators from various sources in the literature that provide a KM environment for KM processes to occur.

To achieve this, the following objectives were addressed:

- Determine the factors that influence the poor management of knowledge in the WHD health-infrastructure projects;
- Establish if there exists a KM policy or strategy supporting KM practices in the WHD;
- Identify the factors that would motivate the adoption of knowledge-management in the WHD;
- Determine the enablers and barriers that influence the effective delivery of KM;
- What KM processes are considered essential in transforming knowledge into valuable organizational asset?
- Identify the tools/techniques that can be utilized for knowledge-acquisition, conversion, application and protection in the directorate;
- Investigate the potential benefits of implementing knowledge-management practices in the WHD;
- Recommend KM strategies for improving hospital-infrastructure delivery – based on the findings of the study.

6.2 The factors that influence the poor management of knowledge in the WHD health-infrastructure projects

The WHD is a knowledge-intensive division in the possession of knowledge assets that if well managed could contribute immensely to the efficient delivery of health infrastructure. These knowledge assets can be broadly categorized as tacit knowledge and explicit knowledge. A

structured way of managing knowledge is lacking; and as a result, the WHD is faced with challenges relating to the delivery of new infrastructure, along with the upgrading and maintenance of the existing hospital infrastructure (Van Wyk, 2007).

These challenges include, among others, project-management, communication flow, staff turnover, institutional knowledge, scarce skills and comprehensive ICT.

Every construction project is a unique endeavour to produce a large body of knowledge that can be shared and re-used in the construction organization in association with projects broadly (Egbu, 2004). To improve project performance, therefore, requires employees to share and use best practices, lessons learned, experiences, and insights – along with the construction of new knowledge (Krogh, 2002). An organisation's ability to innovate and implement continual improvement is based on the capacity to share and utilize its intellectual capital (Egbu, 2004).

6.3 Establish if there exists a KM policy or strategy supporting KM practices in the WHD

In the literature, a successful KM strategy allows an organization to differentiate between the different types of assets: which to develop; and which ones to abandon. It should give the ability to combine knowledge assets with other resources needed to create value (Teece, 2000). The study describes KM policy as equally essential in providing a guideline for the KM direction in an organization. A strategy or policy should be aimed to address the current needs, and to sustain the future knowledge needs of the organisation, in order to achieve its strategic vision.

6.4 Identify the factors that would motivate the adoption of knowledge-management in the WHD

The question pertaining to the drivers of KM is addressed in 2.3 of the study. The following three main reasons were identified as driving the directorate, in order to achieve best practices and leverage information and knowledge:

- Successful KM can lead to various positive impacts within the organisation. One of the driving forces is to foster teamwork, since this plays a significant role in attaining most of the organization's goals. Encouraging team work can lead to employee learning, and hence improved individual performance, which in turn, can be directly or indirectly linked to improved organizational performance.

- The loss of lessons learned from projects every time a project is completed. Being in a position to leverage this expertise knowledge would mitigate the risk of losing it; and it would also reduce the cost incurred in improving hospital design every time a new hospital needs to be built.
- The reduction of duplication of efforts between directorates and units is another significant factor motivating the establishment of KM practices. The designing of new hospital blueprints every time a new design is needed drives the organization to incur monetary and time costs. The knowledge from the past could help to improve the future performance within a department.

6.5 Determine the enablers and barriers that influence effective KM in the WHD

This objective was met by examining the literature related to KM-influencing factors that involved both enablers and barriers. Several KM enablers were found to be critical to the effective use of KM in section 3.3. This study was based on the premise that KM enablers provide an organization's infrastructural capability. The key-enabling factors, like organizational culture, structure, KM strategy and leadership, KM resources, and ICT all have a positive influence on KM practices. However, the research findings indicate that only organizational culture, ICT, top management, KM policy and KM-resource factors are considered to foster KM practices, and thus facilitate the improvement of health infrastructural delivery within the context of the public works sector.

Enablers, such as organizational structure, were hardly mentioned – although some participants pointed out that poor communication flow that is closely related to organizational structure that was blocking the channels of communication in the organization. These factors should be explicitly noted in an organization, because they not only support knowledge acquisition and conversion, but they also promote its application – along with enabling a secure environment for protecting it.

Some of the conditions in the directorate at present are not encouraging KM to thrive. Most of the barriers reported by participants are the ones commonly highlighted in the literature review in section 3.4 of the study. The common themes extracted from the empirical findings (as discussed in section 5.12) are grouped in to three groups, namely: individual, organizational and technological barriers.

In regard to individual barriers, the lack of trust was underlined as a major barrier to knowledge-transfer between individuals. In section 3.3.1 of the literature, trust was highlighted as being pivotal to knowledge-sharing. However, it is clear that within the present institutional context, a lack of trust exists among the managers – preventing them from sharing what they know. Some managers believe that trust exists only when knowledge has to be shared on a need-to-know basis. The participants attribute this problem to the management who have failed to highlight the significance of knowledge-sharing.

The next group of barriers to organization-oriented KM, namely: training, time, incentives and rewards, and knowledge-retention. The department allocates significant resources for user training, but a similar level of support is lacking in the KM unit. Evidence of this was found from the manager's lack of consistency, when describing the knowledge-management concept and its meaning to the department.

Time is said to be a “key enemy of KM”. Many difficulties are compounded by the time factor, because staff members spend most of their office time executing routine daily activities that must be completed, in order to meet the department's public-service obligations. Time, as a resource, has inhibited the gathering of lessons learned from projects as well. Whether it was a shortage of staff in particular areas, or whether staff had just been transferred in and were attempting to negotiate a steep learning curve, there was a real dearth of resources and of time to build knowledge-assets.

Research indicates that a combination of performance-based monetary incentives and non-monetary incentives and rewards are significant in fostering a culture of knowledge-sharing in organizations. Promotions, or any other monetary incentives in the directorate, are not based on the individual's ability to share knowledge. For those who share knowledge, as part of their daily work, none acknowledged any form of recognition of the time spent in knowledge-creation, sharing and distribution. The managers were positive about the trust and concern amongst individuals when sharing knowledge; but this was limited to the activities that are directly linked to the delivery of health infrastructure, and not to the issues that had to do with sharing individual expertise with colleagues.

The WHD is faced with an unprecedented number of potential retirees, particularly in the engineering fields. These employees are highly specialized, and the challenge to replace them is made more difficult by the stiff competition from the private sector.

ICTs are viewed as enablers of KM in the directorate. The department has invested heavily in various systems – with the aim of improving information-management. The first initiative was to implement KM systems to support document management, and to disseminate explicit knowledge. This was a way of making certain that information is obtainable in the form and at the time and place where it is required, in order to support decision-making processes. However, some systems, like dashboard, are free-standing; hence they lack the integration required for information-exchange; and users are forced to capture the existing information from other systems manually. Likewise, KM should be seen as a broader concept with its primary focus on utilizing the technical aspects, as well as the social aspects of KM.

A good organizational design is likely to foster inter-organizational collaboration and knowledge-sharing. The KM literature reveals that in order to reduce formal communication and bureaucracy, modern offices and layouts should be designed in such a way that the offices of professionals and executives are close to each other (Disterer, 2003).

Political changes emerged as a new barrier to the effective implementation of KM. Government organizations experience frequent re-organization as ministers and governments change – thereby leading to changes in management structures, responsibilities and roles. These might affect the KM policy already put in place, hence affecting the overall KM stability. The literature, therefore, favours the introduction of a KM strategy that can be aligned with the organization's long-term goals.

6.6 Explore the KM processes essential for transforming knowledge into a valuable organizational asset

The literature presents an array of activities proposed in different KM system models (as discussed in section 3.4). Through research, this study has identified specific KM processes significant in transforming knowledge into a valuable organizational asset. These processes involve the acquisition, conversion, application and protection of knowledge. The first step considered in the implementation of KM in infrastructural delivery is the acquisition of information and knowledge from experienced government managers and consultants, as well as the documentation of the best practices and lessons learned from projects.

This can be facilitated by building formal networking programmes, such as communities of practice.

Knowledge-conversion processes are important in ensuring that the existing knowledge is useful. Knowledge, after some time, becomes obsolete; and therefore, an organization needs to integrate the existing experience and expertise knowledge from many individuals, in order to maximize efficiency. To do this, certain rules and sequencing should be followed, along with promoting problem-solving and decision-making. Also, knowledge can be stored in a knowledge repository pending its sharing among different entities.

Knowledge-application processes comprise those activities that promote knowledge-use, such as transfer, dissemination and sharing. Effective KM requires an organization to identify mechanisms for making the existing experience and expert knowledge known and used among its employees. An organization can utilize such activities as mentoring, training, coaching, communities of practice (CoP), after-action reviews, creating a knowledge map, job-shadowing programmes, meetings, exit interviews, and process documentation (as discussed in Chapter 3).

Knowledge-protection involves mechanisms utilized by an organization to protect institutional memory, and to safeguard it against damage, abuse, or deterioration. An organization can utilize common instruments, such as copyrights, licensing, and barring access, in order to prevent knowledge from falling into undesirable hands. In addition, an organization can make use of a tracking device attached to computers to notify the management of any information and knowledge misuse.

6.7 Identify tools/techniques that can be utilized for knowledge-acquisition, conversion, application and protection in the directorate

When staff members retire, organizations face the loss of key intellectual capacity and the loss of institutional memory considered crucial for solving problems. Many public sector organizations are now facing this challenge. Some appropriate tools/techniques applied by organizations to prevent the loss of crucial knowledge were discussed in section 3.4. The research also indicated that organizations should identify specific strategies to acquire, store, and transmit institutional memory – often vested in their most experienced employees – and to protect it from leaving.

Even though some of the techniques for transmitting tacit knowledge are not formally recognized as KM techniques, the organizations have a responsibility to formalize

programmes such as *Mzashaki isizwe*, or on-the-job training. Many organizations have formed CoP, special task forces, and coaching – to mention but a few.

6.8 Investigate the potential benefits of implementing knowledge management practices in the WHD

The benefits derived from managing knowledge effectively were firstly identified from the literature and discussed in Chapter one. This was followed by asking government officials about their perception on the potential benefits to be expected from the effective use of KM. The study indicated that saving the knowledge of employees who leave and protecting strategic information from leaving the organization would be highly beneficial.

6.9 Recommend KM strategies for improving hospital infrastructure delivery based on the findings of the study

If KM is to be successful, an organization should consider establishing an encouraging environment. Friendly culture is important in promoting trust, collaboration, learning, and knowledge-sharing. Even though organizational structure was barely mentioned during the interviews, the literature and the researcher propose that knowledge-friendly structures should be put in place. This means that the structures should support creation and sharing processes, and individuals should understand their role and significance in the whole. Top management is necessary to offer vision and drive for KM activities.

This, however, is not all that is essential. KM requires, firstly, creating enough awareness with regard to KM practices, ensuring that the practice is understood and accepted. This process should be led by a recognised KM strategy or policy. Secondly, KM resources are crucial – especially in people who are recognized as carriers of knowledge and the drivers of all processes and activities. Additionally, a dedicated budget for KM practices should be set aside to cater for KM activities and their improvement. Thirdly, ICT is an essential enabler of KM, since it facilitates easy information and knowledge capture, storage, retrieval, transfer and sharing across organizations, between organizations and national boundaries.

Managing knowledge is not straightforward; it is impeded by a number of barriers, generally identified as: individual, organizational, technological and political. These barriers should be acknowledged and eradicated accordingly, in order boost KM processes. If the above discussed key KM conditions are met, the overall purpose of leveraging knowledge for

innovation, decision-making, and ultimately for improving health-infrastructure delivery can be achieved. The following model (illustrated in Figure 6-1) presents the factors recommended as fundamental in adopting successful KM initiatives.

6.10 Recommendations for the WHD

Based on the literature review and the empirical findings, the study suggests a number of recommendations:

Creation of more awareness regarding KM: When asked about their understanding of the term KM, the majority of government managers defined it as information-management. Although the findings also showed that there are pockets of good KM practices, such as the utilization of technology and mentorship programmes, there is also a need for the creation of more awareness regarding KM, through the sharing of best practices and lessons learned in earlier models for the delivery of infrastructure in the public sector.

Better defined and communicated KM portfolio: One of the fundamental challenges to establishing effective KM practices originates from the employee's uncertainty about the real meaning of KM, along with the potential individual and organizational benefits to be derived from it. The portfolio of the profile of KM needs to be better defined and better communicated to employees in general. The KM portfolio is currently handled by an external library team; but an internal team needs to be established in the department. This barrier could be avoided by creating a definitive KM programme: the appointed KM champion should manage the KM programme effectively by initiating education or training for staff at all levels, in order to entrench KM practices and promote more awareness.

Create and implement appropriate policies: The interviews revealed that most government managers acknowledged the existence of a KM policy, while a reduced number did not; and a few knew nothing about it. Having a well-defined KM policy is crucial for any organization embarking on KM initiatives. Given that KM is not an end in itself, but rather a means to realizing organisational goals, then a KM policy or strategy should be designed to help meet the short-term objectives to reach the long-term goals.

Create the right environment for KM: Implementing a clearly defined KM policy/strategy is essential; but equally significant is the creation of the right kind of environment to facilitate the effective implementation of KM. This environment is created by taking into account the

enablers and processes required in laying down a solid foundation for KM initiatives. Barriers to the effective use of KM tools/techniques should be removed; and KM should be built on enablers. Some of the recommended suggestions in this regard are associated with the social aspect of KM, as follows:

- ***Top-management support:*** The support from top management is critical and must be visible.
- ***Design and implement an incentive programme:*** The KM caretakers should design an incentive programme for knowledge-sharing aimed to encourage people to share their knowledge. This would probably alleviate employees' tendencies to hoard information. It is important to provide benefits for staff who participate actively in knowledge processes.
- ***Training programmes:*** The department ought to design training programmes and workshops that are geared towards building the KM capacity of the public sector. Employees should be educated to abandon the belief that the knowledge they possess belongs exclusively to them, and a culture of passing on expertise and experience needs to be cultivated.
- ***Employ people with adequate skills:*** The public sector should create positions for people who will be directly responsible for KM in the directorate and across units.
- ***Link KM to the organisational goals:*** Managers should create a clear, tangible picture of the benefits of KM, as they relate to the organisation's specific goals and other circumstances.
- ***Dedicate human resources to KM:*** A dedicated team should be assigned the task of ensuring that the lessons learned from projects and through the normal public sector operations are documented and safely preserved for future use.
- ***Dedicate financial resources to KM:*** The budget from the department should adequately cater for KM programme financial resources. Particularly, the KM unit should have a dedicated budget allocated to it; and ultimately, this should be the subject of conscious decision-making.
- ***Align technologies:*** It is important to examine the existing technologies in the department, and see how they could be exploited better to support KM processes. Funding makes it difficult to acquire new technologies in the public sector; but looking for ways – like integrating the systems – to avoid the re-invention of tasks should be considered.

- **List and understand current KM activities:** KM processes are likely to thrive in any KM-enabled environment – by putting in place policies and strategies to enhance the processes of knowledge-acquisition, conversion, application and protection. In the WHD there exist some examples of good KM practice, such as the *Mzashaki isizwe* programme, mentorship, the sharing of knowledge on a need-to-know basis, and interviewing process; except that they are not usually thought of as KM activities. It is, therefore, important to search within the organisation for current activities that might already be related to KM – even if this is part of the simple daily activities – and then to use them as a starting point.
- **Introduce adequate measures for retaining knowledge:** The government managers expressed their fear on the lack of proper measures to prevent knowledge from leaving their organisation. To address the issue of skills loss, it may be important for the directorate to consider having a centralized knowledge repository – on which employees could publish interesting ideas, design, knowledge and share with colleagues across the organization. The project knowledge of WHD is kept in two discrete areas: explicit knowledge deliverables are kept on servers; and the tacit knowledge and experience gained in projects remains in each project team member's memory. Keeping project deliverables, that is, drawings, plans and more does not capture the tacit knowledge of the projects. The existing repository for the storage of electronic drawings is not very well co-ordinated; and consequently, this requires further consideration.
- **Appropriately manage communications:** One of the key issues the directorate has to deal with is the management of communication and the massive volumes of information generated in the course of infrastructural delivery activities. It is essential to create a repository of various retired employees with an expertise in that domain, in order to regain that knowledge rather than rebuilding it by using other means.

Other means of KM: In addition, the organization should consider establishing other techniques for preserving knowledge (as suggested in Chapter 3.4) such as communities of practice, storytelling, after-action reviews, knowledge map, and job-shadowing programmes among others. Also collaboration tools, like social networking and online discussion forums play an important role in the exchange of tacit knowledge.

6.11 Contributions of this study

This study's findings add to the extant KM research – beneficial to both the public sector and academic communities. This study identified the following:

- The KM drivers applicable to the particular empirical setting of this study;
- The enablers and barriers that might help or hinder KM in the researched organisation (and possible similar organisations);
- The recognized essential areas for improvement of KM practices in the researched organisation;
- This study could be used for further encouragement of KM in this and similar organisations;
- This study has also explored and provided a better understanding of the internal mechanisms necessary to leverage internal resources to develop and implement a KM-enabling environment in this and similar public sector organisations;
- The findings of this study could also indicate how KM could be beneficial to service delivery to citizens and also to organizational performance.

This study contributes to both academic researchers and public-sector organizations in three ways. *Firstly*, it leads to a better understanding regarding the current status of KM's implementation and readiness to allow and implement KM practices. *Secondly*, it explains the drivers, enablers and processes associated with KM practices in South African government organisations. Finally, some of the potential benefits derived from successful KM initiatives have been highlighted.

6.12 Limitations of the study

Even though the data for the study were very rich, and measures were taken essentially to address any limitations to the study, a number of issues were identified that call for further examination. The following limitations were determined:

- As described in Chapter 4, one of the limitations of this study is that the sample was limited to nine interviewees, which was caused by the studied department's internal decision regarding the number of available participants. This study focus is on the WHD use of KM practices and principles to enhance the delivery of health infrastructure, in order to meet the client's (DoH) mandate. The findings from the

research, therefore, are directly applicable only to the WHD; but they might be relevant to other similar organisations.

- The small sample limited the possibility that the results could be generalized beyond the specific population from which the sample was drawn without conducting further research. The generalization from a single directorate setting to the entire government service may be questionable. Thus, the results of this study may have to be carefully interpreted, before being applicable to different contexts.
- The questionnaire initially designed to gather quantitative data was not used as a result of the poor response rate. It would be beneficial to widen the study in future to incorporate additional levels of staff, because government managers might have perceived things from a narrow view, and might possibly wish to put a positive spin on their units. Some of the questions may be answered subjectively, according to the respondents' interpretation of the situation – thereby resulting in skewed results.

It is, however, important to state that these limitations did not influence the validity of this study and its contributions.

6.13 Recommendations for future research

Since it is difficult to draw generalizations from an isolated study of a single directorate, that could be usable for other similar directorates in the public sector, for future research, it is recommended that this study be replicated through several other directorates or even departments at various government levels (e.g. national, provincial, or local).

It is also recommended that quantitative analysis, together with qualitative analysis, be used to create a triangulation of the two approaches. While the researcher believes that the interviews were undoubtedly informative, a complementary survey would have provided the opinions of a wider audience – and hence provide support for the research methods used.

This study generated some interesting results, believed to be consistent with most of the prevailing research on this topic (Davenport *et al.*, 1998; Moffett, 2003; Riege, 2005; Yeh *et al.*, 2006; Cong *et al.*, 2007; Ho, 2009; Anantatmula & Kanungo, 2010). However, the study underlined some areas that require further examination pertaining to KM enablers and processes said to have a direct influence on the success of KM.

One of the enablers requiring further investigation is organizational structure. This enabler was not recognised from the empirical findings as being important. Another area that needs to be explored further is the political factors, such as political changes, ethical-code behaviour, and command and control that emerged as barriers to knowledge-transfer. On this note, more study needs to be done to ascertain how KM success is affected by their existence.



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APPENDICES

Appendix I – Introduction letter from the supervisor



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11 October 2011

Dear Sir/Madam

To whom it may concern

Ms Lydiah Kimani

This is to confirm that Ms Lydiah Kimani is a registered Masters student at the Department of Information Systems, University of the Western Cape.

As Ms Kimani is currently collecting data for her study titled "Knowledge management in the public sector: its role in facilitating the delivery of health infrastructure", your assistance would be greatly appreciated.

I shall be pleased to provide any additional information that might be required.

Sincerely,

Dr Zoran Mitrović

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Appendix II – Interview questions

<p>Section 1: Managers’ background information</p>	<p>What is your level of education? What position do you hold in the department? How long have you worked in the department? What division/unit are you working under?</p>
<p>Section 2: Knowledge-management awareness</p>	<p>What is the main purpose of the unit?</p> <p>What are the key functions/work processes performed in the unit?</p> <p>What are the knowledge and skills needed to perform these functions/work processes?</p> <p>What tools are used to assess and determine that the functions/work processes are properly performed and that the knowledge requirements to perform the tasks are met?</p> <p>What do you understand by the term ‘knowledge-management’?</p> <p>Has your organization adopted KM practices?</p> <p>If yes, what are the reason(s)?</p> <p>What knowledge-management practices are there in the directorate?</p> <p>What are some of the knowledge-management benefits that you have identified in the directorate?</p>
<p>Section 3: Investigating factors enabling or hindering knowledge-management in the directorate</p>	<p>What factors influence knowledge-management in your organization?</p> <p>What do you think are the major barriers for sharing knowledge in your organization?</p>
<p>Section 4: How knowledge-management can be implemented effectively in the directorate</p>	<p>What strategies are there for effective knowledge-sharing?</p> <p>How do you ensure that your employees have the relevant knowledge to carry out their tasks?</p> <p>How does the organization ensure that this knowledge is adequately captured and utilized?</p> <p>Are there programmes used to facilitate knowledge-transfer?</p> <p>What measures have been put in place to protect organizational knowledge from leaving?</p>

Appendix III – Screenshot of letter of introduction for the online questionnaire

Knowledge management in health infrastructure delivery

Determining the role of knowledge management in health infrastructure delivery

Knowledge management Survey

Dear sir/madam

My name is Lydia Kimani, a postgraduate student at the University of the Western Cape, working towards my master of information management (MIM) degree. I am conducting research for my thesis pertaining to knowledge management and its role in facilitating the delivery of health infrastructure. The outcome of this research will be beneficial to the department of public works, works health in several ways;

- it would provide valuable insight into the knowledge management pattern in the department,
- determine how knowledge management can be effectively implemented,
- establish the strategies for successful knowledge management,
- make suggestions and recommendations on how to enhance knowledge management practices.

I am kindly requesting you to spare a few minutes of your time to complete the questionnaire. Your participation in this survey is completely voluntary and your responses will remain anonymous. Survey results will strictly be used for the purpose of this research. Should you wish to read the summary of the results, copies will be made available to you.

Thank you for your participation.

There are 24 questions in this survey.

Appendix IV – The questionnaire in a word-processor format

- Knowledge management is the systematic and organized attempt to use knowledge within the organization to provide services to the public and to improve service.
Please tick the answer that best describes your personal details

PERSONAL INFORMATION							
Gender	M		F				
Age	Less than 26 years	26 - 30 years	31 - 35 years	36 - 40 years	41 - 45 years	46 - 50 years	above 50 years
Highest qualification	Doctor of Philosophy	Master's degree	Others (specify): _____	First degree / Equivalent		Diploma	
Current position	Director	Assistant Director	Manager	Assistant Manager	Administrator	Others (specify): _____	
Division / Unit	Engineering	Quantity Surveyor	Administration	Architecture	Supply Chain	Others (specify): _____	
Work experience	Less than 6 years	6 - 10 years	11 - 15 years	16 - 20 years	More than 20 years		
Number of years in the division / unit	Less than 1 year	1 - 3 years	4 - 6 years	7 - 9 years	More than 10 years		

- Please tick Yes or No in the box that best suits your response.

Questions	2 Yes	1 No
Does your organization have a formal knowledge management program in place?	Yes	No
If no, are there plans in place to introduce it?	Yes	No
If the answer is yes, then does your organization have a knowledge officer or any other person in similar position with the responsibilities of generating, distributing and leveraging the organization's knowledge?	Yes	No
Does the organization have a written knowledge management policy?	Yes	No
Is there a dedicated budget allocated to knowledge management program?	Yes	No

3. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factors would motivate my organization to implement or increase its knowledge management practices.

In my organization, knowledge management practices are motivated by:	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
Advances in information and communications technologies					
The shift from paper-based to electronic sources of information					
Pressure from client					
The need to identify and protect strategic knowledge in the organization					
The desire to promote professional satisfaction					
The desire to support and encourage a learning culture					
The desire to promote team work					
The desire to meet information and knowledge needs of the public servants					
Loss of key personnel and their knowledge					
The desire to improve decision making					
The need to improve efficiency in infrastructure delivery process					

What are some other factors that would motivate your organization to implement or increase its knowledge management practices?

4. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factor influences knowledge management practices in my organization.

Culture: In my organization ...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
overall organizational vision is clearly stated					
high levels of participation are expected in transferring knowledge					
knowledge sharing is a routine like any other daily work for employees					
employees are encouraged to interact with other groups					
employees are co-operative and supportive when requested for some information					
Knowledge sharing among employees is seen as a strength					
senior management clearly supports the role of knowledge in our organization's success					
managers actively encourages employee to capture lessons learned					
individuals are visibly rewarded for sharing knowledge					
directorate has a monetary incentive system aimed at speeding up employees performance					
the management motivates staff to share knowledge by building trust					
employees are encouraged to ask others for assistance when needed					
Employees are encouraged to use others' knowledge to solve daily work problems					
experts 'contributions are recognized					

5. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factor influences knowledge management practices in my organization

Organization Structure: In my organization ...	1	2	3	4	5
--	---	---	---	---	---

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
structure*3 of divisions and units inhibits interaction and sharing of knowledge.					
structure facilitates the discovery of new knowledge					
structure allows smooth communication flow within directorate					
there is a standardized reward system for sharing knowledge					
the flow of information in the Directorate fosters innovation					
Strategy					
Top management recognize knowledge management as an important part of the organization strategy					
The directorate has a clear knowledge management strategy regarding organization's knowledge assets					
There are defined responsibilities for knowledge management initiatives					
experts 'contributions are recognized					

6. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factor influences knowledge management practices in my organization

People resource:	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
The directorate have a structured human resource policies regarding knowledge management					
The organization encourages experienced workers to transfer their knowledge to new or less experienced workers					
The directorate provides formal training related to knowledge management practices to employees					
The organization provides informal training related to knowledge management					
The organization uses formal mentoring practices, including apprenticeships					
The organization offers off-site training to workers in order to keep skills current					

7. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factors indicate the significance of lessons learned from the projects

Lesson Learned: In my organization ...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
at the end of each project, we evaluate what can be/has been learned from the project					
at the start of each project we decide which experiences from other projects are relevant for application in this project					
at the end of each project phase we evaluate what can be/has been learned from this phase					
there are formal learning goals on which projects have to be evaluated					
the stored knowledge is used for improvement of other projects					
in case of parallel projects knowledge and experiences are exchanged actively					

3 * structure is defined as the rules, policies, procedures, processes, hierarchy or reporting relationships, incentive systems, and departmental boundaries that organize tasks with the directorate

there are procedures that force a project team to define learning goals from the start of the project	1	2	3	4	5
exchange of experiences between project managers is organized					

8. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factors indicate how knowledge is created in my organization

In my organization, new knowledge is created through...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
capturing knowledge obtained from clients, citizens					
using lesson learned obtained from projects, clients					
encouraging employees to participate in project teams with other					
attending conferences					
attending workshops					
writing internal reports					
accessing databases					

Please specify other ways in which knowledge is created in your organization

9. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The following factors indicate how knowledge is stored in my organization

In my organization, knowledge is stored in...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
Knowledge repository					
Filing cabinets					
e-registry					
Knowledge stored in knowledge repository is easily accessible					
Knowledge stored in knowledge repository is easily not accessible					

Please specify other tools used for storing knowledge

10. Based on a five point pre-coded scale described as: 1=Strongly agree, 2=agree 3= disagree 4= strongly disagree 5 = I have no opinion
Please tick the category of the column that best describes your degree of agreement or disagreement. The knowledge transfer process in my firm occurs in the following ways

In my organization, knowledge transfer occurs through...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
team work					
discussions of major projects after conclusion (debriefing)					
informal social net working of employees to exchange views					
organizing formal meetings					
the intranet					
alliances with professional associates					

Please specify other ways in which knowledge is created in your organization

The knowledge sharing process in my firm occurs in the following ways

Knowledge sharing: I feel that ...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
my organization has a sharing culture					
I have time to chat informally with other colleagues					
my organization conducts events and provides time in which ideas and experiences may be shared					
the organization's layout and design is conducive for discussing with colleagues					
my organization uses intranet sites to share knowledge					
my organization provides opportunities for regular meetings					
my organization provides opportunities for formal and informal social networking of employees					

Please indicate other ways of knowledge transfer in your firm

The following are some of the mentoring opportunities in my organization

Mentoring: My organization...	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
encourages employee to further their education					
encourages employees to attend training	1	2	3	4	5
provides professional development programs					
hires and trains graduates					

Please indicate other ways of mentoring in your organization

The following are some of factors that promote knowledge management in my organization

	1	2	3	4	5
	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
There is monetary and non-monetary rewards for sharing knowledge					
There is special recognition of staff for the time spent in knowledge creation sharing and distribution					
Promotions are based on the ability to share knowledge					
Mutual respect, trust, care and concern amongst individuals					

Please indicate other ways of mentoring in your organization

Thank you for taking your time to fill the questionnaire.