Quality Knowledge in Regional Economic Communities –
applying the KMDL to a case study in COMESA

by

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DECLARATION:

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OPSOMMING

Hierdie tesis benut die KMDL model om die gevallestudie van COMESA te ondersoek met die doel om te bepaal tot watter mate daar kennisgapings in die organisasie voorkom en hoe dit beter bestuur kan word.

SUMMARY

This thesis covers the following chapters

Chapter 1: The Question of Knowledge in a Regional Economic Community

This chapter focuses on the research objective, the problem and also includes the detailed research approach.

Chapter 2: Theoretical Considerations and the KMDL

The focus in this chapter is on an introduction and discussion of the theoretical tools and concepts guiding the research.

Chapter 3: The Case Analysis

This chapter focuses on modelling of knowledge flows through the application of the KMDL theoretical construct. It results in the generation of a knowledge flow model.

Chapter 4: Presentation and Discussion of the Findings

This chapter focuses on the presentation and discussion of the findings of the case analysis supported by the theoretical and related concepts of quality knowledge.

Chapter 5: Aspects of the Quality Knowledge Gap

This is the final chapter of the thesis; it presents the findings, makes recommendations and concludes the study.

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Chapter 1

The Question of Knowledge in a Regional Economic Community

1.1   RESEARCH OBJECTIVE

The "organisation" as a key component of economic activity has evolved over the years as the needs of both the business owners and the consumers have changed. According to Chester Bernard, a guru of the school of management, an organisation is a system of consciously coordinated activities or forces of two or more persons[1]**.** Bernard, intended for this definition to encompass all such systems, including military, fraternal, religious, academic, business or whatever irrespective of variations in terms of physical or social environment, number and kinds of members, or the natures activities[2]**.**

Notwithstanding the evolution of the organisation throughout history, the basic principles of the entity remain; for an organisation to exist there needs to be a goal, a purpose, an objective, or something to be accomplished[3]. An organisation therefore in any form exists to achieve the objective for which it was established.

As vehicles for developmental change, Regional Economic Communities (RECs) also referred to as Regional Integration Organisations (RIOs) emerged as the need for enhanced development interventions became more pronounced around the world. In Africa, the emergence of the global economy in the nineteenth and much of the twentieth centuries ,

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[1] Wren DA & Bedeain AG. 2009. The evolution of management thought.

[2] Wren DA & Bedeain AG. 2009. The evolution of management thought.

[3] Wren DA & Bedeain AG. 2009. The evolution of management thought.

presented both challenges and opportunities for economic growth and development prospects[4]. In an effort to expand economies of scale and reap the benefits of inter-regional economic activities, African countries forged cooperation agreements facilitated by regional economic communities. Economic communities were therefore established to foster cooperation and political and economic integration among member countries[5]. The overall goal of the regional economic communities is to facilitate social and economic development. In doing so, the regional economic communities run various sectoral programmes and projects in addressing specific areas which include trade, investments, agriculture and infrastructure to mention a few.

In an effort to establish more meaningful and coordinated integration among African countries, a Treaty for African Economic Community also referred to as the Abuja Treaty was signed in 1991 and came into force in 1994[6]. The aim of the treaty is to establish a continent wide economic cooperation by strengthening the existing regional economic communities across the continent so as to bring about concrete and tangible results. To this effect, eight (8) regional economic communities were identified as the main building blocks of the continent wide initiative namely; the Arab Maghreb Union (AMU), the Common Market for Eastern and Southern Africa(COMESA)[7], the Community of the Saharan-Sahel Region (CEN-SAD), the East African Community (EAC) the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS), the Southern African Development Community (SADC), and the Intergovernmental Authority on Development (IGAD)[8].

In efforts to fulfil the objectives for which they are established, organisations have long recognised the role of knowledge in facilitative processes. Accordingly, the Nolan Norton Institute states that we have to face the fact that our organisations and our economies are becoming more knowledge intensive and that knowledge is of strategic importance to services

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[4] At what point in history did the global economy start to develop? https://www.reddit.com/r/AskHistorians/comments/14w07k/at_what_point_in_history_did_a_global_economy/ accessed 2015/8/10.

[5] Regional Organisations. http://en.m.wikipedia.org/wiki/Regional_organisation accessed 2015/03/9.

[6] Geda A & Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

[7] COMESA member countries include: Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Ethiopia, Eritrea, Kenya, Libya, Malawi, Madagascar, Mauritius, Rwanda, Swaziland, Seychelles, Sudan, Uganda, Zambia and Zimbabwe.

[8] Economic Commission for Africa. 2012. Assessing regional integration in Africa: Towards an African continental free trade area.

and products[9].

Similarly to other organisations, regional economic communities require knowledge if they are to develop services and products in the form of programmes and projects that adequately serve the needs of their stakeholders. Accordingly, the African Capacity Building Foundation states that above all, to be successful, African sub-regional and regional integration arrangements need to embrace a knowledge-based development strategy[10]. In establishing knowledge-based development strategies, regional economic communities require knowledge that is of quality if they are to remain relevant and ensure sustainability in the development work undertaken.

This thesis therefore broadly focuses on the modelling of knowledge flow processes within organisational structures in regional economic communities with the aim to determine the effect of such flows on the quality of knowledge.

Specifically, this thesis investigates factors inherent in knowledge flow processes and the resulting impact on quality knowledge in a project implemented by COMESA.

1.2   THE KNOWLEDGE PROBLEM IN REGIONAL ECONOMIC COMMUNITIES

The diversity and complexity of regional economic communities presents unique challenges particularly as it relates to the generation and application of quality knowledge. Similarly to other organisations, knowledge has emerged as a critical resource for the development and execution of various interventions particularly projects. According to Nonaka, any organisation that dynamically deals with a changing environment ought not only to process information efficiently but also create information and knowledge[11]. The systematic management of an organisation's knowledge is therefore essential for the purpose of creating value and meeting tactical and strategic requirements[12].

According to Powell and Ferguson in Hulsebosch et al, knowledge management is important for the development sector owing to the following;

- development is a process which involves change for the better, which in turn involves people doing things differently. Development is fundamentally a knowledge industry

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9   Nolan Norton Institute. 1998. Putting the knowing organisation to value.

10 African Capacity Building Foundation. 2004. Africa's search for regional cooperation and integration in the 21st century.

11 Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

12 Knowledge Management. http://www.knowledge-management-tools.net/knowledge-management -definition.html accessed 2015/6/6.

- development organisations work with external multiple stakeholders. Knowledge exchange and mutual learning is crucial
- the development sector is characterised by power inequalities. Mutual learning can contribute to overcoming such inequalities[13].

In executing development work through various programmes and projects, regional economic communities in addition to the above characteristics of knowledge management in the development sector, are affected by unique factors which make managing for quality knowledge all the more complicated. A key contributing factor is the multiplicity of stakeholders that participate in the organisations. The multiplicity of stakeholders often present diverse and heterogeneous contexts that require to be comprehensively understood if the interventions are to be relevant and appropriate. Specific factors are as follows;

- dissimilar priorities for national development
- at country level, institutions leading the integration process may be inadequate
- organisation and structure of governments and law making bodies which determine the rate at which regional commitments are enacted into law through signature and ratification processes
- complex organisational structures and the myriad of participating stakeholders
- varying rates of infrastructure development particularly in transport and information communication technologies
- the need to adhere to cooperation agreements and procedures with development partners.

1.3   RESEARCH QUESTION – DETERMINING THE KNOWLEDGE QUALITY GAP

Having considered the challenges in effectively managing knowledge in regional economic communities, there is need to investigate the problem. The research will cast light on the factors that contribute to the gap in quality knowledge in regional economic communities. The unique factors outlined in the preceding section define the nature of information flows and impose unique demands on knowledge facilitation that raises the level of difficulty in obtaining quality knowledge.

The following explicates the challenges unique to regional economic communities that contribute to the gap in quality knowledge;

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[13] Hulsebosch J, Turpin M & Wagenaar S. 2009. Monitoring and evaluating knowledge management strategies.

Firstly, countries participating in regional economic communities are characterised by diverse contexts politically, institutionally, socially, culturally and economically. What is appropriate, easily understood and can be adequately supported by the context of a particular country may not be in another country setting. This presents a challenge in coming up with interventions that are relevant for all countries at a particular time. As a result, the uptake of project interventions is affected.

Secondly, regional economic communities are unique in the sense that a group of respective governments of participating member countries cooperate in the development and implementation of regionally oriented interventions. These play a significant role as they determine the rate at which regional commitments are enacted into law through signature and ratification processes which are a pre-requisite for implementation. The rate at which regional commitments are adhered to and actualised translates into the political willingness of participating governments. This may vary depending on the priorities which member countries deem are important for economic growth and development. The differentiation in political will therefore raises the difficulty in establishing and maintaining consensus for mutually agreed action.

Thirdly, formulation and implementation of regional interventions is undertaken by a number of stakeholders at various levels. The complex organisational structures are usually comprised of coordinating and line ministries, expert/technical committees, consultative committees and high level government committees to mention a few. The organisational structures are often facilitated and coordinated by a secretariat. The interaction of these variables in activities that involve planning, review, decision making and implementation results in the generation of knowledge at various levels of the organisation. The complex organisational structures consequently affect knowledge input and output intervals which possibly compromise the quality the knowledge.

Fourthly, the multiplicity of stakeholders and structures involved in the implementation of regional interventions, poses a challenge for the compilation and consolidation of knowledge for the purpose of organisational learning. Learning by doing supported by knowledge is critical for regional economic communities as it enhances capabilities for formulating and implementing interventions that contribute to organisational performance.

Fifthly, the practice of integration is complex and intricate requiring a high level of capacity at individual and institutional level so as to effectively perform functions, solve problems and

achieve objectives. For the advancement of regional integration, this is especially important for institutions at member country level as they are required to implement and execute interventions made at the regional level. Without the right level of capacity, institutions are not able to effectively assume expected roles and responsibilities in support of the overall objectives of regional economic communities.

Last but not the least, in addition to internal stakeholders, regional economic communities are supported by external stakeholders notably development partners; the support rendered is mainly financial and/or technical. Therefore, in planning and implementation of projects, there is need to consider adherence of project modalities to cooperation agreements and procedures stipulated by development partners. This often results in extended durations of pre-project planning and inflexibility in implementation often affecting the quality of knowledge.

In view of the above challenges unique to regional economic communities that contribute to the gap in quality knowledge, the research through modelling will provide insight into how processes that are knowledge intensive in the organisations can be managed effectively to address existing gaps and give rise to desired results.

1.4   METHODOLOGY

The following methodology was engaged to investigate knowledge flows present in regional economic communities. The methodology allowed for an understanding of the effect of knowledge flows on the intermission and quality of organisational knowledge.

Step 1

The first step undertaken was the identification of an intervention developed and implemented in the complex organisational system of a regional economic community. To this end, a specific project was selected owing to its exemplification of the involvement of a multiplicity of stakeholders at various organisational levels.

Step 2

This was followed by the selection of a modelling tool to represent and trace information and knowledge flows within the project. The modelling tool was selected owing to its functionality which allows for the comprehensive modelling of organisational information and knowledge flows.

Step 3

The third step involved information gathering from existing documentation generated as a

result of the identified project's activities. The information gathered represented all the elements involved in the knowledge intensive business process of the project and was consolidated as input which fed into the modelling process.

Step 4

Interviews were held subsequent to the information gathering exercise with key persons who were closely affiliated with the project during the period of implementation. The purpose of the interviews was to confirm and verify the information consolidated in the preceding step.

In addition to the interviews, general assumptions were made by the researcher on knowledge quality issues relevant for the core functioning of a regional economic community.

Step 5

Having consolidated and confirmed the information representing elements of the knowledge intensive business process of the project under analysis in the preceding steps, the modelling exercise was executed. The modelling exercise involved mapping of knowledge flows present in the core perspective of the identified project. In doing so, the modelling exercise highlighted the co-dependency and interaction among the variables within the project which determined the information and knowledge flows and subsequently its quality.

As a result, a knowledge flow model was generated highlighting the key functions of the project and how these were supported and facilitated through the dynamics of knowledge conversion.

Step 6

To enrich the investigation of the research, through the attachment of meaning to the observed information and knowledge flows and the resulting impact on the quality of knowledge, a literature review was undertaken to learn theories and concepts on the description and characteristics of quality knowledge. In recognition of the unique set up of regional economic communities, concepts related to the quality of knowledge were identified to further enhance the interpretation of the findings.

The convoked interpretive theories supported an understanding of the effects of specific action on the quality of knowledge at various points in the knowledge intensive business process under analysis.

Step 7

Following the literature review, an analysis of the knowledge intensive process was undertaken. The analysis was supported by the selected interpretive theories to discuss the

findings of the modelling of knowledge flows within the context of quality knowledge and related concepts.

Step 8

Based on the analysis, recommendations were made on actions to support process improvements so as to address gaps and facilitate the creation of quality knowledge.

1.5   THE THEORETICAL FRAMEWORK FOR THIS THESIS

In an attempt to identify and understand knowledge flows in complex organisations specifically regional economic communities, the thesis employed a number of theoretical frameworks. Firstly, the Knowledge Modelling and Description Language (KMDL) theoretical construct was utilised owing to its provision of a procedural model and modelling tool to comprehensively capture and model organisational knowledge flows.

The KMDL recognises that goal oriented organisations are driven by business processes which lie at their core. These business processes are initiated through the interaction of knowledge types namely explicit and tacit knowledge. The KMDL theoretical framework therefore recognises that organisational business processes and knowledge conversions cannot be separated but should be viewed and analysed as part and parcel of an incorporated process in which they exist.

Use of the KMDL therefore resulted in the generation of a comprehensive model depicting knowledge flows within the core business perspective of a specific project of a regional economic community. The knowledge flows were inherent in the interdependent tasks undertaken to fulfil the overall objectives of the project.

In view of the above attributes of the KMDL, the research recognised that the KMDL functions as a tool to support modelling of organisational knowledge flows and the proposal of process improvements based on the generated model and data. To gain a deeper understanding of the underlying issues that determine organisational knowledge flows and have a bearing on the quality of knowledge as per the research question, the concept of quality knowledge was employed. The concept included characteristics and measurements that determine organisational knowledge quality. Use of the concept of quality knowledge supported an understanding and determination of the state of knowledge quality in the specific project under analysis.

Owing to the uniqueness of regional economic communities particularly due to the multiplicity of participating stakeholders, a number of concepts related to the quality of knowledge were

deemed necessary to further analyse and understand the gap in knowledge quality. The concepts related to quality knowledge include issues related to contextual factors, political will, time lag, feedback and resulting delays and capacity.

1.6   DELIMITATION OF THE THESIS

In view of the complexity of issues which surround and influence the workings of regional economic communities which include economic, social (demography and cultural) and geographical factors, the research focused on knowledge flows and the resulting impact on the quality of knowledge in organisational performance.

Further, a specific project on the basis of a case analysis was selected to investigate the complexity of knowledge flows innate in regional economic communities.

In addition, the thesis recognises that the project on which the research is based was undertaken during a specified time frame. The modelling undertaken therefore represents a reconstruction of a past activity; it does not distinctly represent modelling of an ongoing process.

Notwithstanding the fact that the findings of the research may not necessarily reflect the general trend in interventions formulated and executed by regional economic communities, the research assumed that the organisations are governed by similar predefined processes which determine how interventions are developed and implemented. The findings of the research therefore allow for reasonable generalisation to be made regarding processes which determine how interventions are developed and implemented in regional economic communities.

1.7   THESIS LAYOUT

The structure of the thesis is as follows;

Chapter 1: The Question of Knowledge in a Regional Economic Community

This chapter focuses on the research objective, the problem and also includes the detailed research approach.

Chapter 2: Theoretical Considerations and the KMDL

The focus in this chapter is on an introduction and discussion of the theoretical tools and concepts guiding the research.

Chapter 3: The Case Analysis

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Chapter 4: Presentation and Discussion of the Findings

This chapter focuses on the presentation and discussion of the findings of the case analysis supported by the theoretical and related concepts of quality knowledge.

Chapter 5: Aspects of the Knowledge Quality Gap

This is the final chapter of the thesis. The chapter presents the findings of the research, makes recommendations and concludes the study.

Chapter 2
Theoretical Considerations and the KMDL

2.1 INTRODUCTION

This chapter focuses on the theoretical tools and frameworks guiding the thesis. It includes the following; the theory and practice of economic integration on which regional economic communities are premised, the Knowledge Modelling and Description Language (KMDL) including the K-Modelling tool, the concept of quality knowledge and related concepts.

2.2 THE THEORY AND PRACTICE OF ECONOMIC INTEGRATION

As instruments for promoting economic growth and political stability in regions of the world, regional economic communities have a fairly long history. Linn and Pidufala[14], state that in the early decades after World War II, much of the regional cooperation among countries was driven by efforts to protect regional markets from international competition as was the case in Latin America. In addition, cooperation among countries was driven by the need to grapple with the fall out of decolonisation which led to disintegration of integrated colonial economic regions, especially in Africa[15].

Early European integration in the 1950's was politically motivated for the restoration of peace particularly after the 2nd World War[16]. The form of integration motivated for the restoration of peace, later concentrated on the economic aspects and benefits of regional cooperation[17]. In further discussing early European integration, Dinan, states that the launch of the European

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[14] Linn JF & Pidufala O. 2008. The experience with regional economic cooperation organisations: Lessons for central Asia.

[15] Linn JF & Pidufala O. 2008. The experience with regional economic cooperation organisations: Lessons for central Asia.

[16] Dinan D. 2007. Fifty years of European integration: A remarkable achievement.

[17] Dinan D. 2007. Fifty years of European integration: A remarkable achievement.

Economic Community (EEC) from which the European Union (EU) has its origins soon after the collapse of the Defence Community demonstrated the relevance of European integration but primarily for reasons having to do with international trade[18].

Similarly, African countries realised the need to establish home grown regional trading arrangements to assist in the quest for economic and social development. Geda and Kibret[19], state that regional integration initiatives in Africa have a long history dating back to the establishment of the South African Customs Union (SACU) which is the world's oldest customs union founded in 1910. Murinde[20], states that the formation of regional trading arrangements was expected to ameliorate the economic fortunes of the participating African countries by increasing trade among the member countries and by fostering economic growth of the sub-region through economic co-operation. Recognised as an important avenue for economic growth, Geda and Kibret[21], note that currently there is no country in Africa that is not a member of at least one regional economic group.

Balassa[22], defines economic integration as the abolition of discrimination within an area. In Hosny[23], Machlup defines integration as the process of combining separate economies into a larger economic region. According to Balassa[24], there are four different stages of economic integration. The first is a Free Trade Area (FTA), then a Customs Union (CU), then a Common Market (CM), and finally an Economic Union. The stages entail the following:

- In a free trade area no tariffs are levied on goods from other member countries whilst each member country applies its own regime of tariffs to goods imported from outside the region

- A customs union (CU) involves free trade amongst the member countries but with a common external tariff according to which every member country applies the same tariffs on goods from outside the region

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[18] Dinan D. 2007. Fifty years of European integration: A remarkable achievement.

[19] Geda A & Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

[20] Murinde V (ed). 2001. The free trade area of the common market for eastern and southern Africa.

[21] Geda A &Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

[22] Balassa B. 1961. The theory of economic integration.

[23] Hosny AS. 2013. Theories of economic integration: A survey of economic and political literature. International .

[24] Balassa B. 1961. The theory of economic integration.

- A common market (CM) involves the free movement of capital and labour, considerable harmonisation of trade, exchange rate, fiscal and monetary policies, internal exchange rate stability and full internal convertibility
- An economic union is characterised by a common currency and unified macroeconomic policy[25].

Van Langenhove, states that regional integration arrangements should fulfil the following important functions:

- the strengthening of trade integration in the region through the expansion of limited economies of scale and the opening up of new and wider markets.
- the creation of an appropriate enabling environment for private sector development
- the development of infrastructure programmes in support of economic growth and regional integration
- the development of strong public sector institutions and good governance
- the reduction of social exclusion and the development of an inclusive civil society
- contribution to peace and security in the region
- the building of environment programmes at the regional level
- the strengthening of the region's interaction with other regions of the world[26].

Notwithstanding the benefits of regional trading arrangements in the acceleration of economic and social development of participating countries, challenges have been experienced in the effective and proper functioning of the arrangements. A report by the Economic Commission for Africa[27], notes that regional integration arrangements in Africa have been broadly perceived as having produced few concrete results and have done little to accelerate growth or even regional trade. The following notable challenges have been observed;

2.2.1   Variation in initial conditions

Countries participating in regional economic communities are characterised by varying levels of economic growth and development. As Noted by Geda and Kibret, countries participating in integration schemes are at different levels of development and hence the gains from

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[25] Trade, customs and monetary affairs. http://programmes.comesa.int/index.php?option=com_content&view=article&id=83&Itemid=106 accessed 2015/19/10.

[26] Langenhove VL & Costea AC. 2003. The relevance of regional integration in Africa.

[27] Economic Commission for Africa. 2012. Assessing regional integration in Africa: Towards an African continental free trade area.

integration are disproportionate. As a result, the commitment to implement agreed upon treaties could be adversely affected[28].

2.2.2　Loss of sovereignty and lack of political commitment

Participation in regional arrangements requires that participating countries to some degree relinquish national interests to pursue those that are regionally oriented. For example, the removal of trade tariffs as a key mechanism to enhance inter-regional trade could lead to reduced national revenues[29]. Hosny, notes that lack of political commitment to the successful conclusion of any integration agreement is an obvious reason why many integration schemes have not reached their full potential[30].

2.2.3　Overlapping membership

An interesting observation regarding the practice of regional integration in Africa is the overlapping membership of countries in existing regional economic communities[31]. Accordingly, Chacha notes that overlapping membership entails countries maintaining membership in two or more regional trade arrangements with concurrent goals of trade and economic liberalisation[32]. Chacha, states that overlapping membership hampers policy coordination which slows down intra-regional trade. Overlapping membership particularly affects the implementation of rules of origin which are legal mechanisms to enhance intra-regional trade[33].

2.2.4　Implementation problems of harmonisation policies

Geda and Kibret, observe that regional integration communities face challenges in harmonising macroeconomic and trade policies for enhancing economic integration[34]. The challenges in the harmonisation of macro-economic and trade policies is mainly evident in

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[28] Geda A &Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

[29] Geda A &Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

[30] Hosny AS. 2013. Theories of economic integration: A survey of economic and political literature.

[31] The eight regional economic communities identified as the main building blocs of the continent are outlined in Chapter 1 of the thesis.

[32] Chacha M. 2013. Regional integration and the challenge of overlapping memberships on trade.

[33] Chacha M. 2013. Regional integration and the challenge of overlapping memberships on trade.

[34] Geda A & Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

trade enhancing mechanisms such as tariffs, customs procedures, tax policies and problems related to donor support[35]. The challenges experienced in harmonising policies can be attributed to capacity issues among others present at organisational and member country level.

Despite the experienced challenges, regional economic communities have continued to forge ahead in their development agendas and continue to be instrumental in formulating and developing interventions aimed at achieving sustainable economic and social progress in participating countries. The process of integration has received fresh and welcome impetus from regional and global developments including launch of the Tripartite Free Trade Area[36] and the Sustainable Development Goals (SDG's)[37].

2.3   GOVERNING STRUCTURES OF REGIONAL ECONOMIC COMMUNITIES

The glue that ensures proper functioning of regional economic communities are treaties[38]. A treaty is defined as an agreement under international law entered into by actors namely sovereign states and international organisations[39]. A treaty may also be known as an agreement, protocol, covenant, convention, pact, or exchange of letters, among other terms[40]. The key issues spelt out in a treaty include the following:

- aims and objectives of the organisation
- governing organs and structures
- development intervention areas
- financial provisions
- sanctions
- implementation and monitoring arrangements.

Therefore, in striving to attain their aims and objectives, the regional economic communities are governed by established organs and structures which determine how knowledge is generated and applied in knowledge intensive processes.

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[35] Geda A & Kibret H. 2002. Regional economic integration in Africa: A review of problems and prospects with a case study of COMESA.

[36] The Tripartite Free Trade Area between COMESA, SADC and EAC was launched in June 2015.

[37] The SDGs were launched in September 2015.

[38] The treaties guiding the 8 recognised building blocs of the African Union presented in Chapter 1 came into effect as follows; AMU (1989), CEN-SAD (1998), COMESA (1994), EAC (1999) , ECCAS (1984), ECOWAS (1975), IGAD (1996), SADC (1993)

[39] Treaty. http://en.wikipedia.org/wiki/Treaty accessed 2015/3/31.

[40] Treaty. http://en.wikipedia.org/wiki/Treaty accessed 2015/3/31.

As regards the specific case of COMESA, to ensure the effective functioning and coordination of activities undertaken by the organisation, Article 7[41], of the treaty outlines organs that perform distinct yet complimentary functions. The organs facilitated by a determined structure are involved in a decision making process which supports the development, functioning and coordination of programmes and projects. The figure below shows the functions and roles of the organs of COMESA and how they are linked in the decision making process.

*Figure 1: **Decision making process of COMESA***
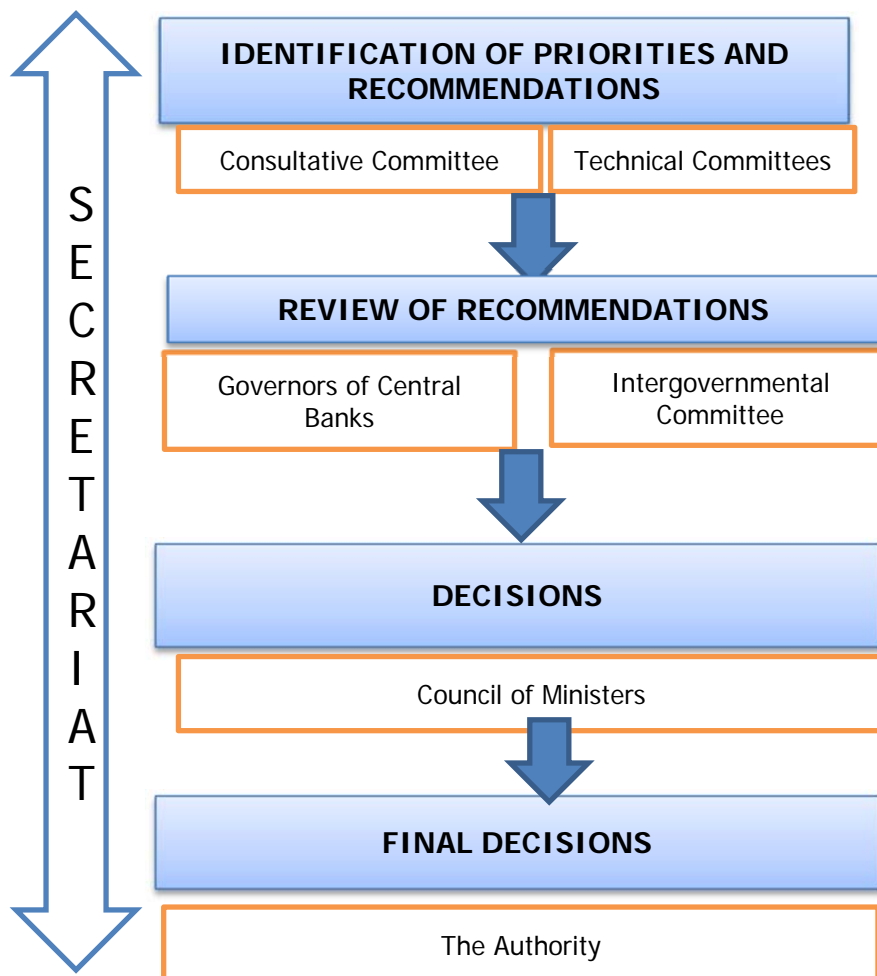
2.4   KNOWLEDGE MODELLING AND DESCRIPTION LANGUAGE (KMDL)

As an outgrowth of the new generation of knowledge management, the KMDL approach focuses on process oriented knowledge management with specific application to business processes. According to Abecker in Gronau et al, business processes are based on core

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[41] COMESA Treaty. 1994.

competencies of a company and consequently they are a knowledge platform of companies[42]. Abecker, notes that knowledge management and business processes are integrated and should be evaluated as a whole[43]. Therefore, there is a necessity to plan, implement and control knowledge management activities along business processes. Further, in Gronau et al[44], Remus et al, states that process oriented knowledge management contributes to the operational added value by supporting, improving and enhancing operational business processes.

Process oriented knowledge management is said to have emerged in the third generation of knowledge management. According to Stacy in Meissner and Wolf[45], in this generation, knowledge management is viewed as an ephemeral active process of relating. The ephemeral process of learning highlights the process of "knowing" instead of conceiving knowledge as an objective entity[46].

The third generation of knowledge management departs from the views of knowledge management in the first and second generations. The first generation of knowledge management views knowledge as a static entity that already exists. According to Firestone and McElroy[47], the first generation of the development of knowledge management assumes that valuable knowledge already exists. Collison[48], further notes that knowledge management in the first generation can be managed in explicit form, specifically the world of codification. The first generation of knowledge management focuses on making the most of what you already have, rather than eliciting or synthesising anything new. First generation organisations place their emphasis on lessons learned databases, best practice templates, enterprise intranet portals, document and content management systems, taxonomies, metadata and search engines[49].

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[42] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[43] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[44] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[45] Meissner JO & Wolf P. 2008. Third generation knowledge management in action. Relational practices in swiss companies.

[46] Meissner JO & Wolf P. 2008. Third generation knowledge management in action. Relational practices in swiss companies.

[47] Firestone J & McElroy M. 2003. The new knowledge management.

[48] Collison C. Knowledge management: The next generation? http://www.chriscollison.com/documents/generation.pdf accessed 2/2/2015.

[49] Collison C. Knowledge management: The next generation? http://www.chriscollison.com/documents/generation.pdf accessed 2/2/2015.

As a step up from first generation knowledge management, the second generation replaced the information technology orientation of the former with a focus on tacit and explicit knowledge conversion inspired by Nonaka's SECI model[50]. Second generation knowledge management highlights the concepts of knowledge generation through learning and linking knowledge to individuals or communities of practice[51].

As noted by Gronau et al, existing approaches in the area of knowledge intensive processes which include but are not limited to BPO-KM and PROMOTE approaches focus on integrated knowledge and process management systems, the support of processes with knowledge management systems, or the analysis of knowledge intensive activities[52]. The existing approaches in the area of knowledge intensive processes are inclined towards the first and second generation of knowledge management development. As a consequence, the approaches do not meet the requirements of a comprehensive and integrated approach of process-oriented knowledge management.

The KMDL theoretical framework on the other hand recognises that parallel to conventional processes exist knowledge intensive processes[53]. Use of the KMDL approach allows for the following:

- visualisation of decisions, actions and measures which facilitate the sequence of the processes in an adequate manner.
- representation of the development, use, offer and demand of knowledge along business processes.
- identification, modelling, analysis and optimisation of knowledge intensive business processes
- illustration of business processes as a sequence of tasks beyond the knowledge conversion and flows in and between them resulting in a knowledge flow model.

Following the identification of knowledge intensity, process schemes and process potential (weak spots)[54], the end result of use of the KMDL approach in analysing knowledge flows are

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[50] Firestone J & McElroy M. 2002. Generations of knowledge management.

[51] Collison C. Knowledge management: The next generation?
http://www.chriscollison.com/documents/generation.pdf accessed 2/2/2015.

[52] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[53] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[54] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive

informed recommendations of technical and organisational improvements[55].

The KMDL was selected for the purpose of the research due to the attributes discussed above which allow for the comprehensive illustration of conventional business processes integrated with knowledge conversions. This research recognises that regional economic communities are characterised by a myriad of variables that interact interdependently along conventional processes that are knowledge intensive. Aided by the KMDL approach, knowledge intensive business processes of the identified regional economic community will be formalised with a focus on specific knowledge specific characteristics allowing for the identification of process improvements.

The KMDL has shown its credibility in modelling of knowledge intensive business processes in real world situations. Gronau et al[56], introduces several aspects which cover different domains of knowledge intensive business processes including public administration, software development, IT – infrastructure, information systems in logistics business and corporal academics. Practical examples of use of the KMDL approach include:

➢ capturing processes in a software company in developing standard products which can be adapted to customer requirements
➢ capturing of a German component supplier's quality management process
➢ investigation of a German producer of groceries information and communication relationships between the customer care department and the product development
➢ introduction of an intranet in the area of e-government[57].

The diversity in the use of the KMDL demonstrates its credibility in modelling knowledge intensive business processes and capturing concrete organisational knowledge flows.

2.5   THEORETICAL CONCEPT OF THE KMDL

In providing a framework for modelling knowledge intensive business processes as a sequence of tasks owing to knowledge conversions, the KMDL is grounded in the existence and

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business processes.

[55] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[56] Gronau N, Muller C & Mathias U. 2004. The KMDL knowledge management approach: Integrating knowledge conversions and business process modelling. Practical aspects of knowledge management.

[57] Gronau N, Muller C & Mathias U. 2004. The KMDL knowledge management approach: Integrating knowledge conversions and business process modelling. Practical aspects of knowledge management.

metamorphosis of two knowledge types. Presented by Polanyi in Nonaka[58], the knowledge types at the centre of knowledge conversion are explicit and tacit knowledge.

2.5.1 Explicit knowledge

According to Nonaka[59], explicit knowledge is formal and systematic. Explicit knowledge can be easily communicated and shared, in product specifications or a scientific formula or a computer programme. Cook and Brown[60], define explicit knowledge as that which can be spelled out or formalised. Explicit knowledge can be shared formally and systematically in the form of data, specifications, manuals, drawings, audio and video tapes, compact discs programmes and a variety of documentation[61].

2.5.2 Tacit knowledge

In Gronau et al[62], Polanyi, states that tacit knowledge is personal, context specific and difficult to communicate. Polanyi further asserts that, "we can know more than we can tell[63]," owing to tacit knowledge. Cook and Brown[64], define tacit knowledge as knowledge that is associated with skills and "know how." According to Nonaka[65], tacit knowledge is deeply rooted in action and in an individual's commitment to a specific context – a craft or a profession, a particular technology or product market, or the activities of a work group or team. Nonaka[66], further asserts that tacit knowledge has an important cognitive dimension. Tacit knowledge consists of mental models, beliefs, and perspectives so ingrained that we take them for granted and therefore cannot easily articulate them.

2.6 KNOWLEDGE CONVERSION

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[58] Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

[59] Nonaka I. 1991.The knowledge creating company.

[60] Cook SDN & Brown JS. 1999. Bridging epistemologies: The generative dance between organisational knowledge and organisational knowing.

[61] Beccera-Fernandez I, Gonzalez A &Sabherwal R. 2004. Knowledge management: Challenges, solutions and technologies.

[62] Gronau N, Muller C & Mathias U. 2004. The KMDL knowledge management approach: Integrating knowledge conversions and business process modelling. Practical aspects of knowledge management.

[63] Gronau N, Muller C & Mathias U. 2004. The KMDL knowledge management approach: Integrating knowledge conversions and business process modelling. Practical aspects of knowledge management.

[64] Cook SDN& Brown JS. 1999. Bridging epistemologies: The generative dance between organisational knowledge and organisational knowing.

[65] Nonaka I. The knowledge creating company. 1991.

[66] Nonaka I. The knowledge creating company. 1991.

Despite the understanding that tacit knowledge is elusive and difficult to communicate, Nonaka et al[67], SECI model presents four (4) modes of knowledge conversion through the interaction of tacit and explicit knowledge. The modes of knowledge conversion are as follows;

2.6.1   From tacit knowledge to tacit knowledge

This is the mode of knowledge conversion that enables us to convert tacit knowledge through interaction between individuals[68]. Nonaka[69], states that the key to acquiring tacit knowledge is experience. Without some form of shared experience, sharing each other's thinking processes proves to be difficult. The process of creating tacit knowledge through shared experiences is referred to as "socialisation."

2.6.2   From explicit knowledge to explicit knowledge

This mode of knowledge conversion involves the use of social processes to combine different bodies of explicit knowledge held by individuals[70]. According to Nonaka[71], the reconfiguration of existing information through sorting, adding, re-categorising, and re-contextualising of explicit knowledge can lead to new knowledge. The process of creating explicit knowledge from explicit knowledge is referred to as "combination."

2.6.3   From tacit knowledge to explicit knowledge

This mode of knowledge conversion captures the idea that tacit knowledge and explicit knowledge are complementary and can expand over time through a process of mutual interaction[72]. According to Nonaka and Tekeuchi[73], the process of converting tacit knowledge to explicit knowledge referred to as "externalisation," uses metaphors, analogies, or models to express one's tacit knowledge in a manner which can be understood by others. During the process of externalisation, it is the essence of tacit knowledge which can then be handed over in a written form.

2.6.4   From explicit knowledge to tacit knowledge

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[67] Nonaka I, Toyama R & Konno N. 2000. SECI, ba and leadership: A unified model of dynamic knowledge creation.

[68] Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

[69] Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

[70] Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

[71] Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

[72] Nonaka I. 1994. A dynamic theory of organisational knowledge creation.

[73] Nonaka I. 1991. The knowledge creating company.

This conversion process termed "internalisation," refers to the process of embodying explicit knowledge into tacit knowledge. Through internalisation, explicit knowledge is shared throughout an organisation and converted into tacit knowledge by individuals. Internalisation is closely related to `learning by doing'[74].

In line with the SECI Model[75], the figure below, illustrates the dynamics of knowledge creation through the processes discussed above.

Figure 2. **Model of the dynamics of knowledge creation**
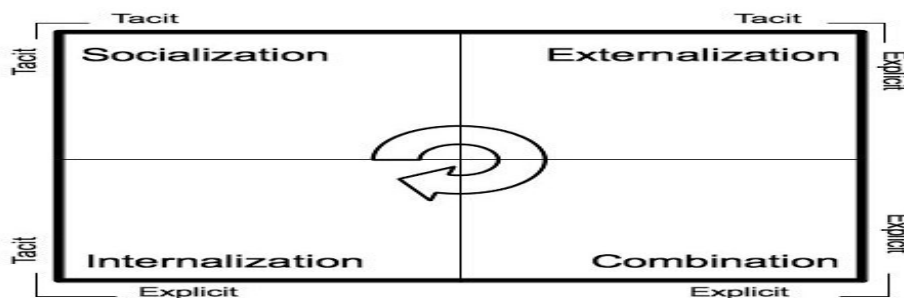
Within the overall concept of the knowledge conversion processes, the KMDL framework recognises that information is a flow of messages, while knowledge is generally created by the very flow of information. Knowledge is created through anchoring it in the beliefs and commitments of its holder. In the KMDL process models, information and explicit knowledge are represented as information objects while tacit knowledge used within the process is represented by knowledge objects[76]. With this approach taken in identifying the knowledge types and the subsequent process of knowledge conversion, the modelling of the used and generated information and knowledge objects enriches the sequential description of knowledge intensive business processes[77].

2.7   KMDL OBJECT MODEL

The modelling of knowledge intensive business processes using KMDL is made possible through objects which are connected using a directed information flow as an edge and the four

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[74] Nonaka I, Toyama R & Konno N. 2000. SECI, ba and leadership: A unified model of dynamic knowledge creation.

[75] SECI model of knowledge dimensions.
https://en.wikipedia.org/wiki/SECI_model_of_knowledge_dimensions accessed 2016/1/2.

[76] Gronau N, Muller C & Mathias U. 2004. The KMDL knowledge management approach: Integrating knowledge conversions and business process modelling. Practical aspects of knowledge management.
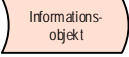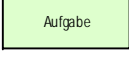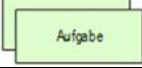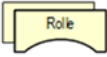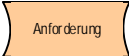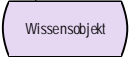
[77] Gronau N, Muller C & Mathias U. 2004. The KMDL knowledge management approach: Integrating knowledge conversions and business process modelling. Practical aspects of knowledge management.

kinds of knowledge conversion[78].

Table 1 below outlines the objects, description and representation of knowledge conversion and objects.

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[78] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

Table 1. **KMDL objects, description and representation of knowledge conversion and objects.**

Name of Object	Description	Representation of Knowledge Conversion and Object s
Information Object	Refers to explicit knowledge which is generated by converting existing elements within a knowledge intensive business project	Informations-objekt
Task	Tasks are the basic framework for business process models. The sequence of the tasks determines the temporal structure of the process. A task is an atomic transfer from input to output, represented as information objects.	Aufgabe
Task Aggregation	This object defines an aggregated task. It simplifies the modelling process by bringing a focus on the intended task.	Aufgabe
Role	Roles are taken by persons and have the knowledge objects of all persons assigned to them. By relating employees and tasks to a position, the functional and organisational structure of an organisation can be represented.	Rolle
Role aggregation	This object defines an aggregated role. It simplifies the modelling process by bringing a focus on the actual role taken by persons.	Rolle
Person	Persons are the owners of knowledge objects that are necessary to fulfil tasks	Person
Group	This object refers to an aggregated set of individuals who together are owners of knowledge objects necessary to fulfil tasks	Team
Task Requirements	Performing tasks describes requirements on the roles that are modelled as task requirements. The totality of task requirements defines the tacit knowledge that is necessary for a position working on a concrete task. More than one task requirement can be associated to a role as more often than not one capability is necessary to accomplish the task.	Anforderung
Knowledge Object	Describes the knowledge of persons. Each knowledge object must have a reference to a knowledge descriptor for describing which part of a knowledge domain is covered in which quality. Every used and needed tacit capability is represented by a knowledge object.	Wissensobjekt

In the KMDL modelling technique, conversion is represented as a node which links all the participants (knowledge or information objects). The relations between the participants are directed and show the status of the element as sender or receiver. The line style shows the frequency of participation while the completeness of the conversion is represented by the shape of the node symbol[79]. The figure below shows the defined edges and their properties.

*Figure 3. **Defined edges and properties.***
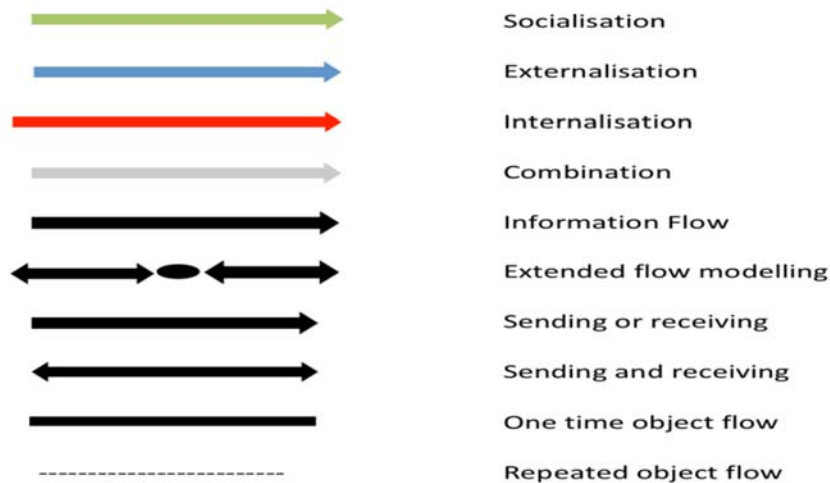
2.8   THE KMDL PROCEDURAL MODEL

The KMDL framework presents an elaborate step by step procedural model to ensure the accurate extraction of all data and information representing elements and components of a knowledge intensive business process. Of critical importance to the success of the procedural model is engagement of all participants in the process[80].

According to Gronau et al[81], the procedural model comprises of six steps as follows;

2.8.1   Step 1: Identification of knowledge-intensive business processes

Step one of the procedural model involves the identification of knowledge intensive business processes. The inaugural step presents a criteria catalogue consisting of up to thirty properties of knowledge intensive business processes to support the definition.

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[79] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[80] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[81] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

According to Remus in Gronau et al[82], within process-oriented knowledge management, the knowledge intensive business process is the primary perspective. Various scholars have sought to understand the meaning of knowledge intensive business processes. In attempting to present an accurate understanding of the concept, a distinction has been made between processes that are knowledge intensive and those that are not.

Isik et al, states that the most basic understanding of knowledge intensive business processes is that they require the collection and use of information and knowledge more than processes that are not knowledge intensive[83]. From a broad, conceptual point of view, knowledge intensive business processes can be defined as processes that require very specific process knowledge, typically involve experts, are hard to predict and vary in almost every instance of the process[84]. Knowledge intensive business processes, depend largely on human involvement and decisions although parts of the process could be supported by automation. Examples of knowledge intensive business processes can be a new product or service development, marketing processes, software development and strategy development[85].

Kulkarni and Ipe in Isik et al, propose characteristics of knowledge intensive business processes owing to the level of decisions and the role of the decision maker in the process. More specifically, the diversity of decision options, the link between process outcomes and decisions and the required expertise of the decision maker[86].

Gronau and Weber in Di Ciccio et al, state that a business process is knowledge intensive if its value can only be created through the fulfilment of the knowledge requirements of the process participants[87]. According to Di Ciccio et al, a knowledge intensive process is characterised by activities that cannot be planned easily, may change on the fly and are driven by the contextual scenario that the process is embedded in[88]. The contextual scenario dictates who should be involved and who the right person to execute a particular step is. The set of users involved may

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[82] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[83] Isik O, Van den Bergh J & Mertens W. 2012. Knowledge intensive business processes: An exploratory study.

[84] Isik O, Van den Bergh J & Mertens W. 2012. Knowledge intensive business processes: An exploratory study.

[85] Isik O, Van den Bergh J & Mertens W. 2012. Knowledge intensive business processes: An exploratory study.

[86] Isik O, Van den Bergh J & Mertens W. 2012. Knowledge intensive business processes: An exploratory study.

[87] Di Ciccio C, Marella A & Russo A. Knowledge-intensive processes: An overview of contemporary approaches.

[88] Di Ciccio C, Marella A & Russo A. Knowledge-intensive processes: An overview of contemporary approaches.

not be formally defined as these are discovered as the process scenario unfolds[89]. In addition, collaborative interactions among the users typically is a major part of such knowledge intensive processes, and new process steps might have to be defined at run time on the basis of contextual changes[90].

Contrary to the understanding that knowledge intensive business processes are usually not easily planned, are hard to predict and are characterised by a degree of uncertainty is another view. According to Isik et al, process levels come into play and at a higher level such as strategic processes, knowledge intensive business processes have a structured chain of process steps and are repeatable[91]. Gronau et al, similarly note that common business processes are characterised by a predefined process structure and repeated tasks that are fulfilled basing on the underlying process model, which contains information, tasks and user roles[92].

Furthermore, Gronau et al states that, for a knowledge intensive business process to achieve a successful process completion, typically knowledge flows and knowledge transfers between media and persons were necessary[93].

2.8.2   Step 2: Capturing of the knowledge-intensive business process

Step two of the procedural model demands for the capturing of the knowledge intensive business process. The second step provides a sub-procedure which comprises of six courses of action as follows;

a) *Definition of tasks associated to the process*

In the KMDL object model, tasks are the basic framework for business process models. The sequence of the tasks determine the temporal structure of the process. A task is defined as an atomic transfer from input to output, represented as information objects. Tasks are related to and are fulfilled by (job) positions. The organisational view of the information flow within the KMDL is workflow-oriented; because of that the role is allocated to the task irrespective of the

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[89] Di Ciccio C, Marella A & Russo A. Knowledge-intensive processes: An overview of contemporary approaches.

[90] Di Ciccio C, Marella A & Russo A. Knowledge-intensive processes: An overview of contemporary approaches.

[91] Isik O, Van den Bergh J &Mertens W. 2012. Knowledge intensive business processes: An exploratory study.

[92] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[93] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

job holder[94].

Tasks are essential activities that require to be well entrenched and executed in an effective and efficient manner to ensure that outputs are aligned to and contribute to the achievement of the overall goals of a project. An understanding of a task ensures the appropriate input and output of quality knowledge which in turn supports and contributes to the execution of follow up tasks and the achievement of the overall objectives of a knowledge intensive business process.

b) *Identification of the information inputs and information outputs*

The second and third step in capturing the knowledge intensive business process involves the identification of the information inputs and the information outputs[95]. According to the KMDL object model, the term knowledge object refers to the tacit knowledge while the term information refers to explicit knowledge. New knowledge and information objects are therefore generated by converting existing elements within the knowledge intensive business process. The conversion is based on the interaction between knowledge and information objects[96].

The identification of the information inputs and the information outputs is critical in understanding that distinct tasks in a knowledge intensive business process require and generate new information. This understanding ensures that tasks have the appropriate information inputs and information outputs.

c) *Assignment of the persons to the specific roles executing the task*

A process is knowledge-intensive if its value can only be created through the fulfilment of the knowledge requirements of the process participants[97]. According to Gronau et al, roles are taken by persons and have the knowledge objects of all persons assigned to them. By relating employees and tasks to a position, the functional and organisational structure of a company can b e represented[98].

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[94] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[95] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[96] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[97] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[98] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

The KMDL object model[99], recognises that both individuals and groups make up persons in knowledge intensive business processes responsible for specific roles in the execution of specific tasks. According to Weick and Roberts in Erden et al[100], "group" refers to a collection of people in a close relationship taking part in an interrelated activity with the aim of performing a task or achieving a common target. It has further been stated that although organisational knowledge creation theory suggests that the origin of all knowledge is individual, it also focuses on emerging groups for the purpose of knowledge creation and innovation[101].

Process participants are key elements in a knowledge intensive business process for the reason that it is through their participation that the process is actualised. Accordingly, Gantt in Wren and Bedeian[102], recognised that the workingman, "a human unit in a living organisation," was the most important element in management, stressing the importance of an individual's participation in a knowledge intensive business process.

d) *Specification of the role requirements*

According to Gronau et al, performing tasks describes requirements on the roles that are modelled as task requirements. The totality of task requirements defines the tacit knowledge that is necessary for a position working on a concrete task. More than one task requirement can be associated to a role, because normally more than one capability is necessary to accomplish the task[103].

The specification of role requirements aligns with the understanding of knowledge as the actuality of skilful action. In addition, the specification of role requirements recognises that an individual has knowledge through performance of a task[104]. The specification of role requirements ensures that the right knowledge at the right level of quality is determined.

e) *Assignment of the knowledge objects to the accompanying person*

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[99] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[100] Erden Z, Von Krogh G &Nonaka I. 2008. The quality of group knowledge.

[101] Erden Z, Von Krogh G &Nonaka I. 2008. The quality of group knowledge.

[102] Wren DA & Bedeain AG. 2009. The evolution of management thought.

[103] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[104] Nonaka I & Von Krogh G. 2009. Tacit knowledge and knowledge conversion: Controversy and advancement in organisational knowledge creation theory.

In the KMDL object model, a knowledge object describes the knowledge of persons. Every used and needed tacit capability is represented by a knowledge object[105]. A knowledge object therefore represents the tacit knowledge that is embodied in persons' responsible for roles and enables skilful action in the execution of tasks.

The knowledge objects in conjunction with the task requirements represent the totality of the knowledge required to perform a task. The combination of knowledge objects and task requirements represent a knowledge descriptor which describes the borders and contents of a knowledge domain and defines partial domains if necessary[106].

According to Gronau et al, the attributes of the task requirement and the knowledge object contain the required knowledge level within the considered domain. Because of the definition of the knowledge description, the comparison of the desired task requirement with the available knowledge object is possible[107].

2.8.3   Step 3: Modelling of the knowledge intensive process using the K-Modeler

Following the execution of the second step of the KMDL procedural model which calls for the comprehensive capturing of a knowledge-intensive business process, the third step involves modelling of the process. The modelling of the knowledge intensive business process is supported by a tool termed the K-Modeler. According to Gronau et al, the K-Modeler supports the modelling of knowledge-intensive business processes in an easy and intuitive manner[108]. In addition, the K-Modeler supports mechanisms to analyse processes and generate reports from the model[109].

The K-Modeler is engineered using the graphical integration platform Eclipse developed to build integrated development environments (IDEs) and comes with a variety of core services in order to easily integrate IDEs with slight effort[110].

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[105] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[106] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[107] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[108] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[109] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[110] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive

The basic functionalities of the K-Modeler includes; modelling of knowledge intensive business processes, process analyses, different views of models, support for skills management and re-use of models.

2.8.4   Step 4: Analysing the process supported by the K-Modeler

Concurrent with the third step of the procedural model which involves the modelling of the knowledge intensive business process using the K-Modeler is the fourth step. The fourth step of the procedural model with the support of the generated knowledge flow model and process data allows for the analysis of the knowledge intensive business process.

2.8.5   Step 5: Generation of a qualified concept

Following the analysis of the knowledge intensive business process supported by the K-Modeler, the fifth step of the KMDL procedural model requires for the generation of a qualified concept. According to Gronau et al, the qualified concept could for example contain process improvements[111].

2.8.6   Step 6: Implementation phase

The last step of the KMDL procedural model is the implementation phase. The implementation phase is only used when information technologies are being implemented[112].

The figure below illustrates the six steps of the KMDL procedural model.

Figure 4. KMDL procedural model

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business processes.

[111] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

[112] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

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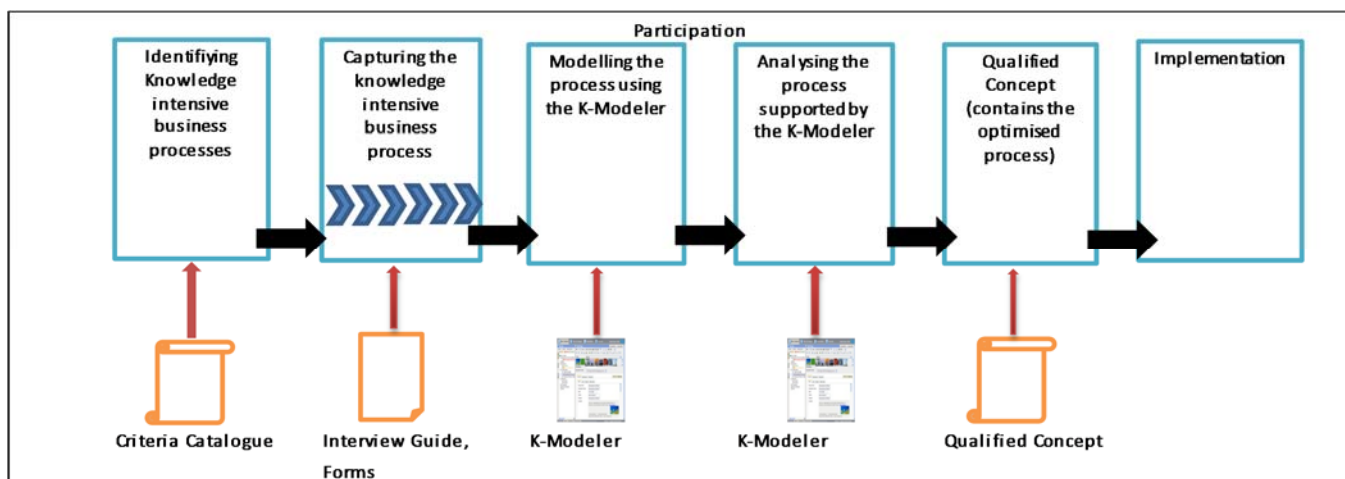
2.9   THE CONCEPT OF QUALITY KNOWLEDGE AND RELATED CONCEPTS

The KMDL theoretical construct presented in the preceding section introduced a framework which aims to facilitate process oriented knowledge management. The overall purpose of the framework in addition to numerous other theoretical frameworks in the school of knowledge management is to guide organisations in efforts to effectively manage knowledge resources. The practice of knowledge management defined as doing what is needed to get the most out of knowledge resources[113], should therefore aim to support the creation and application of quality knowledge.

Tongchuay and Praneetpolgrang, state that quality knowledge is an important factor for knowledge management processes because it is useful in decision support in work and innovation knowledge[114]. The Nolan Norton Institute further stresses that knowledge quality and the way it is managed are of prime importance[115]. Furthermore, Yoo et al, state that although knowledge is an important resource, the effective use of the knowledge will depend to a large extent on its quality[116].

Despite the recognition that knowledge quality remains a vaguely defined concept because of its abundance and variability[117], a number of definitions abound as it particularly relates to the

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[113] Beccerra-Fernandez I & Sabherwal R. 2010. Knowledge management: Systems and processes.

[114] Tongchuay C & Praneetpolgrang P. 2008. Knowledge quality and quality metrics in knowledge management systems.

[115] Nolan Norton Institute. 1998. Putting the knowing organization to value.

[116] Yoo DK, Vonderembse MA & Ragu-Nathan. 2010. Knowledge quality: Antecedents and consequences in project teams.

[117] Yoo DK, Vonderembse MA & Ragu-Nathan. 2010. Knowledge quality: Antecedents and consequences in project teams.

concept of quality. In advancing quality knowledge measurements, the Simplicable Business Guide notes that quality is key to the value of knowledge[118]. In addition, the guide asserts that quality knowledge is fit for purpose[119]. Among the quality knowledge measurements presented by the guide include, accessibility, diversity, accuracy, relevance, actionable, adaptable, sustainable and continually improved[120].

Rech et al, recognise that currently a quality model for knowledge does not exist[121]. In an attempt to present some quality knowledge characteristics, Rech et al, utilise quality characteristics transferred from software engineering and database technology[122]. Among the core quality factors applied to knowledge include the following;

- functionality, meaning that knowledge components are suitable and accurate
- reliability, meaning knowledge components are mature and valid
- usability, meaning that knowledge components are understandable, learnable and applicable
- portability, meaning that knowledge components should be adaptable to new contexts
- efficiency relating to timeliness[123].

Yoo et al, in exploring the nature of knowledge quality, bring forward the following dimensions of quality knowledge;

- intrinsic knowledge quality - this is the extent to which knowledge has quality in its own right. This dimension is associated with accuracy, reliability, and timeliness of the knowledge. It is a foundation for knowledge quality, and provides a rich understanding of activities and relationships
- contextual knowledge quality - this refers to the extent to which knowledge is considered within the context of the task. This dimension is related to relevance,

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[118] 31 Knowledge Quality Measurements. http://management.simplicable.com/management/new/31-knowledge-quality-measurements accessed on 2015/17/9.

[119] 31 Knowledge Quality Measurements. http://management.simplicable.com/management/new/31-knowledge-quality-measurements accessed on 2015/17/9.

[120] 31 Knowledge Quality Measurements. http://management.simplicable.com/management/new/31-knowledge-quality-measurements accessed on 2015/17/9.

[121] Rech J, Decker B, Ras E, Jedlitschka & Feldmann RL. The quality of knowledge: Knowledge patterns and knowledge refactorings.

[122] Rech J, Decker B, Ras E, Jedlitschka & Feldmann RL. The quality of knowledge: Knowledge patterns and knowledge refactorings.

[123] Rech J, Decker B, Ras E, Jedlitschka & Feldmann RL. The quality of knowledge: Knowledge patterns and knowledge refactorings.

appropriateness, and value-addedness by understanding the environment in which a task operates

- actionable knowledge quality - this refers to the extent to which knowledge is expandable, adaptable, or easily applied to tasks[124].

Tongchuay and Praneetpolgrang, further state that the many definitions of quality such as; "fitness for use," "fitness for purpose," and "conformance to requirements," each represent a facet of quality and are incorporated into international definitions of the term[125].

The definitions presented above convey a common thread of what quality knowledge should possess. The definitions point to the fact that quality knowledge should be fit for purpose and enable intelligent action. This research therefore contends that regional economic communities should strive to generate quality knowledge that is fit for purpose so as to enhance efficiency and effectiveness in the work undertaken to attain objectives.

2.10   CONCEPTS RELATED TO QUALITY KNOWLEDGE

Organisational theory brings forward the concept of organisations as the rational coordination of the activities of a number of people for the achievement of some common explicit purpose or goal[126]. The coordination is undertaken through the division of labour or function and through a hierarchy of authority and responsibility[127].

Conceptual issues have however been pointed out in viewing organisations as collectivities of people whose activities are consciously designed, coordinated and directed by their members in order to pursue explicit purposes and attain particular common objectives or goals[128]. It has been noted that as opposed to generally presuming the existence of a common consensus, it is important to recognise that indeed different members might have an array of different goals regarding their involvement with a particular organisation. These different goals reflect varying individual interests, needs, and goals that might conflict with one another.

The assertion that organisations are characterised by members with particular interests, needs, and goals that might be in conflict with one another is especially evident in regional economic

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[124] Yoo DK, Vonderembse MA & Ragu-Nathan. 2010. Knowledge quality: antecedents and consequence in project teams.

[125] Tongchuay C & Praneetpolgrang P. 2008. Knowledge quality and quality metrics in knowledge management systems.

[126] McAuley J, Duberley J & Johnson P. 2007. Organisational theory: Challenges and perspectives.

[127] McAuley J, Duberley J & Johnson P. 2007. Organisational theory: Challenges and perspectives.

[128] McAuley J, Duberley J & Johnson P. 2007. Organisational theory: Challenges and perspectives.

communities. This is due to the multi-stakeholder involvement and the continuous contestation between different interest groups which impose unique demands on the nature of information flows and knowledge facilitation. As a result, this raises the level of difficulty in generating quality knowledge. The concepts related to quality knowledge in the context of regional economic communities are as follows;

2.10.1 The contextual aspect

A study undertaken by Yoo et al, asserts that contextual knowledge has the highest loading on knowledge quality and that knowledge needs to be attuned to context. In addition, knowledge requires to be acted upon to sustain knowledge quality[129].

Further, Keene notes that a classic flaw of development projects and perspectives which can often be traced to a lack of collaboration across disciplines and sectors is the ignorance of project planners of the historical, political, social economic and environmental context of a given community, country or region[130].

Furthermore, it has been stated that every project has a unique context; the scope, setting, phase, decision process and stakeholders affect the opportunities to incorporate sustainability on any project[131]. Understanding the project's context is critical to the successful application of sustainability goals. Context should therefore be viewed as both a constant and an opportunity[132].

Therefore, an understanding of the environment in which a project is to be implemented enhances the quality of knowledge and supports the meaningful development and implementation of interventions. Interventions developed by regional economic communities should be informed by contextual factors of host regions, countries and communities.

2.10.2 Political will aspect

In attempting to narrow down a specific contextual factor that heavily bears on the quality of knowledge in regional economic communities, the aspect of political will was recognised. This

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[129] Yoo DK, Vonderembse MA & Ragu-Nathan. 2010. Knowledge quality: Antecedents and consequences in project teams.

[130] Keene C. 2007. Development projects that didn't work: The perils of narrow approaches to complex situations.

[131] Understanding the context of a project. https://www.sustainablehighways.org/1089/understanding-the-context-of-a-project.html accessed 2015/21/7.

[132] Understanding the context of a project. https://www.sustainablehighways.org/1089/understanding-the-context-of-a-project.html accessed 2015/21/7.

critical concept emerges due to the involvement of a fair number of governments of respective countries in the development and implementation of interventions.

Charney, asserts that to advocates, politicians and organisations promoting change, political will is the holy grail[133]. When advocates argue, politicians vote, and organisations campaign, they say they are trying to shape or respond to political will. Political will is the ghost in the machine of politics, the motive force that generates political action[134]. In addition, political will is the determination of an individual political actor to do and say things that will produce a desired outcome[135].

Political will therefore translates into how far individual governments are willing to go to realise the aspirations of the organisations in which they are a part and parcel of. This places unique demands on the quality of knowledge particularly relating to mutually agreed actionable knowledge.

The Economic Commission of Africa notes that without an absolute political commitment to implementing integration policies and programmes at the national level, there can be little progress at the sub-regional or regional levels[136]. Among the key issues identified by the Commission which reflect failure to integrate because of inaction of political will are inadequate internalisation of agreed integration objectives at the national level and delays in ratifying protocols, hampering timely implementation of decisions[137].

2.10.3   The aspect of time lag, feedback and resulting delays

A system is defined as a complex whole the functioning of which depends on its parts and the interaction between those parts[138]. Due to the myriad of variables that are in constant interaction in pursuing integration initiatives, regional economic communities emerge as complex systems.

Systems thinking emerged as a trans-discipline in the 1940s and 1950s as a reaction to the

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[133] Charney C. 2009. Political Will: What is it? How is it measured?
   www.charneyresearch.com/resources/political-will-what-is-it-how-is-it-measured/) accessed 2015/25/7.

[134] Charney C. 2009. Political Will: What is it? How is it measured?
   www.charneyresearch.com/resources/political-will-what-is-it-how-is-it-measured/) accessed 2015/25/7.

[135] Appendix 3: Understanding "Political Will." http://r4d.dfid.gov.uk accessed 2015/8/6.

[136] Economic Commission for Africa. 2004. Assessing regional integration in Africa.

[137] Economic Commission for Africa. 2004. Assessing regional integration in Africa.

[138] Jackson MC. 2003. Systems thinking: Creative holism for managers.

traditional scientific method for studying systems known as reductionism[139]. Reductionism sought to understand the whole working from an understanding of its parts. Systems thinking on the other hand, asserts that the whole emerges from the interaction between the parts which affect each other through complex networks of relationships[140].

According to Peter Senge, the practice of systems thinking starts with understanding a simple concept called "feedback." The concept of feedback shows how actions can reinforce or counteract (balance) each other. It builds to learning to recognise types of structures that recur again and again[141]. Senge, states that organisations and societies resemble complex organisms because they too have myriad balancing feedback processes[142]. Feedback processes are initiated by feedback loops defined as system structures that cause output from one node to eventually influence input to that node[143]. The figure below illustrates a simple feedback loop.

*Figure 5.**Illustration of a feedback loop***
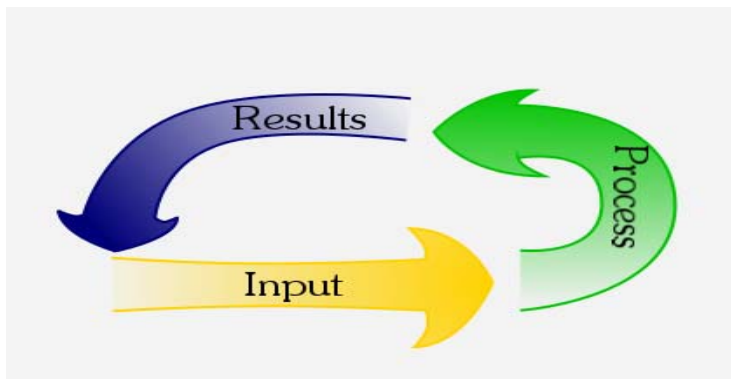
A critical aspect of the concept of systems thinking relevant to the research is that of delays which constitutes the third basic building block for a systems language and are inherent in feedback processes. Delays occur when the effect of one variable on another takes time, often resulting in time lags[144]. Senge, states that virtually all feedback processes have some form of delays but often, the delays are either unrecognised or not well understood. Senge further notes that unrecognised delays can also lead to instability and breakdown especially when they are

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[139] Jackson MC. 2003. Systems thinking: Creative holism for managers.

[140] Jackson MC. 2003. Systems thinking: Creative holism for managers.

[141] Senge P. 1990. The fifth discipline.

[142] Senge P. 1990. The fifth discipline.

[143] Feedback loop. http://www.thwink.org/sustain/glossary/FeedbackLoop.htm accessed 2015/7/8.

[144] Senge P. 1990. The fifth discipline.

long[145]. Senge, furthermore asserts that in the short term you can often ignore delays, as they are inconsequential, they only come back to haunt you in the long term[146].

Systems thinking viewed through the lens of this study, specifically the complexities of regional economic communities therefore emerges as an important concept related to the quality of knowledge. The correlation of systems thinking and the quality of knowledge in regional economic communities emerges due to the fact that existing feedback loops and resulting delays play a key role in the quality of knowledge that is generated and utilised through the interaction of variables.

2.10.4   Learning aspect

The measurements of quality knowledge related to adaptability, sustainability and continuous improvement of knowledge cannot be obtained without an active approach to learning. Marquardt, notes that organisations that learn faster will be able to adapt quicker and thereby achieve significant strategic advantages[147].

Learning is the act of acquiring new or modifying and reinforcing, existing knowledge. In addition, learning is the acquisition of behaviour, skills, values or preferences and may involve synthesising different types of information[148]. Learning forms an integral part of individual and organisational life.

For organisations such as regional economic communities to be successful and continuously reinvent themselves so as to remain relevant in an ever changing environment, learning at the individual and organisational level plays a critical role. According to Senge, in learning organisations, people continually expand their capacity to create the results they truly desire. In addition, in learning organisations, new and expansive patterns of thinking are nurtured, collective aspiration is set free, and people are continually learning how to learn together[149].

In further advancing the concept of organisational learning, proponents of the concept call for double or triple loop learning as opposed to single loop learning. According to Argyris, single loop learning refers to a situation where if something goes wrong, the initial port for many people is to look for another strategy that will address and work within the governing

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[145] Senge P. 1990. The fifth discipline.

[146] Senge P. 1990. The fifth discipline.

[147] Marquardt MJ. 1996. Building the learning organisation.

[148] Learning. https://en.m.wikipedia.org/wiki/Learning accessed 2015/4/2.

[149] Senge P. 1990. The fifth discipline.

variables[150]. In other words, given or chosen goals, values, plans and rules are operationalised rather than questioned[151]. Therefore, when the error detected and corrected permits the organisation to carry on its present policies or achieve present objectives, then the error and correction process is single-loop learning[152].

Double loop learning on the other hand expands analytical frames to explicitly identify and challenge underlying assumptions guiding organisational goals, values and strategies[153]. Double loop learning forms a solid basis on which quality knowledge can be generated as it questions the governing variables on which organisational interventions are established aiding the process of improved development and implementation of development interventions. The double loop learning approach in regional economic communities is therefore essential in facilitating the generation of quality knowledge

The illustration below shows single and double loop learning in practice in organisational learning.

*Figure 6.**Illustration of single and double loop learning[154].***
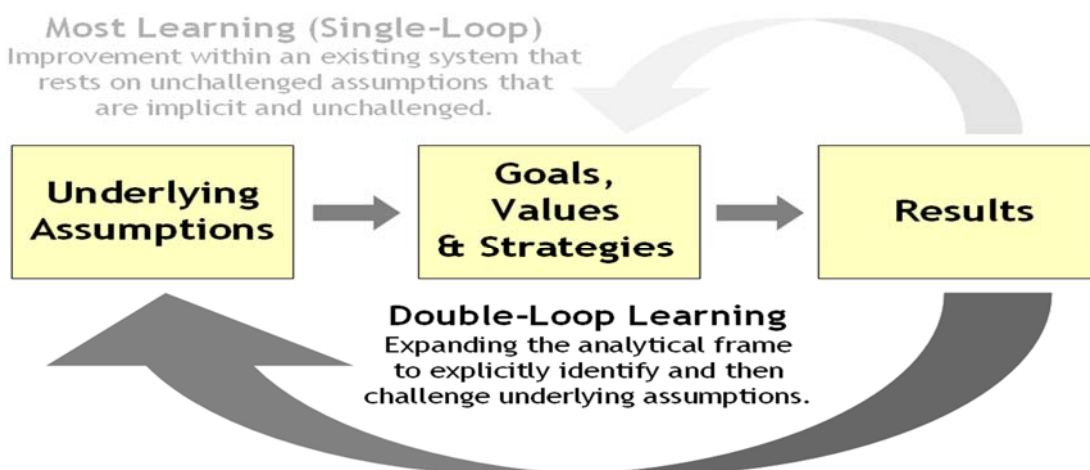
2.10.5 The capacity aspect

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[150] Argyris C. Theories of action, double-loop learning and organizational learning.http://infed.org/mobi/chris-argyris-theories-of-action-double-loop-learning-and-organizational-learning/ accessed 2015/21/7.

[151] Argyris C. Theories of action, double-loop learning and organizational learning.http://infed.org/mobi/chris-argyris-theories-of-action-double-loop-learning-and-organizational-learning/ accessed 2015/21/7.

[152] Argyris C.Theories of action, double-loop learning and organizational learning.http://infed.org/mobi/chris-argyris-theories-of-action-double-loop-learning-and-organizational-learning/accessed 2015/21/7.

[153] Argyris C.Theories of action, double-loop learning and organizational learning.http://infed.org/mobi/chris-argyris-theories-of-action-double-loop-learning-and-organizational-learning/accessed 2015/21/7.

[154] Double loop learning. http://linchpin.org/site/wp-content/uploads/2013/07/Double-Loop_Learning_2_Large.gif accessed 2015/21/7.

Knowledge has been defined as the capacity to act intelligently[155]. This definition translates into the fact that being knowledgeable means commanding the capacity of agency with regard to a specific action[156]. This definition of knowledge rich in the actionable quality of knowledge highlights the critical aspect of capacity. This is so because it relates to the existence of the required capability of individuals and groups to effectively perform specific roles in support of specified tasks in knowledge intensive business processes.

For any organisation to be successful in implementing developed strategies through specific projects and programmes there is need for a sufficient level of capacity at all levels. The United Nations Development Programme in discussing capacity imperatives for regional integration in Africa defines capacity as the ability of individuals, organisations and societies to perform functions, solve problems, set and achieve goals[157]. Kaplan further asserts that an organisation with capacity has the ability to function as a resilient strategic and autonomous entity[158].

Similar to other types of organisations, regional economic communities require the right level of capacity to facilitate the effective operationalisation of functions and the successful implementation of activities. The African Capacity Building Foundation notes that capacity is needed to drive the integration process in Africa[159]. The foundation observes that more pressing among identified issues is building the capacity to implement regional projects and programmes[160].

2.11   CONCLUSION

Having discussed the theoretical tools and frameworks guiding the research, an insight emerges indicating that knowledge lies at the core of an organisation's processes in their entirety. The insight that knowledge lies at the core of an organisation's processes was particularly noted in discussing the KMDL theoretical construct which showed that knowledge intensive processes are core competencies of an organisation and consequently form existing knowledge platforms on which all tasks are performed.

Goal oriented organisations require to recognise and understand the inherent dynamic processes of knowledge creation and application. In addition, organisations require an

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[155] Kinghorn J. Knowledge lectures.

[156] Kinghorn J. Knowledge lectures.

[157] The African Capacity Building Foundation. 2014. Africa Capacity Report.

[158] The African Capacity Building Foundation. 2014. Africa Capacity Report.

[159] The African Capacity Building Foundation. 2014. Africa Capacity Report.

[160] The African Capacity Building Foundation. 2014. Africa Capacity Report.

understanding of   unique factors that affect the flow of knowledge in knowledge intensive processes if they are to strengthen existing knowledge bases and harness the full potential of knowledge.

Due to the unique nature of regional economic communities, the concept of quality knowledge cannot be fully articulated and comprehended in isolation of factors that have a heavy bearing on processes that involve the formulation and implementation of interventions.

From the preceding discussion, the research contends that contextual factors including political will, the aspect of time lags, feedback and delays, organisational learning and capacity issues influence the quality of knowledge; this has a bearing on the working and performance of regional economic communities. Knowledge management activities in promoting organisational quality knowledge should therefore be holistic to understand underlying factors that impact knowledge quality.

Chapter 3

The Case Analysis

3.1   INTRODUCTION

This chapter presents the discussion on the execution and findings of the research based on a case analysis of a project developed and put into effect by a regional economic community specifically COMESA. The project was selected as it allowed for a close up view and analysis of knowledge flows in a multi-variable knowledge intensive business process.

3.2   CASE OF ANALYSIS: THE COMESA ENHANCING PROCUREMENT REFORMS AND CAPACITY PROJECT

As COMESA's regional integration agenda advanced, it was recognised that there was a need to employ mechanisms that promote fair and open trade. Among the issues identified was the need to develop coherent and uniform procurement laws, regulation and processes in the region[161].

Procurement has been defined as the acquisition of goods, services or works from an external source. The process of procurement favours that the goods, services or works are appropriate and that they are procured at the best possible cost to meet the needs of the acquirer in terms of quality, quantity, time, and location. Corporations and public bodies often define processes intended to promote fair and open competition for their business while minimising exposure to fraud and collusion[162]. Procurement is often carried out by the process of tendering, rather than buying products directly from a seller[163].

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[161] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[162] Procurement. http://en.wikipedia.org/wiki/Procurement accessed 2015/4/16.

[163] Implementation – Tendering & Procurement. http://pppue.undp.2margraf.com/en/16.htm accessed on 2015/4/16.

Following a study in 1998 that revealed that although there existed procurement laws in a majority of COMESA member countries, some aspects of the laws tended to restrict free trade. To address this, COMESA established the Public Procurement Reform Project (PPRP). The aim of the project was to start the process of improving national procurement systems and to begin harmonising public procurement rules, regulations and procedures in the member countries[164]. A key output of the project was a baseline data diagnostics survey on procurement laws, procedures and regulations in the member countries. In addition to the survey, the COMESA public procurement framework directive was passed. The public procurement framework facilitated the commencement of the process of legislative reforms designed to align member countries procurement laws and regulations to the regional framework[165].

Further, outputs of the PPRP included, capacity building to sustain good procurement practices and a website-based procurement information system to support the public procurement system were developed[166].

As the PPRP's main output was the framework to facilitate and guide the process of reform in procurement laws and regulations in member countries, at the closure of the project in 2004[167], it was realised that a follow up project was required to support and sustain gains made by member countries in implementing the procurement reform directive. Consequently, the COMESA Enhancing Procurement Reforms and Capacity Project (EPRCP) was established in 2006[168]. The EPRCP was developed for implementation in all nineteen (19) member countries.

The objective of the EPRCP was to enhance the public procurement systems in COMESA member countries by modernising and harmonising laws, regulations and procedures. Additionally, the aim of the project was to strengthen the member countries' capacities to manage modern public procurement systems[169]. The principle focus areas of the project were as follows;

- sensitisation of key policy makers and executives on the need for review of laws, policies, and procedures compliant with the modern public procurement framework as

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[164] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[165] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[166] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[167] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[168] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[169] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

well as an awareness programme designed to empower the private sector.

- support to national legislation process, involving the legislative assemblies and implement modern and harmonised regional public procurement systems.

- strengthen the institutional capacities through training, intended to create capacity to support and sustain good procurement practices at national and regional levels; and

- upgrade the procurement information system with the capacity to publicise and host national procurement information on the website[170].

3.3   LEVEL OF ANALYSIS

To gain an understanding of knowledge flows in a complex organisational setting exemplified by a regional economic community at a macro level, the research opted to model the core perspective of the EPRCP. The core perspective of the project which was knowledge intensive involved the overall process facilitating the formulation and development of interventions.

Modelling of the core perspective of the project will highlight the complex interactions among the myriad of stakeholders and illustrate resulting knowledge flows so as to understand and determine the quality of knowledge.

3.4   QUESTIONNAIRE DESIGN FOR PROJECT STAFF

Following through with the KMDL theoretical construct which asserts that participation of process participants is indispensable for accuracy in capturing and modelling knowledge intensive processes[171], the research developed a questionnaire to engage with five (5) individuals who were closely affiliated to the project.

The aim of the developed questionnaire was to confirm the findings of the desk research. The desk research supported by documentary evidence capturing elements involved in the knowledge intensive business process under analysis. The questionnaire attached as an annex to the thesis focused on the following;

- ➤ knowledge requirements for the various roles
- ➤ existing knowledge objects of various process participants
- ➤ views on effectiveness of knowledge facilitation in the project.

Information obtained from the questionnaire was used as input to model the knowledge

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[170] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[171] Gronau N, Korf R & Muller C. 2005. KMDL: Capturing, analysing and improving knowledge-intensive business processes.

intensive business process under analysis and aided the discussion of the information.

3.5   DATA COLLECTION PROCEDURE

To ensure transparency in undertaking the research, the researcher obtained formal permission to conduct the research at COMESA secretariat.

3.6   QUESTIONNAIRE ADMINISTRATION

As four (4) individuals who functioned as key project staff during its operationalisation are still under the service of the organisation, face to face interviews supported by the questionnaire were held. In a single case, the questionnaire was sent via electronic mail to an individual who has since left the organisation.

3.7   EXECUTION AND FINDINGS OF THE CASE ANALYSIS

The case analysis presented below gives an overview of a knowledge intensive business process of the EPRCP guided by the six (6) step KMDL procedural model.

3.8   STEP 1: IDENTIFICATION OF A KNOWLEDGE INTENSIVE BUSINESS PROCESS

The overall development and implementation process of the EPRCP was identified as a knowledge intensive business process[172]. As Step 2 of the procedural model will prominently highlight, the development and implementation process of the project was characterised by the following among others;

- the process was the primary perspective as it governed the overall functioning of the project at all levels
- the process required the collection and use of information and knowledge to support the execution of the identified tasks
- the process required specific process knowledge, generally expert involvement
- the process depended largely on human involvement and decisions relating to project development and implementation
- value was created along the process through the fulfilment of the knowledge requirements of the multiple process participants.
- following the organisational norm of doing business, the process was characterised by a predefined process structure and extended for a period of eight (8) years.

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[172] Definitions and understanding of knowledge intensive business processes discussed in chapter 2 of the thesis.

- collaborative interactions among the users was a major part of the process
- knowledge flows and knowledge transfers between media and persons were highly active.

3.9   STEP 2: CAPTURING OF THE KNOWLEDGE INTENSIVE BUSINESS PROCESS

The second step in the KMDL procedural model presents an elaborate sub-procedure which contains six steps which make up the process of capturing of the knowledge-intensive business process. The steps are as follows;

3.9.1   Definition of tasks associated to the process

Having identified the project development and implementation process as the knowledge intensive business process, the research distinguished the following tasks associated to the process;

a) *Project Planning*

The project planning task was a critical element in the overall functioning of the project as it was the activity which included the first level strategic guidance on the procurement reforms the project would spearhead in the member countries. It was during this task that technical details, reform issues and implementation plan development were executed[173]. Undertaking of this task was of critical importance to ensure that the approach for achieving the desired goal of the project was accurate and would have a wide impact.

b) *Project review*

The project planning task was succeeded by an expert review of the issues identified to constitute the project's implementation strategy. The project review task called for the discussion and exchange of views on public procurement and the provision of strategic leadership[174]. The task resulted in the generation of recommendations on the most appropriate interventions to be undertaken by the project in the member countries.

The task of reviewing and making recommendations made most use of the contextual dimension of quality knowledge.

c) *Consideration of legal requirements*

Subsequent to the project review task was the aggregated task which involved the consideration

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[173] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[174] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

of the recommendations within the required legal context and specifications.

The aggregated task of consideration of legal requirements was constituted by the following sub-tasks;

i) *Consideration of recommendations by the legal committees*

Knowledge outputs of the expert committee in the preceding task of project review were reviewed by legal committees. This task involved the contextualisation of knowledge to fit legal requirements and specifications.

ii) *Review of recommendations by the ministers of justice and attorneys general*

The knowledge outputs of the legal committees were thereafter presented to the ministers of justice and attorneys general for further consideration and approval.

d) *Decision Making*

The task involving decision making which succeeded the consideration of legal requirements was undertaken by the policy organs of the organisation which included the intergovernmental committee at the lower level and the council of ministers at the higher level.

The legislative mandate of the policy organs is derived from the COMESA treaty. As stipulated by the treaty, the task of decision making consists of the issuance of regulations, directives, decisions, recommendations and delivery of opinions[175].

The outputs of the decision making task include the following;

- a regulation that is binding on all the member countries in its entirety
- a directive shall be binding upon each member country to which it is addressed as to the result to be achieved but not as to the means of achieving it
- a decision shall be binding upon those to whom it is addressed
- a recommendation and opinion shall have no binding force[176].

e) *Implementation*

Project implementation is the aggregated task where planned activities were put into action. The task of implementation involved the preparation, deployment, maintenance and use of the final product of the project[177].

All projects planned regionally must ultimately be implemented by member countries. According to the Medium Term Strategic Plan for COMESA for the period 2011-2015, it is

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[175] COMESA Treaty.

[176] COMESA Treaty.

[177] United Nations Economic Commission for Africa. Module 4: Implementation of projects.

here at national level that plans are given concrete expression, where the "rubber meets the road[178]."

3.9.2   Identification of the information inputs and information outputs

The following information inputs and information outputs were identified as per the specific tasks outlined in the preceding section;

a)   *Project planning task*

The following were identified as the main information inputs into the task of project planning;

i)   *Completion report of the conception project*

The completion report of the PPRP was among the key information inputs into the planning task. A project completion report is an essential form of self-assessment and constitutes the link between project management and evaluation. A completion report is the preferred tool to show concrete results to a project's shareholders and accumulate knowledge within the institution. In addition, a completion report summarizes the project's contribution to development outcomes. Furthermore, a completion report assesses the degree to which a project achieved its development objective, delivered outputs as set out in an appraisal report; and prospects for a project's sustainability[179].

The completion report of the PPRP was therefore critical to ensure that follow up activities in the EPRCP would be kept in line with the overall objectives of the reform process.

ii)   *Baseline data diagnostics survey report*

A key output of the PPRP, the baseline data diagnostics survey report highlighted among other things the status of public procurement laws, regulations and procedures in each member country. The report was used as basis for designing and preparing the EPRCP[180].

iii) *The COMESA procurement directive*

Developed during the PPRP, the COMESA procurement directive was a key input into the planning task of the EPRCP. The procurement directive emphasised the need for all member countries to adopt modern national legislation on public procurement which would enhance

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[178] COMESA. 2010. Medium term strategic plan. Towards an integrated and competitive common market 2011-2015.

[179] Guidelines on Project Completion Reporting
http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/PCR%20Guidelines%20Approved%20by%20Ops%20%20Com%20%20on%2003-04-2009.pdf
accessed 2015/3/31.

[180] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

regional integration[181].

The procurement directive spelt out that public procurement reform in the COMESA region would best be attained among others through the adoption of modern legislation on public procurement where it did not exist or improvements of national legislation where it was outdated. Additionally, the directive called for the adoption of the principles and essential components of national legal frameworks for supporting projects on public procurement reforms[182]. The directive was therefore a critical input into the task as it guided the overall planning methodology.

iv) The COMESA treaty

The treaty was a key element into the planning task as it was the basis on which the organisation's integration agenda in its entirety is based.

v) Project technical reports

The project technical reports provided the planning task detailed technical knowledge on specific components pertinent to the project modalities. The components included procurement reforms, capacity building, the procurement information system and project management[183].

vi) Reports of the Project Steering Committee (PSC)

The reports of the PSC provided strategic guidance on the reform process and included critical inputs for review by the expert committee.

vii) Project implementation schedule

A project implementation schedule has been defined as a chart that clearly lists all the tasks necessary to complete the project and related deadlines. This schedule is the most important part of planning because it will become the tool to use for the monitoring and evaluation phases of the project[184].

The project implementation schedule spelt out the activities to be implemented over a period of four years. It presented the project implementation methodology and implementation schedule[185].

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[181] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[182] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[183] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[184] Project implementation schedule. http://www.fundsforngos.org/free-resources-for-ngos/project-implementation-schedule-youth-development-projects/ accessed 2015/3/31.

[185] COMESA.2007. Report of the second meeting of the committee of procurement experts.

Following the execution of the planning task with the support of the outlined information inputs, a strategic report was produced. The strategic report outlined consolidated reform issues and technical specifications the project would undertake in reforming public procurement laws and systems in the member countries[186].

b) *Project review task*

The strategic report produced during the project planning task was used as input into the project review task. The report facilitated the discussion and exchange of views on public procurement and supported strategic leadership.

As a result of this task, an expert report was produced outlining recommendations and views on public procurement and strategies for modernising public procurement reforms in the region[187].

c) *Consideration of legal requirements*

As an output of the project review task, the expert report was used as input into the task which involved the consideration of legal requirements and specifications. As a result of the task, reports of the legal committees and ministers of justice and attorneys general were produced in addition to drafted legal instruments[188].

d) *Decision making*

The information input into the task of decision making was the report of the ministers of justice and attorneys general. The report included recommendations as presented in the expert report as decisions for endorsement. As a result of the task, a council report was produced which provided information on technical programmes, policy decisions, regulations and directives[189]. Further, gazettes were published outlining the decisions passed by COMESA's policy organs.

e) *Implementation*

The aggregated task of implementation received as input, council reports and gazettes. In addition, legal instruments were passed for signature and ratification at member country level.

Key information outputs of the task of implementation were progress implementation reports which supported monitoring and evaluation of project activities. The progress implementation

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[186] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[187] COMESA. Aide memoire for third meeting of the technical committee of procurement experts.

[188] COMESA. 2004. Report of the meeting of the COMESA committee on legal matters.

[189] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

reports outlined detailed reviews highlighting project implementation performance including results achieved, key issues affecting implementation and recommendations to address them[190].

The figure below shows the sequence of the tasks and the corresponding information inputs and outputs.

Figure 7. **Tasks and corresponding information inputs and information outputs**

3.9.3 Assignment of persons to the specific roles executing the task

The research identified the following persons and groups who were assigned to specific roles under each identified task of the project. The research observed that as per the COMESA recruitment procedures, project staff originated from respective member countries. This was extended to consultants engaged to undertake specific roles.

a) Project planning

The project planning task in the knowledge intensive business process under analysis was assumed by the role of project management. Project management is the application of processes, methods, knowledge, skills and experience to achieve project objectives[191]. The following persons were identified as responsible for the role;

i) The project coordinator

The responsibility of the project coordinator in the role of project management was to oversee

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[190] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[191] What is Project Management? https://www.apm.org.uk/WhatIsPM/ accessed 2015/3/31.

the overall functioning of the project and supervise the project manager[192]. In addition, the coordinator was the link between the project, the steering committee and the development partner.

ii) *The project manager*

The main responsibility of the project manager was to oversee the implementation of all the project components, under the responsibility of the project co-ordinator. The manager was the key link between the project, the COMESA secretariat and the development partner[193].

iii) *The support and counterpart staff*

In addition to running the day to day operations of the project, the responsibility of the support and counterpart staff which included a regional technical expert and an administrative assistant[194], was to support the project manager in the implementation of the project and provide added expertise to member countries in the area of procurement reforms.

iv) *The project consultants*

The responsibility of the individual and firm project consultants was to provide specialised technical support in the identified competency areas[195].

v) *The project steering committee*

Headed by the project coordinator, the project steering committee was responsible for the co-ordination and monitoring of the planning and implementation of the project. The committee decided as and when required on any remedial actions that had to be taken to ensure that the project objectives were achieved and that the implementation schedule was adhered to[196].

To promote diversity and an integrated programme approach within the wider organisational framework, members of the project steering committee comprised of the following;

- assistant secretary-general of the organisation (chairperson)
- director, legal and institutional affairs (project coordinator)
- director, trade, customs and monetary affairs
- director, information technology
- chief technical cooperation officer

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[192] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[193] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[194] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[195] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[196] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

- three (3) representatives of national procurement agencies (2 government and 1 private sector) from the member countries.
- project manager, secretary [197].

b) *Project review*

The project review task was assumed by the role of technical expertise which was provided by a technical committee. The committee was made up of heads of national procurement agencies from the member countries and procurement experts[198].

The provision for an expert committee for the project, as a key output of the PPRP sought to create a permanent institutional structure within COMESA. The purpose of the committee was to provide continuing strategic guidance to the member countries regarding the reform initiative thereby providing a mechanism for sustaining the reform effort[199].

c) *Considerations of legal requirements*

The task of considerations of legal requirements was assumed by the role of legal expertise. The legal expertise was provided by the legal committees and ministers of justice and attorneys general.

The legal committees comprised of senior legal counsels and practitioners of respective member countries[200]. The higher legal expertise responsible for approval of outputs of the committees comprised of holders of the offices of ministers of justice or attorneys general of the respective member countries[201].

d) *Decision making*

The task of decision making was assumed by the role of decision makers as prescribed by the treaty of COMESA. The role was assigned to the policy organs which include the intergovernmental committee comprising of permanent secretaries of the designated co-ordinating ministries of member countries responsible for issues relating to regional integration and economic affairs. At the higher level, the council of ministers comprises of individuals holding the ministerial position in the same ministry[202].

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[197] frican Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[198] COMESA. 2007. Report of the second meeting of the committee of procurement experts.

[199] COMESA. 2004. Report of the first meeting of the committee on public procurement.

[200] COMESA. 2004. Report of the meeting of the COMESA committee on legal matters.

[201] COMESA. 2004. Report of the meeting of COMESA ministers of justice and attorneys general.

[202] COMESA Treaty. 1994.

e) Project implementation

The aggregated task of project implementation assumed by the role of implementers comprised of the following;

i) Member countries

The member countries at national and institutional level played a crucial role in actualising plans by putting into action the knowledge created during the knowledge intensive process.

ii) Project steering committee

The project steering committee was responsible for the co-ordination and monitoring of project implementation.

iii) Project management team (Project manager, project support and counterpart staff)

Under the task of implementation, the responsibility of the project management team consisting of the project manager, project support and counterpart staff was to oversee the day to day management and operations of the project and provide technical support.

iv) Project consultants

The responsibility of the individual and firm consultants was to provide specialised technical support in the project's identified competency areas to enable the task of implementation.

v) Development partner

The key responsibility of the development partner was to provide financial support and follow up on project implementation.

3.9.4   Specification of role requirements

The following role requirements were identified as per the distinct roles in the knowledge intensive business process under analysis;

a) Project management

To undertake the role of project management within the context of the EPRCP, the following knowledge requirements were prescribed;

i) Knowledge in project management

As the science and art of organising the components of a project[203], knowledge in project management was required to enable the effective organisation of the project components.

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[203] What is project management? http://www.mpug.com/education/what-is-project-management/ accessed 2015/3/31.

ii) *Project knowledge*

To effectively and efficiently manage a project, a critical role requirement was knowledge specific to the project including; background, rationale, objectives, expected outcomes, activities, and financing and implementation arrangements. Project knowledge is essential to track implementation and outputs systematically, as well as measure the effectiveness of programmes. Knowledge in project elements helps to determine exactly when a project is on track and when changes may be needed[204].

iii) *Knowledge in public procurement*

Knowledge and understanding of public procurement systems and regulations at the regional level as per the directive and at the national level were required particularly to ensure that the appropriate mechanisms and frameworks were put in place to facilitate the reform process.

iv) *Knowledge in the requirements of member countries*

Knowledge in the requirements of member countries in the public procurement was required to ensure that project activities were focused on addressing the identified gaps in public procurements systems, laws and regulations. For example, it was observed that the effectiveness and efficiency of public procurement in many member countries was for years undermined by weak institutional arrangements and lack of capacity among others[205]. Knowledge of these challenges would ensure the development of appropriate project activities. Further, knowledge in the requirements of member countries ensured that project activities were modelled to fit the context of respective member countries.

v) *Specialised knowledge*

Specialised knowledge is specific, accurate and professional. It is knowledge that represents a special subject. Holders of specialised knowledge are said to have know how in specific subjects[206]. Specialised knowledge was required for the role of project management to ensure that project activities in the reform process were developed to target specific areas pertinent in supporting the reform process in the member countries.

vi) *Communication and coordination*

Communication and coordination was a critical role requirement for project management as

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[204] Why is monitoring and evaluation important? http://www.endvawnow.org/en/articles/331-why-is-monitoring-and-evaluation-important.html accessed 2015/5/21.

[205] COMESA. 2011. Report of the eighth meeting of the project steering committee.

[206] Importance of specialised knowledge. http://bobullman.com/marketing-tools/importance-specialized-knowledge/ accessed 2015/5/6.

this ensured that follow up and collaborative tasks were well communicated and integrated into the overall knowledge intensive process.

vii) Knowledge of political will

Knowledge and understanding of political will as well as conditions and systems that may sustain or undermine project interventions was a critical requirement for the role of project management. This is due to the high level nature of the political dynamics at play in regional economic communities. Knowledge of political will was therefore required for the project to support the development of appropriate mechanisms from the onset that leveraged existing political conditions and systems in participating countries.

b) Technical expertise

To execute the role of technical expertise under the task of project review, the following requirements were prescribed;

i) Public procurement knowledge

Expert procurement knowledge was required to understand the elements involved in public procurement processes and the relationships between them. Further, higher level knowledge was required in understanding the public procurement process at the national and regional levels and how these aligned to facilitate the adherence to the COMESA procurement directive.

ii) Knowledge in the requirements of member countries

Knowledge in the requirements of member countries in the public procurement sector was required to ensure that the technical expertise rendered to the project addressed the specific needs and challenges experienced in the member countries.

iii) Project Knowledge

As key partners in undertaking implementation of the project at member country level, project knowledge was critical in the role of technical expertise to ensure that all activities were undertaken within the overall framework of the project and implementation schedule.

c) Legal considerations

The following requirements were identified to enable the execution of the role of legal considerations;

i) Knowledge in drafting of legislation

Knowledge in drafting of legislation was critical to the execution of the role of technical expertise. Knowledge in drafting of legislation was required to ensure that the appropriate type

of technical writing was used to express the legal analysis and application of laws[207], within the context of the legislative reform process advocated by the project.

ii) Knowledge in legal requirements

Knowledge in legal requirements was required due to the need to adhere to the legal requirements as set out by the COMESA Treaty.

iii) Knowledge in public procurement

Knowledge in public procurement was required to enable the development and drafting of meaningful laws and regulations.

iv) Knowledge in national constitutions, laws and policies

Knowledge in national constitutions, laws and policies was required to ensure that drafted laws were aligned to and compliant with respective national constitutions, laws and policies of member countries.

d) Decision makers

The research identified the following requirements necessary to execute the role of decision makers:

i) Knowledge in regional development and cooperation

The decision makers required knowledge and understanding of regional development and cooperation modalities. Knowledge in regional development and cooperation   ensured that decision making was in line with development efforts and within regulatory frameworks and practices to support policy harmonisation at the regional level.

ii) Knowledge in the requirements of member countries

Knowledge in the requirements of member countries was required to ensure that decisions passed by the policy organs were targeted towards addressing the specific needs and challenges of member countries in the procurement sector. Knowledge in the requirements of member countries relates to the contextual quality of knowledge.

iii) Project knowledge

Project knowledge as it particularly related to implementation progress was a critical knowledge requirement for decision making. Project knowledge is essential in helping decision makers acquire the understanding they need to make informed decisions about project

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[207] Legal writing. https://en.m.wikipedia.org/wiki/Legal_writing accessed 2015/7/7.

operations[208].

iv) Communication and coordination

Communication and coordination was a critical knowledge requirement for the role decision makers due to the fact that decisions once passed required to be effectively communicated and coordinated at the project implementation level.

e) Implementation

To make certain that project plans were actualised, the following role requirements were identified to enable skilful action;

i) Project knowledge

Implementers required knowledge and understanding of the project components and how these worked together to achieve the desired objectives. Knowledge in public procurement at the national level and how the sector was harmonised through laws and regulations at the regional level was particularly critical.

Further, an understanding of the project implementation schedule and progress achieved was required to ensure alignment in the task performance.

ii) Member country requirements

Member country requirements in the public procurement sector were required for the role of implementers to ensure that project activities were targeted towards addressing the identified gaps in public procurement systems, laws and regulations at the member country level.

iii) Specialised knowledge

Specialised knowledge was a critical requirement for the role of implementers for the reason that it enabled skilful and appropriate action to be undertaken in support of project implementation. The required specialised knowledge was identified in the project principle components as follows; enhancing procurement reforms, capacity building, upgrading the procurement information system and project management[209].

iv) Communication and coordination

Implementation of project components on the ground required knowledge in communication and coordination mechanisms to ensure the effective and precise transfer of information and

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[208] Evidenced based policy making: A guide for effective government. http://www.pewtruts.org/~/media/Assets/2014/11/EvidencedBasedPolicymakingAGuideforEffectiveGovernment.pdf accessed 2015/4/1.

[209] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

collaborative action in the undertaking of activities. Knowledge in communication and coordination was particularly critical for the interaction between the project management team, the participating agencies at the national level and the consultancy work which required high levels of engagement with stakeholders.

For instance, the consultants engaged by the project to assist in undertaking awareness and sensitisation on the modern public procurement framework were required to explain to ministers and government officials in member countries and all key private sector players on objectives of public procurement reforms in COMESA[210]. The ability to create awareness and sensitise stakeholders required know-how in communication and coordination.

3.9.5   Assignment of knowledge objects to the accompanying persons

The research found the following knowledge objects for the persons and groups responsible for the roles undertaking the respective tasks in the knowledge intensive business process under discussion;

a) Project management

The knowledge objects present in the role of project management as per the specific holders were as follows;

i)   Project coordinator

Owing to the nature of the project whose main focus was the harmonisation of public procurement laws and regulations in the region, the role of project coordinator was assigned to the director of legal and institutional affairs of the organisation.

The research found that the project coordinator as an advocate of the law carried the following qualifications; Latin Legum Magister (LLM), Masters of Law, and a Legum Baccalaureus (LLB) Bachelor of Laws. The qualifications are in addition to a number of post graduate professional qualifications. Owing to his qualifications and over 20 years of experience, the project co-ordinator was knowledgeable in the following;

- project knowledge: due to his close affiliation to the project and responsibility for coordination, the coordinator was knowledgeable in the key project elements which included background, rationale, objectives, expected outcomes, activities, and financing and implementation arrangements.

- law, government and organisation: knowledge of laws, legal codes, court procedures,

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[210] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

precedents, regulations, and executive orders.

- english language: knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar particularly as it pertains to legal writing and drafting.

- public procurement owing to his position as coordinator of the PPRP and EPRCP and position on the United Nations Commission on International Law Working Committee on Public Procurement.

- administration and management: knowledge of business and management principles particularly involved in coordination of people, resources and monitoring and evaluation among others.

ii) *Project manager*

The research found that the project manager was a qualified public procurement practitioner and management accounting specialist with expertise in running multi-donor funded projects, all with a strong developmental impact. The project manager's previous work involved the management of regional and country projects with mission critical deadlines and the development of legal and regulatory procurement frameworks and capacity building.

Further, as a procurement specialist, the project manager had hands-on experience in procurement processes for goods, works and consultancy services covering procurement strategy and planning, development of tender documents, bid evaluation and post-contract performance. In addition, the project manager's knowledge and skills extended to information communication technologies particularly e-Government Procurement (e-GP).

iii) *The support and counterpart staff*

The project support and counterpart staff consisted of a regional technical expert and an administrative assistant to assist in the management and running of the day to day activities of the project. The research observed the following knowledge objects embodied by the staff;

- similarly to the project manager, the regional technical expert was a qualified public procurement specialist trained in economics and law with sixteen (16) years of experience. It was therefore concluded that in addition to being knowledgeable in the project elements and member country requirements due to close affiliation to the project, the expert was knowledgeable in public procurement systems and processes and economics and the law.

- the administrative assistant responsible for undertaking the day to day office activities was a qualified secretary with over twelve (12) years of experience. The administrative

assistant was therefore knowledgeable in office management and logistics within the context of project management.

iv)   *Project consultants*

Owing to the specialised nature of the technical support required to meet the demanding requirements of the project as per the specific components, emphasis was placed on the need for individual and consulting firms to demonstrate expertise in the specific subject matters. The subject matters included policy and legislative development (including awareness and sensitisation), development of training systems, capacity building in public procurement and information technology. In addition, insistence was placed on the need for specialists with international exposure covering diverse procurement systems including those of the development partner[211].

To this end, the research found that the consultants engaged by the project in addition to being knowledgeable in the specialised subject matters, had expertise and experience in public procurement and the law. In most cases, the consultants had over ten (10) years of experience in delivering successful projects in the public and private sectors in member countries.

v)   *Project Steering Committee (PSC)*

The research found that in addition to knowledge in the project modalities and in the regional procurement system, members of the project steering committee were knowledgeable in their specific expert areas namely legal and trade matters, information and technology and technical cooperation. The diverse and cross sectional specialised knowledge that was required into the strategic input process was therefore present. In regards to representation of national procurement agencies of the member countries in the committee, the research found that only two (2) national agencies were part of the committee, namely Mauritius and Ethiopia. Further, only one (1) private sector representative was part of the committee[212]. The research therefore concluded that knowledge in specific member country requirements as well as private sector requirements were generally deficient due to inadequate representation.

b) *Technical expertise*

The knowledge objects of the members of the technical committee who assumed the role of technical expertise were identified through an analysis of the composition of the committee in terms of the required representation. A review of the terms of reference for membership in the

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[211] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[212] COMESA. Report of the eighth meeting of the project steering committee.

committee indicated that respective heads of national procurement bodies of the member countries were mandated to be a part of the committee; in their absence, their deputies were mandated to attend.

The table below shows the level of participation by respective heads or deputies of national procurement bodies of the member countries[213], in the meetings of the committee during the period 2004-2012.

Table 2. Level of participation by the head or deputy of national procurement agencies of the member countries in the meetings of the TCPE during the period 2004-2012.

COUNTRY / MEETINGS	BU	CO	COM	DJ	EG	ER	ET	KE	LI	MA	MAL	MAU	RW	SE	SU	SW	UG	ZA	ZI
1st Meeting of TCPE, 27-28 April 2004, Lusaka, Zambia			NS			NS			NS	NS			NS	NS	red	NS			
2nd Meeting of TCPE, 18-19 July 2007, Lusaka, Zambia					red	NS			red	NS	NS						NS	NS	
3rd Meeting of TCPE, 23-25 July 2008, Nairobi, Kenya						NS			red								NS	NS	
Extra-ordinary Meeting of the TCPE on the COMESA Draft Procurement Regulations, 18-20 Dec 2008, Mombasa, Kenya				NS		NS			NS					NS					
4th Meeting of TCPE, 22-23 Sept 2009, Harare, Zimbabwe					red	NS			NS	NS									
5th Meeting of TCPE, 1-2 July 2010, Elzulwini, Swaziland				NS		NS			red	NS						NS			
6th Meeting of TCPE, 15-16 March 2011, Lilongwe, Malawi	NS					NS			NS	NS							NS	NS	
3rd Extra-Ordinary Meeting of TCPE, 1-3 Dec 2011, Kigali, Rwanda			NS						NS			red							
8th Meeting of TCPE, 28-30 March 2012, Lusaka, Zambia				NS	NS	NS			NS					NS	red				NS

Note: The yellow highlight in the table indicates the attendance by the head or deputy of a national procurement agency in the meetings of the technical committee of experts. The red

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[213] Burundi (BU), Democratic Republic of Congo (CO), Comoros (COM), Djibouti (DJ), Egypt (EG), Eritrea (ER), Ethiopia (ET), Kenya (KE), Libya (LI), Madagascar (MA), Malawi (MAL), Mauritius (MAU), Rwanda (RW), Seychelles (SE), Sudan (SU), Swaziland (SW), Uganda (UG), Zambia (ZA) and Zimbabwe (ZI).

highlight shows participation by a different institution. NS denotes non-participation of a member country.

From the table 2 above, the research observed that as required, high level representation was present at the meetings as the heads or deputy heads of national procurement bodies were in attendance. The research found that over 70% of the meeting participants from the respective member countries were heads or deputies of national procurement bodies.

The research further found that technicians from various partner ministries in the member countries responsible for procurement matters and a few representatives of national learning institutions were also in attendance in the meetings of the technical experts[214]. The research therefore concluded that members of the committee were knowledgeable in the expert area of procurement practices, specifically public procurement and requirements of the specific member countries at the national level.

c) *Legal considerations*

The knowledge objects present in the role of legal expertise as per the specific holders were as follows;

i)   *The legal committees*

The research found that members of the legal committees from the respective member countries were senior legal counsels and practitioners from ministries concerned with justice and legal issues[215]. It was therefore concluded that they embodied knowledge as follows;

- knowledge in drafting legislation enabled the appropriate type of technical writing used to express legal analysis and application of laws[216], within the context of the legislative reform process advocated by the project.
- knowledge in legal requirements and specifications enabled experts to adhere to the legal requirements and specifications as set out by the COMESA Treaty in the processes of preparation of legal instruments so as to ensure application.

In addition, the research found that the legal committees involved procurement experts[217], to facilitate the development of meaningful and applicable laws and regulations. The research concluded that knowledge in public procurement was present during the execution of legal

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[214] COMESA. Reports of the technical committee of experts.

[215] COMESA. Reports of the COMESA legal committees.

[216] Legal writing. https://en.m.wikipedia.org/wiki/Legal_writing accessed 2015/7/7.

[217] COMESA. Reports of the technical committee of experts.

considerations.

ii)   Ministers of justice and attorneys general

A minister of justice often the head of a ministry of justice of a country is responsible for organising the justice system, overseeing the public prosecutor and maintaining the legal system and public order. Some ministries have additional responsibilities in related policy areas overseeing elections, directing the police and law reform[218]. This cabinet position is usually reserved for persons with formal legal training[219].

In most common law jurisdictions, the attorney general is the main legal advisor to the government. In some jurisdictions the attorney general may also have executive responsibility for law enforcement, public prosecutions or even ministerial responsibility for legal affairs generally. The term attorney general was originally used to refer to any person who holds a general power of attorney to represent a principal in all matters. In the common law tradition, anyone who represents the state, especially in criminal prosecutions, is such an attorney[220].

In light of the above, the research assumed that the ministers of justice and attorney generals who represented the member countries in the role of legal considerations were knowledgeable in national constitutions, the law and policies. The embodiment of knowledge in national constitutions, laws and policies implies an understanding of the set of fundamental principles or established precedents according to which a state or other organisation is governed[221].

d) Decision makers

Owing to the positions of the members of the policy organs as decision makers in their respective governments at member country level, the research not from a definite stand point assumed that the members were knowledgeable in member country requirements. In addition, it was assumed that general political knowledge in policy and governance was present.

e) Implementation
i)   Member countries

In attempting to identify the knowledge objects possessed by the member countries, the level of implementation of the national policy and legislative process driven by the EPRCP was analysed. Concerning the procurement directive, it was reported that on account of the passage

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[218] Justice ministry. http://en.wikipedia.org/wiki/Justice_ministry accessed on 2015/7/5.

[219] Justice ministry. http://en.wikipedia.org/wiki/Justice_ministry accessed on 2015/7/5.

[220] Attorney general. http://en.wikipedia.org/wiki/Attorney_general accessed on 2015/4/7.

[221] Constitution. http://en.wikipedia.org/wiki/Constitution accessed on 2015/4/28.

of the directive in March 2002, nine (9) member countries had embarked on legislative reforms; as at May 2006, three (3) countries had passed modern procurement laws[222]. A report produced in March 2011, a year before closure of the project indicated that twelve (12) out of nineteen (19) member countries had passed the new procurement law[223]. In addition, twelve (12) out of nineteen (19) member countries had passed the required legislation and created policy and monitoring bodies[224]. In addition, the appraisal report of the EPRCP observed that the procurement directive which was binding to all member countries had a good impact as the countries were sufficiently conscious on the need for reform[225].

In view of the above findings regarding the level of implementation of the national policy and legislative process driven by the EPRCP, the research drew the inference that the member countries were to some degree knowledgeable of the regional public procurement directive as well as the national procurement laws which were home grown.

Notwithstanding the ample legislative reform process in the member countries which showed an average implementation rate of 63%[226], the research found that mainstreaming of the new laws through compliance at the regulatory level was low. Mainstreaming of laws ensures that policy and administrative measures are put in place to implement regional agreements, decisions, and protocols at the national level. Mainstreaming involves giving force by a member country to a regional commitment by passing appropriate implementation, application and enforcement means[227]. The research therefore concluded that while the appropriate legislation was passed to advance the harmonisation of public procurement laws in a majority of the member countries, enactment of specific requirements in terms of regulations was low. For instance in December 2010, four (4) years after the commencement of the project, it was reported that all nineteen (19) member countries had not mainstreamed provisions of the directive into national law[228]. Further, only three (3) out of nineteen (19) member countries at 16% had advertised on the regional web-based portal which was developed to ensure that information on procurement opportunities would be widely accessible in a cost effective

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[222] frican Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[223] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[224] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[225] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[226] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[227] COMESA Report. 2012.

[228] COMESA. 2011. Report of the eighth meeting of the project steering committee.

manner[229].

In view of the findings, the research concluded that while a considerable number of the member countries particularly through respective national procurement agencies were knowledgeable in national procurement laws and the regional procurement directive as facilitated by the project, knowledge to enable skilful action in support of mainstreaming appropriate laws as generally deficient.

Further, it was observed that although national agencies responsible for managing national procurement needed to be familiar with the requirements that define procurement systems and the relation and linkages with various aspects of economic growth such as private sector development, the knowledge was not widely present among the key procurement functionaries.

ii)   *Project steering committee*

The knowledge objects of the project steering committee included; knowledge in project modalities, public procurement and expert knowledge.

iii)   *Project management team*

The project management team had a dual responsibility of planning project modalities and facilitating and coordinating implementation. The key knowledge objects embodied by members of the team included knowledge in project management, public procurement, the project, expert knowledge and member country requirements.

iv)   *Project consultants*

The project consultants in addition to knowledge in the law were knowledgeable in the specialised knowledge areas of policy and legislative development including awareness and sensitisation, development of training systems, capacity building in public procurement and information technology.

v)   *Development partner*

The research found that the key development partner of the project who acted as the main source of funding was established to help development efforts on the African continent. A key thrust of the development work was to contribute to the institutionalisation of good governance and to facilitate economic cooperation and regional integration among African countries[230].

Among the priority areas of the development partner as outlined in its policy guidelines for

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[229] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[230] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

financing are support for good governance with focus on fiscal management, procurement, accountability, transparency, regional and economic cooperation and integration and capacity building[231].

In view of the above, the research concluded that the development partner was knowledgeable in issues relating to continental development and the financing of regional and national projects.

3.10   SUMMARY OF STEPS 1 THROUGH 2 OF THE KMDL PROCEDURAL MODEL

Having executed Steps 1 through 2 of the KMDL procedural model supported by a review of existing project documentation and the administered questionnaire, table 3 below outlines a summary of the findings. The findings represent the capturing of the knowledge intensive business process of the EPRCP which was the focus of the KMDL analysis. The summary gives a representation of the required and existing information and knowledge that enabled the undertaking of tasks assumed by various roles in support of the development and implementation process of the EPRCP for the period 2004 to 2012[232].

3.11   A KNOWLEDGE FLOW MODEL FOR THE EPRCP

Having comprehensively captured the knowledge intensive business process underlying the development and implementation of the EPRCP, the summary of findings was used as input into the modelling process using the K-Modeler of the KMDL. The modelling exercise undertaken by the researcher, used the graphical integration platform Eclipse on which the K-Modeler is engineered. As a result, the knowledge flow model presented below as figure 8 was generated.

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[231] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[232] The process was characterised by the key properties of a knowledge intensive process presented in chapter 2 of the thesis.

Table 3. Summary capturing the knowledge intensive business process of the EPRCP project using steps 1 through 2 of the KMDL procedural model

	The Development and Implementation Process of the EPRCP Project					
Tasks associated to the process	*Information In*	*Information Out*	*Role*	*Assignment of Persons to Specific Roles executing the task*	*Specification of role Requirements*	*Assignment of Knowledge Objects to accompanying persons*
Project Planning	(i) PPRP completion report (ii) Baseline data diagnostics survey report (iii) COMESA procurement directive (iv) COMESA Treaty (v) Technical reports (vi) PSC reports (vii) Project implementation schedule	Strategic report	Project management	Project coordinator, Project manager, Support and counterpart staff, Project consultants & PSC	(i) Project management knowledge (ii) Project knowledge (iii) Public procurement knowledge (iv) Member country requirements (v) Specialised knowledge (vi) Communication and coordination (vii) Political will	**Project coordinator** (i) Project knowledge (ii) Knowledge in the law (iii) Legal drafting (iv) Public procurement (v) Administration and management **Project manager** (i) Project management (ii) Project knowledge (iii) Public procurement knowledge (iv) Management accounting &ICT (v) Member country requirements **Support and counterpart staff** (i) Project knowledge (ii) Public procurement knowledge (iii) Knowledge in economics and the law (iv) Member country requirements (v) Office management **Project consultants** (i) Specialised knowledge (ii) Public procurement (iii) Knowledge in the law (iv) Member country requirements **PSC** (i) Project knowledge (ii) Public procurement (iii) Subject expert knowledge
Project review	Strategic report	Expert report	Technical expertise	Technical Committee of Procurement Experts (TCPE)	(i) Public procurement knowledge (ii) Member country requirements (iii) Project knowledge	(i) Public procurement (ii) Member country requirements
Consideration of legal requirements	Expert report of the TCPE	(i) Reports of the meetings of the ministers of justice and attorneys general (ii) Reports of the legal committees (iii) Legal instruments	Legal expertise	Legal Committees and Ministers of Justice and Attorneys General	(i) Knowledge in drafting legislation (ii) Legal requirements (iii) Public procurement knowledge (iv) Knowledge in national constitutions, laws and policies	**Legal Committees** (i) Knowledge in legal drafting (ii) Legal requirements and specifications (iii) Public procurement **Ministers of Justice and Attorneys Generals** (i) Knowledge in national constitutions, laws and policies
Decision making	(i) Reports of the ministers of justice and attorneys general (including recommendations on the TCPE conveyed as decisions of ministers of justice for endorsement (ii) Legal instruments (for noting)	(i) Council of Ministers Reports (ii) Inter-governmental Committee Reports	Decision makers	(i) Inter-Governmental Committee (ii) Council of Ministers	(i) Regional development and cooperation knowledge (ii) Member country requirements (iii) Project knowledge (iv) Communication and coordination	(i) Member country requirements (ii) Policy and governance

| Implementation | (i) Council of ministers reports
(ii) Legal instruments
(iii) Gazettes | Progress implementation reports | Implementers | (i) Member countries
(ii) PSC
(iii) Project management team (project manager, counterpart and support staff)
(iv) Project consultants
(v) Development partners | (i) Project knowledge
(ii) Member country requirements
(iii) Specialised knowledge
(iv) Communication and coordination | **Member countries**
(i) Knowledge in the public procurement directive
(ii) National procurement laws
PSC
(i) Project knowledge
(ii) Public procurement knowledge
(iii) Subject expert knowledge
Project management team
(i) Project management
(ii) Public procurement
(iii) Project knowledge
(iv) Expert knowledge
(v) Member country requirements
Project consultants
(i) Specialised knowledge
(ii) Public procurement knowledge
(iii) Knowledge in the law
(iv) Member country requirements
Development partner
(i) Regional development efforts
(ii) Financing of development efforts |

Figure 8: Knowledge flow model for the EPRCP
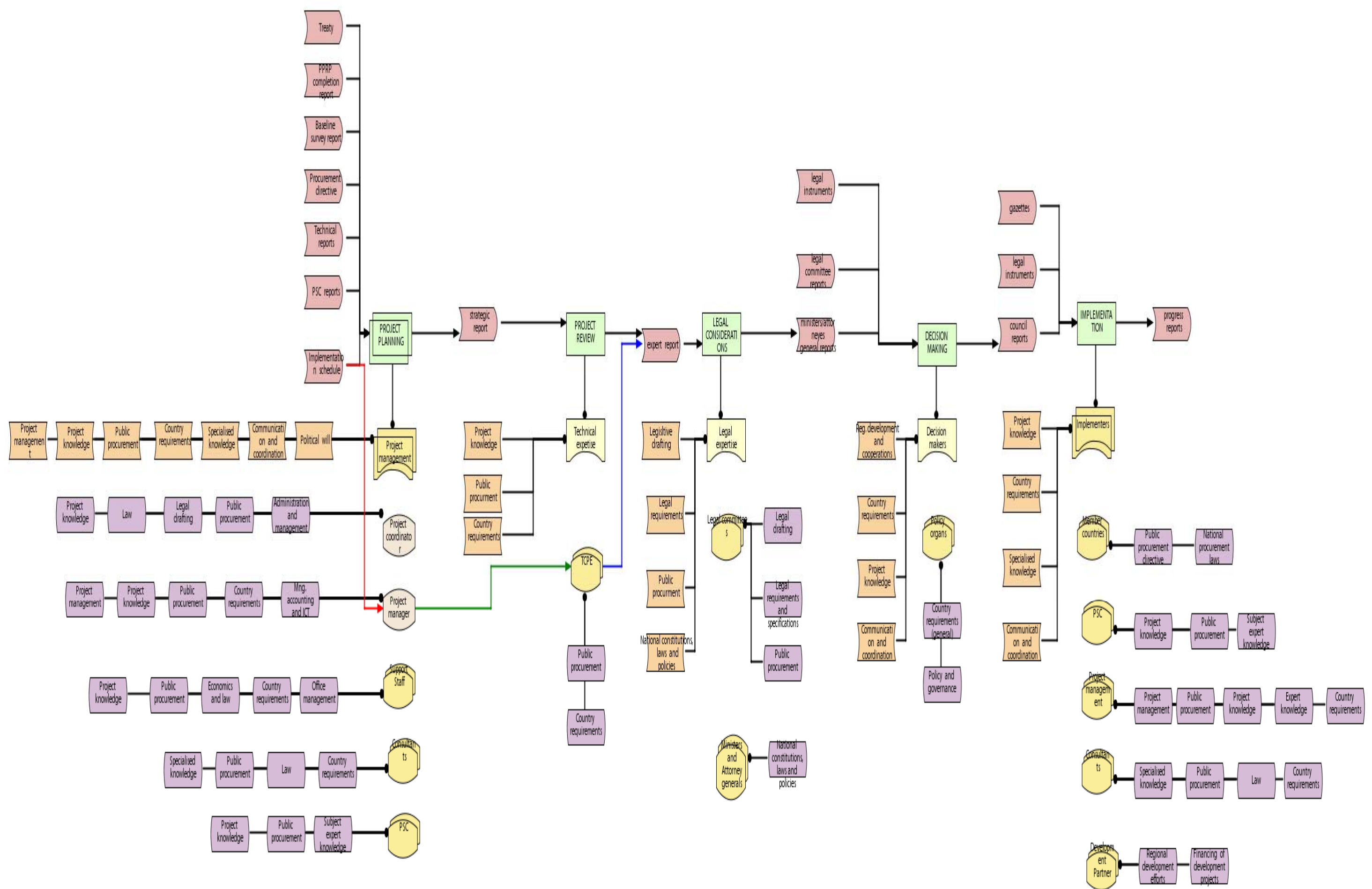
3.12   PROCESS DATA GENERATED BY THE K-MODELER

The process data generated by the K-Modeler following modelling of the knowledge intensive business process of the EPRCP is presented as follows:

The table below shows the usage of the KMDL objects represented as nodes in the knowledge flow model.

*Table 4. **Usage of KMDL objects in the knowledge flow model.***

NODE TYPES		
TYPE	NODE TYPE	USAGE
Aggregated role	Aggregated role	2
Aggregated task	Aggregated task	1
Information objects	Information objects	15
Knowledge objects	Knowledge objects	46
Person	Person	2
Knowledge Requirements	Knowledge Requirements	22
Roles	Roles	3
Task	Task	4
Teams	Teams	10

The table below shows the usage of information objects represented as nodes.

*Table 5. **Representation of usage of information objects in the knowledge flow model.***

Baseline survey report	**Baseline survey report**	EPRCP 1 (1)	1
Council reports	Council reports	EPRCP 1 (1)	1
Expert report	Expert report	EPRCP 1 (1)	1
Gazettes	Gazettes	EPRCP 1 (1)	1

Implementation schedule	Implementation schedule	EPRCP 1 (1)	1
Legal committee reports	Legal committee reports	EPRCP 1 (1)	1
Legal instruments	Legal instruments	EPRCP 1 (1)	1
Ministers/attorneys general reports	Ministers/attorneys general reports	EPRCP 1 (1)	1
PPRP completion report	PPRP completion report	EPRCP 1 (1)	1
Procurement directive	Procurement direction	EPRCP 1 (1)	1
Progress reports	Progress reports	EPRCP 1 (1)	1
PSC reports	PSC reports	EPRCP 1 (1)	1
Strategic report	Strategic report	EPRCP 1 (1)	1
Technical reports	Technical reports	EPRCP 1 (1)	1
Treaty	Treaty	EPRCP 1 (1)	1

The table below shows the usage of knowledge requirements and knowledge objects represented as nodes.

*Table 6. **Representation of usage of knowledge requirements and information objects in the knowledge flow model***

Type/Label	Node Type	
	Knowledge Requirement	**Knowledge Object**
	USAGE	USAGE
Administration and management	-	1

Communication and coordination	3	-
Country requirements	4	6
Country requirements (general)	-	1
Economics and law	-	1
Expert knowledge	-	1
Financing of development projects	-	1
Law	-	3
Legal drafting	1	2
Legal requirements and specifications	1	1
Management accounting and ICT	-	1
National constitutions, laws and policies	1	1
National procurement law	-	1
Office management	-	1
Policy and governance	-	1
Political Will	1	
Project knowledge	4	6
Project management	1	2
Public procurement	3	10
Public procurement directive	-	1

Regional development efforts	-	1
Regional development and cooperation	1	
Specialised knowledge	2	2
Subject expert knowledge	-	2
Total Usage	**22**	**46**

3.13   Characteristics of the EPRCP knowledge intensive business process

The generated process data showed the following characteristics of the knowledge intensive business process of the EPRCP;

(i)   The aggregated roles included project management and implementers

(ii)   Project planning was the single aggregated task

(iii)   The usage of fifteen (15) information objects was recorded with a majority of these feeding into the project planning task as input.

(iv)   A total of forty six (46) knowledge objects were recorded as used in the process. Highlighting the key focus of the project under analysis, the highest knowledge intensity was observed in the following areas; public procurement, project knowledge and country requirements.

(v)   Two (2) persons were shown to be active in the process namely the project coordinator and manager while ten (10) teams were present including; consultants, development partner, legal committees, member countries, ministers and attorneys generals, policy organs, project management team, the project steering committee, support staff and the technical committee of experts.

(vi)   The consultants and the project steering committee were active in two (2) tasks namely the project planning and implementation tasks.

(vii)   A total of twenty two (22) knowledge requirements were recorded as used in the process. Of these the highest in demand were the following areas; communication and coordination, country requirements, project knowledge, public procurement and specialised knowledge.

(viii)   An examination of the knowledge descriptors present in the process as per specific tasks which allowed for the comparison of the identified knowledge requirements against the existing knowledge objects showed that these were met to a large extent in the following areas;

- country requirements
- legal requirements and specifications
- legal drafting
- national constitutions, laws and policies.

In addition to the above, the following conclusions were drawn from the process data;

(i)   The critical knowledge requirement of political will was not present as a knowledge object in the process particularly during the project planning task signifying a knowledge gap in the process.

(ii)   The intensity of specialised knowledge was low in the process. This shows a weakness in the process particularly during the implementation task due to the fact that the demand for specialised knowledge at member country level was high owing to the technical nature of the project.

(iii) Communication and coordination as a critical knowledge requirement was not present as a knowledge object in the process.

3.14   CONCLUSION

This chapter presented the case analysis of the research which focused on the execution of steps one and two of the KMDL procedural model. Execution of the steps (one and two) allowed for modelling supported by the K-Modeler of the knowledge flows inherent in the development and implementation process of the EPRCP which was the core perspective of the project.

The generated knowledge flow model showed the intricacies and complexity of knowledge interactions that are present in regional economic communities and determine knowledge flows and subsequently it quality. Knowledge gaps affecting the quality in the knowledge intensive business process were evident in comparing elements in the existing knowledge descriptors. Further, the knowledge flow model by allowing the visualisation of the effect of one variable on another which in this case referred to the respective tasks allowed for the determination of the effect on the quality of knowledge in the overall process.

Lastly, the generation of the knowledge flow model shows that the KMDL theoretical framework can be used to capture knowledge intensive business processes of complex

organisations in which multiple variables are at play in the dynamic process of knowledge creation and application.

Chapter 4

Presentation and Discussion of Findings

4.1   INTRODUCTION

The preceding case analysis points to the fact that quality knowledge is essential to support and facilitate effective knowledge intensive business processes inherent in regional economic communities. Quality knowledge raises the level in the manner knowledge intensive business processes are executed and ensures that knowledge outputs in support of interventions for various projects and programmes are fit for purpose.

Use of the KMDL procedural model, particularly the step involving modelling of knowledge flows inherent in the knowledge intensive business process of the EPRCP and the resulting process data from the K-Modeler, highlighted the myriad of variables present in the process. The generated knowledge flow model showed the information and knowledge objects that were present in the process and how these interacted. The flow of knowledge was particularly observed in knowledge conversions alongside the execution of the various tasks in the process. According to Muller et al, the modelling of the used and generated information and knowledge objects and the knowledge conversions enriches the sequential description of the knowledge intensive process[233].

To bring to light pertinent issues, the thesis focused on distinct aspects believed to have a heavy influence on knowledge flows and subsequently the quality of knowledge in core perspectives that guide the development and implementation processes of interventions put into effect by

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[233] Muller C, Bahrs J & Gronau N. 2005. Evaluation of KMDL models of knowledge intensive business processes in the area of software engineering.

regional economic communities.

4.2   PRESENTATION AND DISCUSSION OF FINDINGS

In the presentation that follows, the findings of the case analysis presented in the preceding chapter will be discussed within the context of knowledge flows and quality knowledge. The discussion will focus on the following aspects;

- Contextual aspect
- Political will aspect
- The aspect of time lag, feedback and resulting delays
- Learning aspect
- The capacity aspect

4.3   QUALITY KNOWLEDGE IN REGIONAL ECONOMIC COMMUNITIES

In the modern era where information and knowledge perceived to be accurate are in abundance and has transformed how organisations generate and apply knowledge, Yoo et al rightfully note that, the old adage, "knowledge is power," may be incorrect as managers and team members are flooded with knowledge. Owing to the possible invalidity of the statement that all knowledge possesses power, it may be pertinent to state that knowledge with the highest levels of quality brings power[234].

Knowledge with high levels of quality enables organisations to bring about meaningful change as their efforts are attuned to contexts and conditions in which they are being applied. For organisations, quality knowledge supports better decision making and the establishment of more evolved and intelligent interventions as they attempt to improve the lives of stakeholders. Quality knowledge therefore enables organisations to remain relevant and valuable[235]. Maintaining organisational relevance is particularly important for regional economic communities in their efforts to promote sustainable economic and social progress in participating member countries through increased regional cooperation. The organisations require quality knowledge particularly in the intrinsic, contextual and actionable dimensions to support the development and implementation of purposeful interventions.

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[234] Yoo DK, Vonderembse MA & Ragu-Nathan. 2010. Knowledge quality: Antecedents and consequences in project teams.

[235] This insight is borrowed from an article titled "Knowledge is Power."
http://uncommonsense.is/post/19861932097/knowledge-is-power accessed 24/9/2015.

Regional economic communities empowered with quality knowledge will translate in the following;

- accuracy in developed interventions in addressing specific challenges experienced in the participating countries
- efforts of the organisations will be consistently well grounded in the needs of participating countries
- developed interventions will be delivered and approached in a timely manner
- development efforts will fit into specific local contexts of the countries by being relevant, appropriate and will aim at enhancing existing conditions
- development interventions do not become "white elephants,[236]" in participating member countries but are adaptable to local settings and can be sustained through continuous application.

An example of an intervention developed and implemented by a regional economic community specifically COMESA that exemplifies quality knowledge at work is the Adjustment Facility. The COMESA Adjustment Facility (CAF) provides support for eligible member countries to enable them to make the necessary fiscal, economic and social adjustments that inherently accompany the implementation of regional integration commitments[237]. The project aims at contributing to increased implementation of regional commitments and programmes at national level through increased access to resources by member countries[238].

Quality knowledge as presented by the thesis which supports effective implementation of the intervention is evidenced in the following instances;

Firstly, calls for submission during which eligible member countries request for support provided by the intervention are issued on a yearly basis. This ensures that areas identified for support by the member countries which may include issues related to reduction of trade tariffs, adoption of transport instruments and investment incentives to mention a few are relevant and appropriate for the specific duration the submission covers.

Secondly, the Regional Integration Implementation Programme (RIIP) which is a key document in the submission outlines and identifies specific programmes for transposition and

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[236] "White elephant" refers to a possession that is useless or troublesome, especially one that is expensive to maintain or difficult to dispose of. These usually occur in development work when local contexts are ignored or disregarded resulting in projects that cannot be used or adapted.

[237] COMESA. 2014. Sixth call for submissions under the COMESA Adjustment Facility.

[238] COMESA. 2014. Sixth call for submissions under the COMESA Adjustment Facility.

implementation of regional commitments at national level[239]. The RIIPs are prepared by individual member countries with Performance Assessment Frameworks (PAFs) which outline specific country targets for each programme area. Preparation of country specific RIIPs and PAFs translates into the fact that the COMESA Adjustment Facility (CAF) does not adopt a "one size fits all" programme approach but is implemented on the basis of specific contexts and conditions of each participating member country. The approach undertaken by the intervention that identified specific country needs therefore adds value to existing efforts being applied in each country.

Further, the country specific RIIPs are monitored and revised annually through a progress monitoring report (PMR) which is submitted by the member countries to the project team at the secretariat. The progress monitoring reports outline progress in the implementation of RIIPs and highlight challenges experienced. The reports therefore form a solid knowledge basis for monitoring and evaluation of project activities and in so doing supports learning on a consistent basis.

In efforts to mitigate time lags and delays intervening project activities during implementation, the intervention puts forward an agreed time plan and stages in the submission process which is required to be adhered to. The time lines for submissions are as follows;

➢ a period of 90days from the issuance of the call of submission is allocated to member countries within which submissions of RIIPs and PMR are made.

➢ a 2 months period is allocated for the provision of technical assistance to the member countries provided by the project team and national consultants from the issuance of the call for submission. This ensures that submissions are accurate, appropriate and are in line with stipulated requirements.

➢ at the point of approval, a 5 months period is allocated for the finalisation of country RIIPs and PMRs.

➢ this is followed by disbursement of the support facilitated by the project[240].

The stipulated time plan and stages for submission of the RIIPs and accompanying reports therefore facilitates timely feedback processes and ensures that the effects of project initiatives on another remain relevant and accurate.

Further, the provision of technical assistance in the process during which calls for submission

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[239] COMESA. 2014. Sixth call for submissions under the COMESA Adjustment Facility.

[240] COMESA. 2014. Sixth call for submissions under the COMESA Adjustment Facility.

are prepared signifies acknowledgement by the project of capacity deficiencies that may be present at country level to prepare the submissions which are highly technical. The technical assistance therefore ensures that prepared submissions are an accurate reflection of specific country priorities and needs. Consequently, the submissions support meaningful application and effective action in the identified programme areas.

Lastly, based on implementation experiences synonymous with learning, the CAF operational guidelines in promoting project relevance and context suitability are reviewed each year. The review of operational guidelines based on performance of the project may possibly result in the revision of indicators and/or operational modalities as outlined in the country specific RIIPs. The review exercises therefore shift from single loop learning and lean more towards double loop learning. Occasions for double loop learning occur as the review exercises allow for the questioning and expansion of the basis on which the project is premised and aim to identify and challenge underlying assumptions that affect project implementation.

4.4   KNOWLEDGE FLOWS

The emergence of process oriented knowledge management highlights knowledge as an ephemeral active process of relating. Process oriented knowledge management, therefore recognises that knowledge is in a constant and dynamic process of generation. In organisations, this process is more evident in the manner in which knowledge flows through established structures as it supports and enhances various tasks undertaken to fulfil objectives. The KMDL theoretical construct utilised by the research makes this assertion clear as it is grounded in the SECI model which recognises knowledge flows through conversions[241], facilitated by the interaction of tacit and explicit knowledge.

As evidenced by the knowledge intensive business process under analysis, organisational knowledge flows and subsequently the quality of knowledge is determined by existing structures. Therefore, efforts to effectively manage knowledge require taking cognisance of existing organisational structures and assessing how these inhibit or support effective knowledge flows. As noted by Tobin and Franze, certain organisation design considerations including specialisation, shape and departmentalisation impact the ability of the organisation to manage knowledge[242].

In the case of the EPRCP which was the focus of the KMDL analysis, it is evident from the

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[241] The modes of knowledge conversion include socialisation, combination, internalisation and externalisation.

[242] Tobin PKJ & Franze MH. Organisational structure and knowledge management: A case study.

knowledge flow model that the flow of knowledge was initiated in the project planning task. The flow of knowledge from the project planning task thereafter progressed through to the follow up tasks which included project review, consideration of legal requirements, decision making and implementation. In consideration of the tasks which constituted the knowledge intensive business process under analysis, the perspective of viewing the structure that facilitated the process merely as a tangible organisational anatomy, shifted to viewing the structure as rather a process of events.

Accordingly, Kast and Rosenzweig state that organisations have structure, but it is the structure of events rather than of physical components, and it cannot be separated from the process of the system[243].

Therefore viewing organisational structures as a processes of events rather than as physical components, would allow organisations particularly regional economic communities to establish structures that are flexible and accommodating to allow for occasions to continuously modify and shape knowledge outputs to fit target contexts.

A key issue that requires to be addressed in establishing supportive structures to facilitate effective knowledge intensive business processes in regional economic communities is the need to ensure that knowledge is validated at all stages in existing structures to enhance its quality.

Notwithstanding the fact that knowledge flows in regional economic communities are influenced by determined organisational structures, a key to promote quality knowledge is an understanding of the need to structure events in a manner that allows for the validation of knowledge inputs and outputs in knowledge intensive business processes. Validation of generated knowledge is especially important to support the contextual aspect of quality knowledge in the organisations. Validated knowledge is important due to the multi stakeholder involvement in regional economic communities which emphasises the need to develop interventions that are relevant and appropriate particularly in participating member countries.

Therefore in pursuing quality knowledge, regional economic communities require to be mindful of established structures and how these encourage and support specific actions that support the overall objectives of the organisations. The organisations should not solely focus on entrenching structures to operationalise internal functions, but rather highlight the purpose

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[243] Kast FE & Rosenzweig JE. General systems theory: Applications for organisation and management.

of inherent knowledge intensive processes and based on this understanding establish structures that enable the undertaking of specific events in support of the processes.

4.5   THE CONTEXTUAL ASPECT

The presentation of concepts related to quality knowledge as it particularly relates to regional economic communities revealed the issue of context as a key determining factor in the formulation and implementation of interventions in participating member countries. When the context in which an intervention is to be implemented is understood, the task of planning for projects focuses on the unique country needs and requirements and how these can be effectively addressed. As a result, interventions are developed that address specific country needs. An understanding of context enhances the relevance, appropriateness, and value-addedness of interventions highlighting key corner stones of quality knowledge.

A review of the statistics generated by the K-Modeler outlined in table 6 of the thesis, following modelling of the knowledge intensive process of the EPRCP, showed that country requirements which is synonymous with issues of context for the purpose of the research, was among the key knowledge requirements of the process. Interestingly, an examination of the knowledge descriptors for the knowledge domains present for the tasks which involved project planning, review, decision making and implementation, found that this was to a large extent met by the existing knowledge objects. The findings suggesting the satisfaction of knowledge relating to country requirements, implies that country requirements as it related to the public procurement sector of member country needs were factored into the respective tasks.

The performance of the project as it particularly related to the achievement of the desired outcomes however raised questions concerning the validity of the perceived country requirements which guided the project tasks. It further questioned if the country requirements accurately represented the contextual factors present in each member country. Among the contextual factors which could possibly affect project uptake and implementation include socio-economic, structural, political, physical and technological factors.

For example, in reviewing project performance as per the specified principle focus area to upgrade the procurement information system with the capacity to publicise and host national procurement information on the website, it was found that towards the closure of the project, only three (3) out of nineteen (19) member countries at a 16% level of implementation had

advertised on the regional web-based portal[244]. Further, a spot check on 27th June 2015 by the researcher on utilisation of the portal found that the last entry was made in 2013 and one particular country out of nineteen participating countries had been most active. This observation is contrary to the project objectives which had envisioned that the project would be self-sustaining owing to a number of training initiatives and the upgrade of the information system.

Based on the findings and observation on the limited use of the web-based portal, the research concluded that knowledge gaps were present in the knowledge intensive business process particularly during the project planning task. A number of activities should have been undertaken to address the identified knowledge gap. For instance, an assessment of contextual conditions necessary to support the active utilisation of the web portal would have highlighted the level of internet availability and connectivity in the participating countries required to adequately host advanced information systems. Further, a comprehensive review of contextual factors would have highlighted the level of knowledge and skills in the use of information communication technologies in the countries. Knowledge in these areas would have guided project design more accurately and resulted in better results and sustainability of project initiatives. For instance, owing to poor internet services in a fair number of countries, the project would have opted for more practical and innovative means to disseminate information as opposed to a web portal. Further, an understanding of existing knowledge and skills in information communication technologies would have guided the design of an appropriate training programme.

Khan, in discussing the importance of local context in the planning of environmental projects observes that projects have many basic features in common while they can differ considerably concerning contextual factors[245]. Khan[246], identifies three (3) parallel processes that require to be addressed if the contextual factors affecting a project are to be comprehended. The processes include the project specific process, the political process and the permitting process. Each of the processes involve different actors, issues and arenas and are essential in order to carry out a project. It is therefore important for project managers to pay attention to and deal with

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[244] COMESA Report. 2012.

[245] Khan J. The importance of local contexts in the planning of environmental project: Examples of two biogas case.

[246] Khan J. The importance of local contexts in the planning of environmental project: Examples of two biogas case.

them[247].

Of the three parallel processes put forward by Khan, the project specific process consists of understanding the technical side of a project according to technical, economic and environmental criteria[248]. The project specific process assists project planning tasks in developing interventions which are suitable to existing conditions of the target environment and reduces the risk of developing impractical interventions.

For the understanding of the unique and diverse contexts in which a project is to be implemented, comprehensive surveys and assessments are a critical pre-requisite particularly in the design and planning phase of a project. For the specific project which was the focus of the KMDL analysis, there was need to undertake multi-disciplinary in depth surveys to generate knowledge that was loaded with a high quality in the contextual dimension so as to give a clear and accurate picture of existing conditions in the targeted environment. Knowledge that is contextually rich would support the establishment of a "project contextual fit." A project contextual fit emerges when project initiatives are aligned to local conditions and address the unique challenges present at the point of project implementation which for regional economic communities is undertaken at member country level.

In preparing for the EPRCP, as shown by the knowledge flow model and resulting process data, the research found that a single baseline diagnostic survey was undertaken to support the project planning task. The purpose of baseline surveys is to provide an information base against which to monitor and assess an activity's progress and effectiveness during implementation and after the activity is completed[249]. In addition, the baseline survey provides a solid knowledge base to support the accurate design of projects as it highlights the status quo of prevailing conditions in target environments. In consideration of the project performance, it is evident that the single survey did not adequately highlight existing conditions in the member countries. As a result, the survey did not sufficiently support project planning and design indicating a weakness in the knowledge intensive process.

To establish a sound contextual knowledge platform on which to design and plan regional projects, there is need to engage member country stakeholders from the conceptual phases of a

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[247] Khan J. The importance of local contexts in the planning of environmental project: Examples of two biogas case

[248] Khan J. The importance of local contexts in the planning of environmental project: Examples of two biogas case.

[249] ASARECA. 2010. Guidelines for project baseline studies.

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project. An additional element of the project-specific process introduced by Khan, involves an interaction between actors who are directly involved in a project[250]. Interaction with actors involved in a project, particularly target stakeholders supports the development of project interventions which meet stakeholder needs and expectations. Accordingly, it has been recognised that among the identified project management process groups, the planning process groups urges that stakeholders on the operations side of the business as they are the ones utilising deliverables must be engaged throughout the project. Engagement of stakeholders throughout a project ensures that the planning process groups are appropriately prepared to leverage new capabilities[251]. Engagement of stakeholders from the onset of the EPRCP project, should therefore have fed into the planning task as an additional means to discern the prevailing contexts in member countries. Further, the engagement of stakeholders irrespective of established structures should have continued throughout the knowledge intensive business process as conditions constantly change and do not remain static.

Furthermore, in an attempt to understand contextual conditions of the project's target area, a readiness assessment should have been undertaken as an additional knowledge platform to support project development and implementation. It has been recognised that a readiness assessment analyses and confirms the level of preparedness of the conditions, attitudes and resources, at all levels in a system, needed for change to happen successfully[252]. Furthermore, it has been noted that the greater the complexity of the proposed change, the greater the importance of understanding whether and where there is readiness for change as this can be critical first for deciding whether it is appropriate to intervene and, if it is appropriate, about both the entry points and the types of intervention[253]. Readiness assessments therefore contribute to an understanding of broad contexts in which a project is to be implemented.

Owing to the above, the thesis contends that contextual factors that require to be scoped out and understood if regional interventions are to be relevant and appropriate at member country level include the following;

- human resources: an understanding of the existing human resources helps to determine the technical level of intended interventions. The technical level of interventions

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[250] Khan J. The importance of local contexts in the planning of environmental project: Examples of two biogas case.

[251] Jarocki TL. 2014. One solution for project success: Project and change management in the PMBOK guide.

[252] How to assess change readiness. http://www.lencd.org/learning/howto-readiness accessed 2015/6/24.

[253] How to assess change readiness. http://www.lencd.org/learning/howto-readiness accessed 2015/6/24.

require to be at par with the existing capacities at individual and institutional level. In addition, a review of human resources helps to gauge the existing attitude of individuals as this plays a key factor in levels of commitment and dedication to effectively participate in project interventions.

- financial resources: information of existing financial resources helps determine the possible availability of funds at national level. Availability of financial resources at the national level impacts sustainability and adaptability of interventions following completion of the project.

- level in technological advancement: an understanding of the existing technological conditions assist in selecting appropriate technologies applicable in the project's target areas.

- political structures: an understanding of existing political structures helps to determine appropriate entry points for project interventions to support effective uptake.

4.6   THE POLITICAL WILL ASPECT

The effectiveness of multi-stakeholder organisations particularly regional economic communities in achieving objectives is dependent among other factors on the willingness of stakeholders particularly participating member countries to fulfil regional commitments at the national level. The fulfilment of regional commitments by member countries translates into the level of political will.

As noted by the Economic Commission of Africa, realising the benefits of regional integration requires strong and sustained commitment from member countries. Leaders should view these arrangements as more than good "sound bite" economics and politics, dedicating the effort required to make them work[254].

For the EPRCP which was the focus of the KMDL analysis, the rate of transposition was used an indicator to gauge the level of political will for the project. Transposition also referred to as domestication and/or mainstreaming, ensures that policy and administrative measures are put in place by member countries to implement regional agreements, decisions, and protocols at national level[255].

Similarly to other projects and programmes implemented by COMESA, transposition is monitored at four (4) levels in the member countries covering the actual transposition as well

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[254] Economic Commission for Africa. 2004. Assessing regional integration in Africa.

[255] COMESA. Report. 2012.

as application and enforcement of regional commitments. The four levels include the following;

- legal and regulatory framework level which is the degree of actual transposition of commitments into the national legal and regulatory frameworks required for their implementation
- strategic policy level which is the degree of integration of the commitments into the national policy frameworks, such as national plans, PRSP, sector strategies etc
- planning level which is the degree of concrete transposition into the national planning tools such as public investment programme and budgetary frameworks
- operational implementation level which is the existence of a monitoring mechanism, and the degree of actual implementation of the various commitments against an agreed roadmap, monitoring benchmarks, and corrective measures[256].

A review of the process data generated by the K-Modeler revealed that the critical knowledge requirement of political will was not present as a knowledge object in the knowledge intensive business process under analysis signifying a knowledge gap. This was particularly observed during the project planning task. The assertion that political will was not present in the project planning task is a general assumption made by the researcher owing to the level of transposition of regulations related to public procurement by the member countries.

The resulting effect of the knowledge gap is evident in the level of transposition of decisions relating to project implementation. The research found that transposition of project decisions were only fulfilled at the first level which included the transposition of commitments into member country's national legal and regulatory frameworks. A 2012 survey, found that under pillar two of the project focusing on compliance to the regional procurement regulations; all participating member countries at an implementation rate of 0% had not transposed provisions of the regional procurement regulations into national law[257]. Non-fulfilment of transposition of the regional procurement regulations into national law implies that the respective governments of participating member countries did not put in place the necessary measures to activate the implementation of decisions at the strategic policy, planning and operational implementation levels.

The challenges that were experienced by the project under analysis in satisfactorily achieving

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[256] COMESA. Report. 2012.

[257] COMESA. Report 2012.

the key expected outputs beyond the required legislation can be linked to the assumption that the political will among the key stakeholders to actively uptake decisions relating to project implementation was inadequate. This critical knowledge requirement which should have been scoped right at the project start is related to an understanding of the political context including the various ideologies and conditions present which ultimately have a significant effect on project up take and implementation by respective government machinery.

The critical missing knowledge requirement of political will therefore undermined the process of project design and planning. Easterly in Keene rightfully notes that as a result of the contextual disregard and understanding of the aspect of political will, "big plans" are imposed on contexts without acknowledging the complexity and diversity within given situations[258]. In the case of regional economic communities, "big plans" that are imposed on contexts often with a lack of a comprehensive understanding of the existing political will in member countries are seen in the numerous interventions that are formulated by the organisations but fail to be sufficiently implemented at member country level. In other cases, decisions passed by the organisation's governing bodies are implemented at a slow pace.

Teams managing projects developed and implemented by regional economic communities have a huge task therefore in how they design and undertake planning for interventions to address challenges related to the aspect of political will. It is vital that the management teams understand the contextual aspect of political will and establish mechanisms to engage key political actors so as to have a feel of specific initiatives that would be embraced and/or discarded.

Khan in studying the importance of considering context-specific factors as key knowledge inputs in the management and planning of environmental projects, uses two practical examples to show how similar types of projects developed markedly different planning organisations and approaches in order to handle different situations and challenges[259]. In looking specifically at the political aspect, the planning approaches of the two projects differed. Planning for the 1st project for instance for which there was little political debate leaned mostly on negotiations on the economic and financing aspects. Planning for the 2nd project on the other hand where a complicated political situation was present, focused on political discussions with the various

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[258] Keene C. 2007. Development projects that didn't work: The perils of narrow approaches to complex situations.

[259] Khan J. The importance of local context in the planning of environmental projects: Examples from two biogas cases.

involved actors to establish a strategic and political advantage in order to gain support for the project[260].

The distinct approaches undertaken in the development of the two projects, implies that when an understanding of the political will of a given context is gained, this knowledge representing specific needs, interests and goals is then factored into project design and planning likely resulting in better performance.

In addition to engaging with key political actors, similarly to the discussion of contextual factors, the challenges presented by the political aspect in the work undertaken by regional economic communities can be addressed by undertaking in depth analyses on the past and present political climate in participating member countries. In depth analyses amplify the understanding of political preferences and behavioural trends of countries which helps to gauge the following in project design and planning;

- what interventions should be introduced in the specific area of focus?
- at what level in the existing political system should the interventions be introduced to facilitate buy in?
- what political structures and processes are in place and how do these approach the passing and ratification of new laws and regulations?
- what is the time frame in which tangible results can be achieved within the existing political framework.?

Armed with the answers to these questions which vary and are unique to each country context, a solid quality knowledge base is established rich in intrinsic, contextual and actionable value to guide and support project planning, decision making and implementation.

4.7   THE ASPECT OF TIME LAGS, FEEDBACK AND RESULTING DELAYS

In today's fast paced world affected by global and regional influences, organisations are challenged in the manner in which they timely respond to specific needs of stakeholders. This has raised the profile of the element of time in organisations highlighting intervals between plans and intended outputs. In addition, the aspect of feedback has emerged. In the case of regional economic communities characterised by myriad of variables at different levels that constantly interact with each other through feedback processes, the aspect of time lags in terms of cause and effect between activities becomes even more evident.

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[260] Khan J. The importance of local context in the planning of environmental projects: Examples from two biogas cases.

In the case of COMESA and the specific project that was the focus of the KMDL analysis, the existence of feedback processes played a key role in the quality of knowledge that was generated and utilised within the knowledge intensive process through the interaction of variables. Of particular interest in discussing the aspect of time lags, feedback and resulting delays is the duration of time between planned and intended project actions. This aspect relates to the intrinsic knowledge quality which asserts the extent to which knowledge has quality in its own right; it is associated particularly with timeliness.

In attempting to relate the intrinsic dimension of quality knowledge with the concept of feedback, the research focused on time lapses that were present between project initiation activities and the task that involved actual planning. According to the United Nations Economic Commission for Africa, the project start is the most important project management sub-process. This is because the project start is the basis for the other project management sub-processes, such as the project plans, the project communication structures; the relationships to relevant environments are established. Starting the project in the right way is therefore another step closer to avoiding the likely outcome of project failure[261].

To bring focus to the aspect of time lags, feedback and resulting delays, aided by the process data generated by the K-Modeler, the research zoomed in on the usage of two (2) of the fifteen information objects which fed into the project planning task as input. The information objects include the baseline data diagnostic survey and the PPRP completion report. As shown in the illustration below of the planning task, the reports were among the key information inputs into the task.

*Figure 9.**Illustration of the task view of the project planning task***

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[261] United Nations Economic Commission for Africa. Module 4: Implementation of projects.
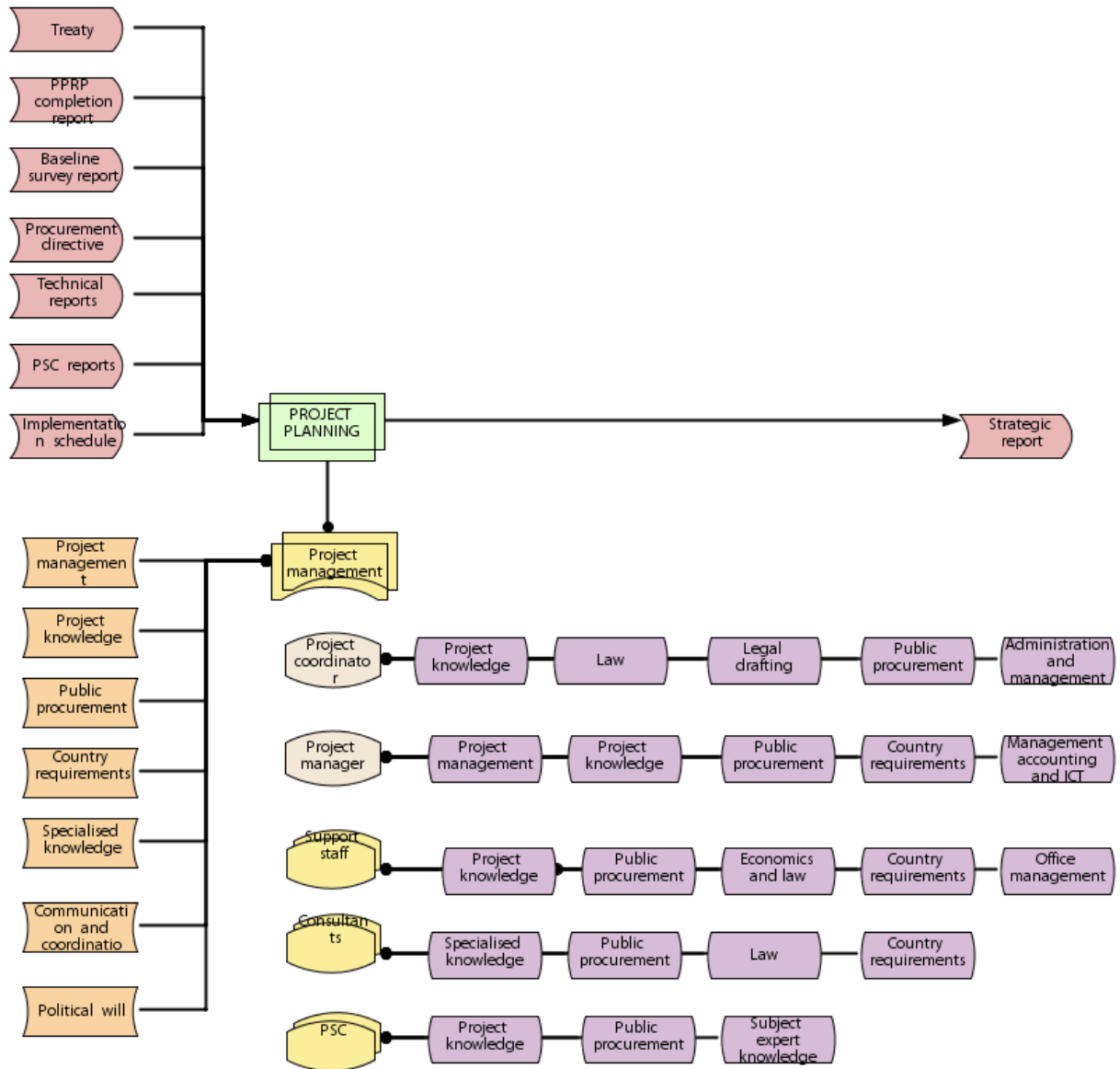
Specific to the baseline data diagnostic survey report, a review of the documentation related to the project found that the report[262], as a result of the survey was produced in 2002. As an implication, there was a four (4) year time lag between the survey and the commencement of the EPRCP in 2006[263]. Concerning the PPRP completion report, the research found that the report was produced two (2) years following closure of the project[264], in December 2004[265]. This period additionally implies a four (4) time lag between completion of the PPRP,

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[262] The survey report highlighted among other things the status of public procurement, laws, regulations and procedures in each member country.

[263] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

[264] The PPRP was the conception project which preceded the EPRCP.

[265] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

preparation of the report and planning for the EPRCP. These reports in addition to the supplementary information objects formed a basis for the development and design of the EPRCP. This finding therefore raised questions concerning the accuracy, reliability and relevance of the reform issues and technical specifications that were drawn in support of the implementation of the EPRCP.

Due to the time lags highlighted in the preparation of the reports and their use in the planning task, there was a possibility that the effectiveness of the feedback processes was diminished and resulted in a delay. As a result, the issues that had been identified as strategic input into the project were no longer viable as they did not accurately and precisely represent the status quo of the existing public procurement laws and systems in the participating countries.

Accordingly, Rondinelli asserts that often project planning, programming and management cycles take two to three years to be identified, designed, reviewed and approved. Because of the time lags, outputs may not be appropriate[266]. For example, Rondinelli notes that as a result of the time lags between design and implementation, most projects are planned long before the host country managers and technical assistance personnel have been selected. The time lags result in disjunctures between the intent of the plans and the conditions under which development managers must carry them out. Consequently, the host country experiences difficulties in carrying forward the project as it had agreed to do[267].

For the case in point of the project under analysis, it is assumed that the time lags and resulting delays had a bearing on how the project was designed, planned and eventually implemented. Hence implementation activities were not adequately designed as the knowledge outputs were not "fit for purpose" owing to a dis-alignment with the specific conditions in which the project was implemented.

While delays may at times be strategic especially in profit making business settings as when firms seek a desired market share[268], in development work undertaken by regional economic communities, they may spell non fulfilment of objectives. This is because time lags and resulting delays on the effect of dependent project activities diminishes the value addedness

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[266] Rondinelli DA. 1986. Development management in Africa: Experience with implementing agricultural development projects.

[267] Rondinelli DA. 1986. Development management in Africa: Experience with implementing agricultural development projects.

[268] Senge P. The fifth discipline.

and appropriateness of interventions and as stated by Senge, overshooting the mark[269]. Overshooting the mark translates into the fact that as a result of prolonged intervals between project design, planning and implementation, developed intervals do not meet the needs of stakeholders.

The aspect of time lags, feedback and resulting delays can also be extended to the knowledge requirement of communication and coordination identified in the modelling of the knowledge intensive process of the EPRCP. This co-relation emerges due to the fact that the activity of communication and coordination primarily facilitates feedback among participating stakeholders in processes. In addition, feedback though effective communication and coordination is critical to ensure that tasks focused on implementation do not remain isolated but are actively aligned to tasks that involve planning and decision making. As a result, the changing needs of stakeholders are effectively communicated throughout processes.

The process data generated by the K-Modeler revealed that communication and coordination was among the highest demand in knowledge requirements in the process specifically for the tasks of planning, decision making and implementation. However it was found that the requirement was generally not present as a knowledge object in the process. These findings questioned if plans and decisions formulated in the process were effectively communicated to the implementers. Additionally, the findings questioned if the reported project performance was fed back into the planning and decision making tasks. This indicates a serious weakness in the knowledge intensive process of the project due to the fact that when feedback in the form of communication and coordination in interdependent tasks is weak, integration of project activities in line with overall objectives is negatively affected. This was evidenced by the performance of the project which did not satisfactorily meet its intended outcomes at its closure.

Project planning and management particularly in regional economic communities should therefore be mindful of the interactions between the various stakeholders existing as parts in the complex organisational systems which ultimately affect each other as they undertake respective tasks. Conceited efforts are required to actively communicate and coordinate outcomes so as to support effective feedback processes.

4.8   THE LEARNING ASPECT

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[269] Senge P. The fifth discipline.

When organisations do not actively and meaningfully engage learning, they do not evolve; when they do not evolve, they do not grow and cease to relevant. In the case of the specific project that was the focus of the KMDL analysis, learning at the project level was facilitated by progress implementation reportsprepared on a quarterly basis[270].

A review of the knowledge flow model and process data outlined in table 5 of the thesis generated by the K-Modeler, showed the single usage of progress reports in the knowledge intensive process. The reports were a key output of the implementation task.

The progress reports formed a basis for the project activity of monitoring and evaluation a critical occasion for feedback supporting the learning process in project implementation. The activity of monitoring and evaluation involves designing and implementing an information gathering and reflective learning process to generate insights that help improve operations and strategic direction[271]. Monitoring and evaluation is an embedded concept and constitutive part of every project or programme design. Although the two concepts are used simultaneously they carry distinct characteristics.

Monitoring is a periodically recurring task beginning in the planning stage of a project or programme. In checking progress against plans, it allows results, processes and experiences to be documented and used as a basis to steer decision making and learning processes[272]. Monitoring sets the basis for evaluation which involves assessing as systematically and objectively as possible a completed project or programme (or a phase of an ongoing project or programme that has been completed). Evaluations appraise data and information that inform strategic decisions thus improving the project or programme in the future[273]. Evaluations help to draw conclusions about five main aspects of the intervention namely, relevance, effectiveness, efficiency, impact and sustainability[274]. The main aspects of an intervention as

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[270] The reports prepared by the project management team provided detailed reviews highlighting the project implementation performance, results achieved by the project, as well as key issues affecting the project and recommendations to address them.

[271] COMESA. 2010. Medium term strategic plan. Towards an integrated and competitive common market 2011-2015.

[272] Monitoring and evaluation. http://www.civicus.org/new/media/Monitoring%20and%20Evaluation.pdf accessed 2015/30/7.

[273] Monitoring and evaluation. http://www.civicus.org/new/media/Monitoring%20and%20Evaluation.pdf accessed 2015/30/7.

[274] Monitoring and evaluation. http://www.civicus.org/new/media/Monitoring%20and%20Evaluation.pdf. accessed 2015/30/7.

presented by the thesis are key characteristics of quality knowledge.

The integration of the activities of monitoring and evaluation in a project as a basis for performance management produces a sound knowledge platform to support learning through the following;

- it allows actors to learn from each other's experiences, building on expertise and knowledge
- it reveals mistakes and offers paths for learning and improvements
- it provides a basis for questioning and testing assumptions
- it provides a means for agencies seeking to learn from their experiences and to incorporate them into policy and practice
- it provides a way to assess the crucial link between implementers and beneficiaries on the ground and decision-makers[275].

Having considered the function of monitoring and evaluation in projects, especially as it pertains to the generation of a sound knowledge platform to support learning, the weak performance of the EPRCP particularly pertaining to the issues of sustainability and impact is clear evidence that the aspect of monitoring and evaluation to support meaningful learning was insufficient. The insufficient monitoring and evaluation therefore resulted in a knowledge gap in the knowledge intensive business process. The research therefore concluded that as a result of the less than adequate monitoring and evaluation function, the learning process to facilitate the capacity of project planners, reviewers, decision makers and implementers[276], to create the results desired through the act of modifying and reinforcing, existing knowledge was limited.

The conclusion that the learning aspect in the project was limited is drawn from an understanding of single and double loop learning[277]. Notwithstanding the fact that projects can have in place systems that function and support learning, as was the case in point of the monitoring and evaluation activity of the project under analysis, this can however present occasions solely for single loop learning.

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[275] Why is monitoring and evaluation important? http://www.sportanddev.org/en/toolkit/monitoring___evaluation/why_is_monitoring___evaluation__m_e__important_/ accessed 2015/21/7.

[276] As shown by the knowledge flow model of the knowledge intensive business process of the EPRCP project, these constituted the key individuals and groups in the knowledge intensive business processes responsible for specific roles in the execution of the respective tasks.

[277] A concept of single and double loop leaning is presented in Chapter 2 of the thesis.

The assumption that the predominant learning process within the EPRCP leaned mainly towards single loop learning is evidenced in the performance of the project which did not reach its desired goals and outcomes to a large extent. This assumption is based on an understanding of single loop learning in which a system's chosen goals, values, plans and rules are not questioned. In spite of the fact that the progress reports were generated on a quarterly basis and should have continuously supported effective implementation of the project, the reports did not facilitate a reflective learning process to support improved project performance. For instance, the reports should have supported the project steering committee in its responsibility to coordinate and monitor planning and implementation of the project in undertaking well informed remedial actions to ensure that objectives were being achieved.

Owing to the inadequacy of the reporting function, the course of the project's implementation was not altered. Measures undertaken during the task of implementation to address project performance were merely corrective as characterised by single loop learning. The measures did not seek to discern the underlying factors that affected and influenced project implementation.

Furthermore, the need to maintain governing variables did not allow the project to deviate from the already agreed implementation modalities if at all occasions for learning by doing were presented and required to be effected. For the project under analysis, the main governing variable was the implementation schedule[278], which required to be adhered to due to the agreement made between COMESA as the project's implementing organisatiom and the development partner as the key donor. Consequently, measures to improve project performance required to be kept in line with the implementation schedule. Adherence to the implementation schedule limited the learning process in the project to the detection and correction of error mechanism of single loop learning. As a result, the occasions for learning were not sufficient to bring about meaningful change as they were governed by variables that limited flexibility.

An expansion of the learning approach undertaken by the project to adopt aspects of double loop learning would have involved a review of project performance by asking the following questions;

- why are the project objectives not being met?
- at what rate is progress implementation in the respective member countries?
- which countries have made the most progress in terms of implementation and what

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[278] The implementation schedule as shown in the knowledge flow diagram was a key information object as input in the planning task which affected the overall implementation modalities of the project.

factors can be attributed to the progress?

- has a favourable response been received from the stakeholders utilising the project's deliverables?

- why are the project activities not sustainable?

- what can be done to improve project performance.?

Learning in a project facilitated through addressing the questions above may then lead to a review and re-working of frameworks and variables that govern the formulation and implementation of regionally oriented interventions. As learning is a continuous process, regional projects pursuing learning by doing should be designed and structured in such a way to allow for a shift in strategy when desired results are not being achieved. Flexibility in strategy implementation supported by effective learning will promote expandability and adaptability of employed interventions which is synonymous with the actionable dimension of quality knowledge.

4.9   THE CAPACITY ASPECT

An organisation's capacity at all levels to effectively undertake the purpose for which it was established is one of its biggest advantages. One of the unique aspects of regional economic communities is that for the most part, the secretariat of the organisations act as facilitators and coordinators of the regional integration initiatives. This translates into the fact that the secretariat and various technical committees such as the legal committees highlighted in the knowledge intensive business process of the EPRCP develop regional policies and regulations that require to be harmonised and adopted at the national level by participating member countries to facilitate processes of implementation. Peter Drucker in the United Nations Economic for Africa Handbook on Project Implementation[279], notes that plans are only good intentions unless they immediately degenerate into hard work.

The need to execute activities effectively and actualise interventions brings into focus the issue of capacity of the implementing entities particularly member countries in regional economic communities. To this end, a key principle focus area of the EPRCP recognising the critical aspect of capacity, focused on strengthening institutional capacities through training activities. The training activities were intended to create capacity to support and sustain good procurement practices at national and regional levels[280]. Highlighting the importance of the

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[279] United Nations Economic Commission for Africa. Module 4: Implementation of projects.

[280] African Development Bank. 2006. Appraisal report: Enhancing procurement reforms and capacity project.

focus area, among the key recommendations of the Technical Committee of Procurement Experts[281], was the need for the project to ensure that there was an established linkage with training institutions in the region which were involved in capacity building in the area of public procurement. The linkage of training institutions was a way in which capacity building could be sustained[282].

With the aid of the knowledge flow model which allowed for the comparison of the knowledge requirements and existing knowledge objects, specifically the implementation task view presented below, the research found that while a majority of the member countries were knowledgeable in national procurement laws and the regional procurement directive, specialised knowledge to enable skilful action in support of project implementation was generally lacking.

*Figure 10. **Illustration of the task view of the implementation task***

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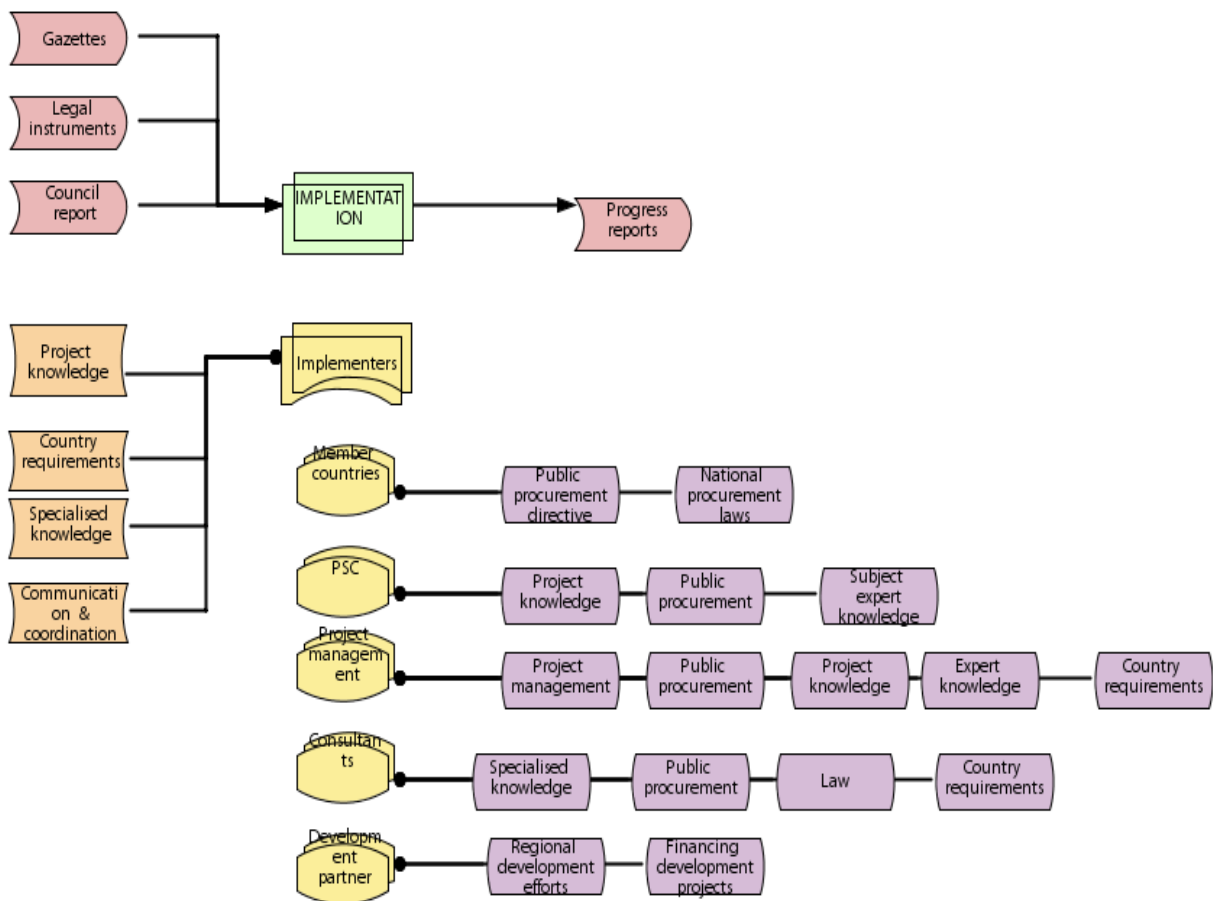
[281] The TCPE assumed by the role of technical expertise; it was made up of heads of national procurement agencies from the member countries and procurement experts.

[282] COMESA. 2007. Report of the second meeting of the committee of procurement experts.

The observation that specialised knowledge was generally lacking in the task of implementation, was further supported by a review of the process data highlighting the knowledge intensity of specific areas in the knowledge intensive business process under analysis. It was found that while high knowledge intensity was observed in the areas of public procurement, project knowledge and country requirements, the intensity of specialised knowledge was low. The low intensity of specialised knowledge indicated a weakness in the process in the aspect of capacity due to the fact that the demand for specialised knowledge at member country level was high owing to the technical nature of the project.

Despite the observation that the intensity of specialised knowledge was low, the research noted that the project had a huge training component mainly driven by the consultants which focused on building the capacity of implementing entities particularly at the national level. A key problem area however was identified in the approach taken by the project in attempting to establish an efficient capacity base to enable skilful action.

Notably, the research observed that an assessment mainly focused on capacity needs at member country level was not undertaken prior to the commencement of the project. A capacity needs assessment report should have fed into the planning task in addition to the highlighted information objects as shown in the knowledge flow model.

Capacity needs assessment focus on the following;

- identification of capacity gaps influencing current results and desired ones (situation analysis)
- prioritisation of the capacity gaps (needs assessment)
- selecting the most important to work on (action plan) [283].

A capacity needs assessment having identified the above factors should thereafter have fed into the planning task of the project resulting in the development of targeted and specific areas for capacity enhancement which in turn would have improved project performance in the long run. For example, the discussion on contextual aspects noted that the web portal developed by the project for the purpose of information sharing on public procurement tenders was not utilised by a majority of the member countries. Had an assessment been undertaken prior to the development and roll out of the portal, the capacity issues affecting its utilisation and uptake would have been identified beforehand and appropriately addressed during project

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[283] Stephen P & Triraganon R. 2009.Strengthening voices for better choices: A capacity needs assessment process.

implementation.

Following a clear understanding of the specific capacity needs of countries implementing regional interventions, projects are then required to engage a capacity enhancing approach that is sustainable and aligned to specific capacity (knowledge) gaps. The need to develop appropriate capacity enhancing approached brings into focus the distinction between capacity building and capacity development which has over the last decade in development literature often been used interchangeably[284]. USAID, in discussing challenges encountered in capacity building observes that there is a continuing lack of understanding regarding the definition and scope of capacity building as a field and as an approach[285]. Capacity building is said to be the process that supports only the initial stages of building or creating capacities. The capacity building approach implicitly assumes that there are no pre-existing capacities. Capacity building is often understood as a purposeful, external intervention to strengthen capacity over time[286].

Shifting from the capacity development approach, the United Nations Development Programme (UNDP) prefers to employ capacity development which is more comprehensive as this best reflects its approach premised on the fact that some capacities exist in every context[287]. The UNDP uses this base of pre-existing capacities as its starting point and then supports national efforts to enhance them in a process of transformation from the inside, based on nationally determined priorities, policies and desired results. The capacity development approach of the organisation encompasses areas where new capacities have been introduced and so supports the building of new capacity[288].

In view of the above distinction of the capacity building and capacity development approaches, the research assumed that the EPRCP's approach in enhancing individual skills and institutional capacities to achieve its desired objectives in promoting good procurement practices in the region was mainly based on the capacity building approach. Application of the capacity building approach implies that the training initiatives employed by the project mainly supported the initial stages of building capacities in the member countries. Similarly to other

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[284] The African Capacity Building Foundation. 2014. Africa Capacity Report.

[285] USAID. 2010. Challenges encountered in capacity building: Review of literature and selected tools.

[286] The African Capacity Building Foundation. 2014. Africa Capacity Report.

[287] The African Capacity Building Foundation. 2014. Africa Capacity Report.

[288] The African Capacity Building Foundation. 2014. Africa Capacity Report.

capacity building initiatives undertaken by regional economic communities, the initiatives mostly training were perceived to be completed at output level. The output level to determine project success in undertaking project activities specifically in terms of building capacity was measured by the number of individuals trained and training activities held. The training activities were not extended to realise longer term results and measured on the basis of positive outcomes evidenced in individuals' and institutions' improved capabilities to implement interventions and to deliver tangible results. As a result, the short term capacity building efforts to develop skills and enhance institutional capacities lacked the element of sustainability, a key aspect of the actionable dimension of quality knowledge.

Regional economic communities should therefore aim at promoting the capacity development approach in member countries if tangible and sustained results are to be realised in the development work undertaken. The approach should involve strengthening capacity enhancing initiatives by encompassing findings of capacity needs assessments with the capacity development approach. Application of the capacity development approach supported by the assessment of capacity needs does not rule out the capacity building approach. This is due to the possibility that required capacities to implement novel regional interventions may at times not be present at member country level. As an implication, there would be need to build capacity from non-existent bases which would thereafter require to be steadily sustained.

Regional economic communities therefore require to assess existing policies, structures and individual knowledge sets at institutional level in the member countries to discern the level of existing capacity. Thereafter support to national efforts in the short and long term can be rendered through institutions of learning including universities, tertiary and vocational centres and colleges. Parallel to support of nation efforts, specific training initiatives can be designed and undertaken by regional economic communities to further enhance capacity development in the region.

4.10 CONCLUSION

This chapter was to present and discuss findings of the research regarding key aspects that affect the quality of knowledge in knowledge intensive business processes inherent in regional economic communities.

Notwithstanding the fact that there exists limited literature and definition on the concept of quality knowledge, aligning the definition of quality and knowledge as the capacity to act intelligently makes it clear what quality knowledge is. Quality knowledge enables

organisations to understand their purpose and the unique environments in which they operate. In addition, quality knowledge allows organisations to discern the needs of their beneficiaries and what should be done to establish meaningful and sustainable change.

From the discussion above, it is realised that the determination of knowledge quality in complex organisations such as regional economic communities may not be readily evident. The difficulty in determining the quality of knowledge in regional economic communities is due to the fact that factors unique to the organisations influence knowledge flows and ultimately affect its quality. Organisational tacit knowledge alone embedded in individuals and groups does not result in the generation of knowledge with high quality. To facilitate effect knowledge conversion processes, the existing explicit knowledge should be loaded with contextual value inclusive of an understanding of political will present in local conditions to ensure alignment of plans and sufficient uptake. In addition, it is imperative that the aspect of time lags existing between planned and intended actions is mitigated to ensure that knowledge possess intrinsic value and supports effective feedback processes. Lastly, continuous and effective learning by doing and capacity development should be strategically built into project implementation frameworks to enhance the actionable quality of knowledge.

Chapter 5
Aspects of the Quality Knowledge Gap

5.1 INTRODUCTION

The research project focused on modelling of knowledge flows within organisational structures specifically regional economic communities with the aim to determine the effect of such flows on the quality of knowledge.

The intricate process of modelling which was supported by the KMDL procedural model showed the complexities inherent in knowledge intensive business processes and the need for organisations to understand the nature of the knowledge base on which they operate. An understanding of an organisation's knowledge base is essential to harness the benefits of knowledge and ensure that it is of high quality.

Organisations particularly regional economic communities need to recognise that quality knowledge is a critical pre-requisite for the achievement of objectives which support overall strategies aimed at promoting economic growth and social progress through the principles and practice of economic integration. The various interventions employed by the organisations notably projects facilitate the necessary change required by targeted stakeholders particularly member countries thereby creating organisational value. Value addedness of interventions only occurs when designed and implemented interventions are suitable, relevant, appropriate and can effectively be utilised by the stakeholders. Without the fulfilment of value addedness for stakeholders, regional economic communities run the risk of becoming irrelevant.

As evidenced by the research, a comprehensive understanding of an organisations knowledge base can be gained through employing modelling techniques and understanding the nature of the organisation. In addition, organisations require to discern unique factors that affect the quality of knowledge.

5.2 MODELLING OF ORGANISATIONAL KNOWLEDGE FLOWS

The process of modelling which for the purpose of the research was supported by the KMDL procedural model, specifically the K-Modeler allowed for the generation of a representation of knowledge flows that were present in the project which was the focus of the analysis. As a result of the modelling, a knowledge flow model was generated. The model which gave an aerial view of the knowledge intensive process compressed in time supported an investigation of knowledge flows. This resulted in an understanding of knowledge flows within complex organisational systems such as those present in regional economic communities. Subsequently inferences were drawn about future outcomes concerning organisational knowledge flows and the resulting impact on quality.

A key advantage of modelling is that the process allows for the investigation of complex systems that would otherwise be difficult to investigate. This owes to the functionality of the modelling technique which uncovers parts in an organisation and illustrates how these interact with each other through distinct yet complementary tasks and ultimately determine system behaviour. Modelling therefore supports joined up thinking in the management of organisational knowledge as all elements in a knowledge intensive process can be intelligently scrutinised.

Following the modelling of the knowledge intensive business process that guided the overall development and implementation process of the EPRCP which was the focus of the KMDL analysis, an understanding of the knowledge flows inherent in the process was gained. It was comprehended that knowledge lies at the core of organisational processes and that knowledge is amplified, altered and expanded as it flows within the processes. The amplification, alteration and expansion of the knowledge subsequently affecting its quality is often as a result of a number of influencing factors that are unique to an organisation. Consequently through the process of modelling, valid points of reference are established which enable organisations to address existing gaps and challenges in knowledge flow processes as well leverage advantageous points that can add value.

Notwithstanding the advantages that modelling offers, from the experience gained in undertaking the research, it has been noted that possible risks are present. Specifically, in undertaking modelling there is a risk that insufficient and inaccurate information and data may possibly result in representations that are not valid and hence a poor understanding of how systems work. Further, procedures and methods availed by modelling frameworks may not

provide an accurate description of systems resulting in an inaccurate output from modelling exercises.

In view of the above discussion highlighting the advantages and disadvantages of modelling, the research concluded that for modelling of organisational knowledge flows to be effective, there is need for the following;

5.2.1 Clear guidelines on how to capture a knowledge intensive business process

The disadvantages of modelling point to the fact that insufficient data and inaccurate information as well as incorrect procedures and methods may possibly affect the accuracy of generated models and hence result in inaccurate representations of complex systems.

To address this challenge, clear guidelines or steps as presented by the six (6) step KMDL procedural model should be availed to ensure that sufficient and comprehensive data and information relevant for the accurate modelling of specific knowledge intensive business processes is obtained.

5.2.2 Relevant documentation

Relevant documentation provides a basis for modelling processes as it facilitates the collection and elicitation of information and data relating to specific knowledge intensive business processes. For the purpose of the research that was undertaken, the relevant documentation mainly in the form of project reports and additional documentation provided information on elements that represented the KMDL objects which thereafter supported the modelling process.

Documentation supporting modelling processes should therefore be a trusted and legitimate source of information and data to ensure accuracy.

5.2.3 Participation of individuals

Participation of individuals is a critical and important approach to be undertaken throughout a modelling process. This is because the participation of individuals active in a knowledge intensive process through the execution of tasks, provide a basis for the confirmation and validation of research findings feeding into a modelling process. Further, the participation of individuals eliminates biasness that may arise during the course of the research. Consequently, participation of individuals increases the accuracy of the data collected from the various sources and supports a valid modelling process.

5.2.4 A comprehensive software package

A well founded software package is essential to support a meaningful modelling process. As exemplified by the K-Modelling tool of the KMDL theoretical framework, the software

package should be able to explicitly and clearly capture all elements involved in a knowledge intensive process. The software package on a graphical user friendly interface should be able to illustrate knowledge flow processes and the integration of defined types of knowledge conversions along organisational processes.

5.2.5 A sound theoretical framework to interpret the data

The modelling and analysis of organisational knowledge flows require to be undertaken on the basis of a sound theoretical framework so as to attach meaning to processes. In the case of the research undertaken, the modelled knowledge flows were specific to those inherent in regional economic communities. The theoretical frameworks which supported the interpretation of the findings were therefore premised on economic integration, knowledge conversions based on the SECI model on which the KMDL is grounded and the concept of quality knowledge and related concepts.

The theoretical frameworks therefore guided the interpretation of the findings of the research and allowed for an understanding of knowledge flows and the concept of quality knowledge in the context of regional economic communities.

5.3   KNOWLEDGE IN REGIONAL ECONOMIC COMMUNITIES

The well-known proverb, "two heads are better than one" best sums up the practice of regional cooperation and integration. Cooperation among countries especially in Africa is one of the effective approaches to assist the multi-dimensional process of development and economic growth.

If effectively facilitated, cooperation agreements among others address the following issues;

- limited economies of scale
- inadequate resources to undertake development work
- promotes learning through the exchange of views on best practice
- enhances inter-regional trade flows and investments
- enhances competitive advantage of participating countries.

Regional economic communities therefore facilitate an interesting and often complex approach to regional development and economic growth. The complexity arises mainly due to the membership in the organisations which is characterised by multiple countries. Notwithstanding the fact that often the countries are a part of the same region and are in close proximity, the countries bring to the table different and unique factors. The unique factors specific to each country imply varying needs and challenges which require to be understood if indeed the

process of development and economic growth through integration is to be initiated and sustained.

As a result of the varying needs and challenges of member countries, regional economic communities are faced with a huge task in formulating and implementing development interventions which can adequately meet the specific needs of each participating country.

The dissimilarity in member country needs and challenges necessitates knowledge that meets the criteria of quality as discussed by the thesis. Quality knowledge lies at the core of development work undertaken by regional economic communities. Therefore effective management of processes that dynamically generate and utilise quality knowledge is important if tangible results are to be achieved and remain sustainable. The findings of the research point to the fact that quality knowledge is a pre-requisite for development work. There is need therefore to maximise its potential to support the work undertaken by regional economic communities.

Recognising that quality knowledge is a critical factor to accelerate the integration agenda entails the establishment of a conducive environment in which the dynamic creation and application of knowledge is centred on the meaning of quality. The establishment of a conducive environment will entail continually supporting the development and sustenance of individual knowledge and the establishment of appropriate structures.

5.3.1 Continuous development and sustenance of individual knowledge

At the core of knowledge intensive business processes are individuals who create value along the process through the fulfilment of knowledge requirements. As was the case with the specific project which was the focus of the KMDL analysis, a multitude of persons represented as knowledge objects were responsible for undertaking the identified tasks. The large number of knowledge objects present in the knowledge intensive business process translates in the fact that tacit knowledge embodied by the individuals is often aligned to an organisation's strategy and growth prospects. Enabled by knowledge, individuals can perform the following;

- formulate and develop interventions,
- package and review interventions so as to ensure that they meet the needs of stakeholders
- contextualise interventions into appropriate specifications
- make informed decisions concerning the implementation of decisions
- actualise and put into effect developed interventions.

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Without individuals, organisations cannot generate outputs that are consistent with their objectives.

Owing to the importance of individual knowledge in enhancing the performance and effectiveness of organisations, particularly in ensuring that created and applied knowledge meets the quality criteria, organisations require to deliberately put in place mechanisms to develop and sustain individual knowledge and support skills management on a continual basis. For the purpose of developing and sustaining individual knowledge, mechanisms employed by regional economic communities should include continuous capacity building and development activities at all organisational levels. The capacity enhancement of individuals should include specific subject matter training activities and exchange programmes to promote learning by doing.

5.3.2   Establishment of appropriate structures

In attempting to establish a conducive environment which promotes the generation and application of quality knowledge, regional economic communities require to set up appropriate structures that adequately support knowledge intensive business processes. The nature of the organisations demands that various stakeholders are involved in processes that facilitate the formulation of programmes and implementation. As a result of the involvement of multi stakeholders, complex organisational structures are established which as evidenced by the case analysis under taken by the research do not sufficiently support the generation and application of knowledge that is of quality.

The research has shown that weaknesses in knowledge flows inherent in regional economic communities are determined by structures which inhibit the following;

- accurate creation of knowledge

- adequate contextualisation of knowledge

- feedback processes

- adequate integration of knowledge across various process tasks

- expansion and adaptability of knowledge

- timely delivery of knowledge

- interaction and sharing of knowledge to facilitate learning.

To address the weaknesses in knowledge flows, regional economic communities should establish structures that promote and enhance the quality of knowledge. The structures established by the organisations should facilitate the following;

- active interaction and integration of knowledge active at all the points in the knowledge intensive process
- inclusivity of stakeholders particularly the participating member countries at all stages in the process to gain an accurate picture of specific country contexts
- ease in communication and coordination by facilitating the flow of knowledge throughout the process
- specific emphasis on strengthening monitoring and evaluation to enhance organisational learning
- timely feedback of inputs and outputs in processes
- flexibility in the performance of tasks so as to promote adaptability and expansion of knowledge.

5.4   QUALITY KNOWLEDGE AND RELATED CONCEPTS

Several definitions for the concept of quality knowledge have been presented by the thesis. The definitions for quality knowledge range from accuracy, relevance, accessibility, availability and sustainability to mention a few. In light if the various definitions, it is clear that a summation of the definitions point to the fact that quality knowledge is fit for purpose. The raison d'etre of every organisation is the purpose for which it was established. Without purpose there is no relevance and organisations cease to exist. Quality knowledge therefore enables organisations to fulfil the purpose for which they were established. Further, the various definitions and characteristics of quality knowledge align to the key dimensions of quality knowledge namely; intrinsic, contextual and actionable.

In view of the above discussion on the various definitions of quality knowledge, the illustration below shows the convergence of the concept of quality knowledge and related aspects for organisations. As the illustration shows, the integration of the characteristics of quality knowledge within the context of the intrinsic, contextual and actionable dimensions, support knowledge that is fit for purpose.

Figure 11. Quality knowledge and related aspects
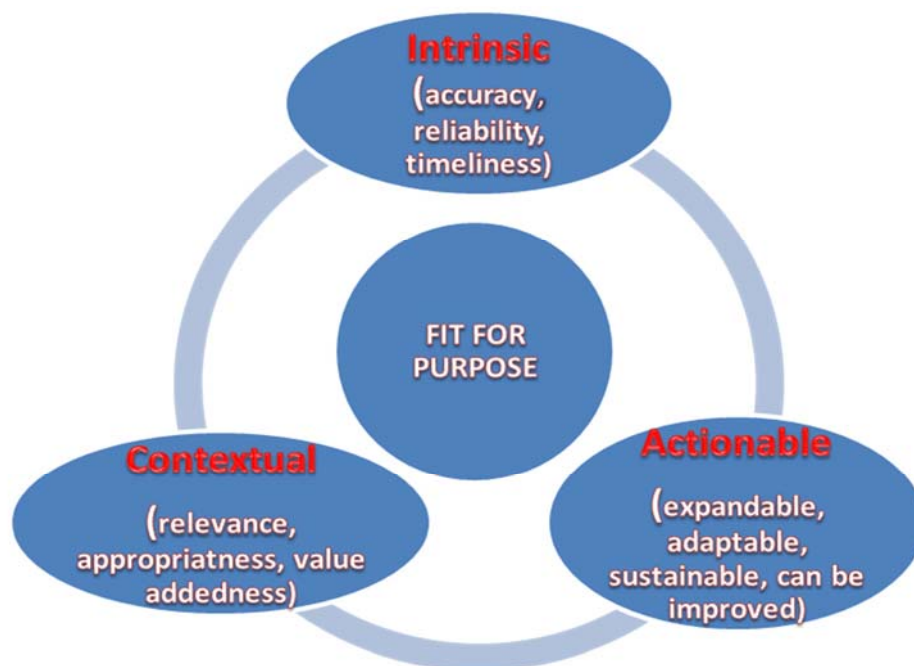
Figure 11 of the thesis illustrating quality knowledge and related concepts developed supported by the findings of the research, demonstrates that the intrinsic, contextual and actionable dimensions of quality knowledge require to be balanced. All three dimensions of quality knowledge require to be equally active in support of knowledge creating and application in complex organisations.

The conclusion that all three dimensions of quality knowledge require to be balanced is particularly accurate for regional economic communities as they formulate and implement programmes. The need to balance all three dimensions of quality knowledge emerges due to the influence of the unique factors that are related to the concept of quality knowledge[289]. As was the case of the specific project on which the research was focused, it is assumed that if indeed the contextual factors of the participating member countries had been accurately scoped out at the stage of project planning, but implementation of the project suffered a time lag causing delays in the actualisation of plans, a resultant effect would be the non-achievement of intended objectives.

A further example would be that of the learning aspect in the sense that an understanding of the unique contextual factors of member countries in project design and planning minus an active approach engaged to promote organisational learning would result in non-fulfilment and

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[289] The factors unique to the concept of quality knowledge include context, political will, aspect of time lag, feedback and resulting delays, learning and capacity.

unsustainability of project plans. The conclusion that limited organisational learning negatively affects project success and sustainability is evidenced by the fact that despite the plans envisioning continuation of efforts after the closure of the project; most activities came to an end and have since become dormant.

Furthermore, notwithstanding the fact that regional interventions can be well formulated and look good on paper, the interventions can be shelved and put on hold if the capacity at individual and institutional level in the member countries to facilitate implementation is inadequate.

From the examples given above on the need to balance all three dimensions of quality knowledge, the thesis contends that knowledge that is high in contextual value is essential in the development of project interventions that are relevant and appropriate. Knowledge that is high in contextual value is especially critical at the planning stage which guides knowledge intensive processes. However contextual knowledge only serves as a platform on which additional mechanisms can be employed to enhance the quality of knowledge in the intrinsic and actionable dimensions to support effective and sustainable regional interventions.

5.5   AREAS FOR FUTURE RESEARCH

The KMDL theoretical framework which facilitated the modelling of knowledge flows of the EPRCP's development and implementation process is grounded on Nonaka's theory of knowledge conversion. The theory of knowledge conversion presents the dynamic interaction of explicit and tacit knowledge through processes of externalisation, internalisation, socialisation and combination. As presented by the thesis, the knowledge flow model illustrated the knowledge intensive process of the project under analysis which showed the conversion of knowledge into other knowledge types.

The findings of the research present an implication for the KMDL theoretical framework owing to the aspect of the dimensions of quality knowledge presented by the thesis. The theory of knowledge conversion on which the KMDL is based suggests the continual dialogue between explicit and tacit knowledge, it was however noted from this research that the effectiveness of the dialogue can be diminished by the quality of the knowledge. The synthesis of the concept of knowledge quality and the theory of knowledge conversion raises the following questions;

- if the explicit knowledge active in the knowledge intensive process is low in the dimensions of intrinsic, contextual and actionable knowledge qualities, what bearing does this have on the quality of the conversion processes?

- If the existing tacit knowledge in the knowledge intensive process is adequate, is it correct to assume that actions on explicit knowledge will raise its quality?

The theoretical implication presented above, therefore presents an area for future possible research. The school and practice of knowledge management would benefit from research work which would attempt to shed light on knowledge quality within the context of the theory of knowledge conversion.

5.6 RECOMMENDATIONS

The undertaking of the research which included modelling of the knowledge flows inherent in the knowledge intensive process of a project implemented by a regional economic community aimed at the outcomes of developing a best practice intervention method for technical and organisational process improvements.

In introducing best practice intervention methods for technical and organisation process improvements, recommendations are presented as follows;

- in designing projects, there is need to identify specific functions of tasks that support operationalisation of a knowledge intensive process from beginning to end. The identification of specific functions of tasks should include the well definition of the tasks in relation to overall objective of projects so as to facilitate the identification of the appropriate level and type of knowledge inputs and outputs required for each task.

- inaugural process planning tasks serve as points in the knowledge intensive business process where solid knowledge platforms are established. Therefore timely and well executed planning activities should be performed to guide and serve as the basis for all project interventions. To support this process, readiness assessments should be undertaken to facilitate the development of targeted and relevant project interventions.

- to mitigate the challenges of delays experienced in the time periods between which project planning and implementation occurs, codes of procedure should be developed. The codes of procedure should stipulate appropriate time durations between tasks involving project design and planning, review, decision making and implementation.

- Comprehensive baseline diagnostic surveys should be undertaken prior to the commencement of projects to ensure the following;

    (i)   to obtain in depth knowledge on the context in which projects are implemented so as to develop "contextually fit" project interventions. The study areas in the surveys should include the political, institutional, historical and socio-economic

aspects of a context. As institutions are a key implementing partner in regional integration initiatives, a survey on the level of existing capacity is crucial.

(ii)   better understanding of the components that make up or contribute to the core purpose of projects to ascertain accurate cause and effect relationships.

(iii)   identification of unique challenges to every given context. The identification of unique contextual challenges will enable the development of specific, appropriate and value added project interventions in participating countries.

-   In addition to scoping out the political climate unique to each participating member country during the stages of project design and planning, there is need to continuously engage and sensitise countries on the benefits of integration. The continued engagement and sensitisation of member countries will raise the understanding and appreciation of regional interventions resulting in enhanced ownership and political will.

-   to enhance the actionable dimension of quality knowledge, clear and realistic implementation guidelines should be developed with all implementing units. The implementation guidelines should be developed particularly with participating member countries following the passing of decisions by governing bodies.

-   capacity enhancing efforts including training activities in implementing units particularly at member country level should be inclined towards developing knowledge bases in a sustainable and effective manner. Sustained development of knowledge bases will ensure that knowledge requirements for project implementation are consistently at par with knowledge objects.

-   establishment of robust monitoring and evaluation frameworks to support the continuous generation and application of quality knowledge through learning by doing.

The researcher acknowledges that the recommendations presented may not present a "silver bullet" to remedy the challenges in the quality of knowledge present in interventions implemented by regional economic communities. The assumption however stands that the recommendations will contribute towards the establishment of an organisational anatomy which supports the dynamic generation and use of quality knowledge.

5.7   CONCLUSION

The KMDL theoretical construct utilised by the research in modelling of the knowledge intensive process that was present in the overall development and implementation process of the EPRCP proved its credibility and versatility in modelling knowledge flows of complex organisations. Most specifically, use of the K-Modelling tool resulted in the comprehensive

mapping of the flow of knowledge through the various tasks in which active processes of knowledge conversion were present.

The research undertaken for the purpose of the thesis recognised that the knowledge intensive process analysed was not an active process but represented the project implementation period that was the focus of the KMDL analysis over a course of eight (8) years. The research and subsequent modelling using the K-Modeler however demonstrates that a framework is available that can systematically and proficiently capture and model knowledge flows inherent in complex organisations. Modelling of knowledge intensive business processes using the KMDL procedural model either captures and models continuous processes for which the framework is mainly used or as a snap shot of past events.

The modelling possibilities presented by the KMDL can be used for future projects developed and implemented by regional economic communities or similarly oriented complex organisations to trace and understand knowledge flows. The understanding of knowledge flows will ultimately enhance efforts made by the organisations to enhance the quality of knowledge. Of particular interest in the tracing of knowledge flows is the recognition that knowledge conversion processes as brought forward by the SECI model on which KMDL is grounded are always active in the dynamic cycle of knowledge creation. The understanding of the dynamic cycle of knowledge conversion can therefore support process recommendations and suggestions on how individuals and teams active in an organisation's knowledge intensive process can be enabled to yield quality knowledge.

Notwithstanding the immense challenges experienced by regional economic communities in managing knowledge that is of quality, evidence does point to the fact that relevant knowledge is being created. In the case of the specific project implemented by COMESA that was the focus of the KMDL analysis, the creation of relevant knowledge was especially observed in the focus area aimed at supporting national legislation processes in member countries to enhance public procurement systems which achieved good results.

Based on the observation that relevant knowledge is being created in regional economic communities, it is clear that efforts in enhancing the quality of knowledge can yield immense benefits for complex organisations especially if managed in full consideration of unique factors that affect the quality of knowledge. An understanding of quality knowledge in addition to the use of the KMDL framework or similar modelling tools based on process oriented knowledge management can be used to model potential knowledge flows in new projects as a means to

provide a point of reference on quality knowledge and its organisational wide impact. As a result of modelling exercises, mechanisms to address potential knowledge gaps can be factored in at all points in a knowledge intensive process.

In due consideration of the findings of the research and resulting interpretation, it is worth noting that utilising a good quality tool in knowledge management provides a basis on which organisations can determine if the appropriate mechanisms are being employed. Knowledge management tools should aim at adding value to organisational knowledge in support of strategic objectives. In addition, knowledge management tools should aide the identification of weaknesses and leveraging of process potentials.

To reiterate the importance of knowledge that possess high quality, the thesis concludes with a quote by the Rwandan President, Paul Kagame who stated that, "our development will be the result of work not words. Knowledge without action is meaningless. We cannot achieve development if we do not translate knowledge into action[290]."

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[290] Kwibuka E. 2015. Lead by action not words: Kagame tells local leaders. http://www.newtimes.co.rw/section/article/2015-06-13/189685/ accessed 2015/19/8.

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Annex

QUESTIONNAIRE

1.0   BACKGROUND

This research is being undertaken to analyse the quality of knowledge in organisations that are multilateral in nature with particular focus on regional projects. The analysis is focused on modelling knowledge flows within project components with the aim to determine the effect on the quality of knowledge. The focus of the research is the COMESA Enhancing Procurement Reforms and Capacity Project (EPRCP).

2.0 GENERAL

2.1 Kindly indicate the position you held in the project

2.2 Indicate the number of years you were in the position

2.3 Kindly indicate your field of expertise and qualifications

----

2.4 Indicate the number of years of experience

3.0   PROJECT COMPONENTS

3.1   Project consultants

The consultants involved in the project were instrumental in the preparation of technical reports and also participated in meetings of the technical committee of procurement experts. In your opinion, what knowledge was required for the consultants to fulfil their role?

e.g Specialised knowledge

In your opinion would you say this knowledge was present? Yes ☐ No ☐

If no please state why:

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3.2   The Technical Committee of Procurement Experts (TCPE)

The TCPE's involvement in the project was critical as it met regularly to discuss and exchange views on public procurement thereby providing strategic leadership. In your opinion, what knowledge was required by the committee to fulfil its mandate?

e.g. Knowledge in member country requirements

In your opinion would you say this knowledge was present? Yes   ☐ No   ☐

If no please state why:

3.3   The Legal Committee

The legal committee played a key role in the consideration of legal instruments pertaining to public procurement reforms in the region.In your opinion, what knowledge was required by the committee to fulfil its mandate?

e.g. Knowledge in legal drafting

In your opinion would you say this knowledge was present   Yes ☐   No ☐

If no please state why:

3.4   Ministers of Justice and Attorneys General

The Ministers of Justice and Attorneys General played a key role in considering the recommendations of the legal committee and preparing reports for Council.In your opinion, what knowledge was required by the Ministers of Justice and Attorneys General to fulfil their mandate?

e.g. Knowledge in national laws and constitutions

In your opinion would you say this knowledge was present   Yes ☐   No ☐

If no please state why:

3.5   The Intergovernmental Committee (IC)

The IC played a key role in the project by deliberating and consolidating recommendations of the TCPE. In your opinion, what knowledge was required by the committee to fulfil its mandate?

e.g Knowledge in member country requirements

In your opinion would you say this knowledge was present   Yes   ☐   No ☐

If no please state why:

3.6   Council of Ministers

The Council of Ministers played a key role in the project by making decisions to guide implementation.In your opinion, what knowledge was required by Council to fulfil its mandate?

e.g Knowledge in member country requirements

In your opinion would you say this knowledge was present   Yes ☐ No   ☐

If no please state why:

3.7   Implementation

In your opinion what knowledge was required by the member countries/national procurement agencies to ensure effective implementation of council decisions? In your opinion, what knowledge was critical in enabling the process of implementation?

e.g. Project knowledge

In your opinion would you say this knowledge was present   Yes ☐   No ☐

If no please state why:

4.0   KNOWLEDGE QUALITY

4.1   In your opinion, was the flow of knowledge within the project well facilitated?

4.2   In your opinion, would you say the project generated and utilised quality knowledge?

4.3   What mechanisms would you recommend to support the efficient flow of quality knowledge?