

**INFLUENCE OF PROJECT MANAGEMENT PROCESSES ON
OUTCOMES: CASE OF PUBLIC SECTOR INFRASTRUCTURE
PROJECTS AT TELKOM KENYA LIMITED**

BY

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planning and management of University of Nairobi**

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DECLARATION

This research project is my original work and has not been submitted for examination in any other university

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DEDICATION

I dedicate this research project to my parents Mr and Mrs Nyakundi, my wife Elizabeth and daughter Joy. I thank them for the support and understanding they have extended to me throughout the study. I will forever remain grateful.

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ABBREVIATIONS AND ACRONYMS

BM	Business Market department
3G	Third Generation mobile network
CCK	Communication Commission of Kenya
CDMA	Code Division Multiple Access
CIO	Chief Information Officer
CSFs	Critical Success Factors
EVDO	Evolution Data Optimized
EVM	Earned Value Management
eCRM	Electronic Customer Relation Management System
FT	France Telecom
GCCN	Government Common Core Network
GoK	Government of Kenya
GSM	Global System for Mobile communications
IATA	International Air Transport Association
ICT	Information and Communication Technology
IFMIS	Integrated Financial Management Information System
IMF	International Monetary Fund
ISO	International Standards Organization
ISPs	Internet Service Providers
ITS PMG	Information Technology Project Management Group
ITU	International Telecommunication Union
IBM	International Business Machines
IT & N	Information Technology and Networks

KENET	Kenya Education Network
KPI	Key Performance Indicator
KPLC	Kenya Power and Lighting Company
KPTC	Kenya Posts and Telecommunications Corporation
LION II	Lower Indian Ocean Network, route 2
MM	Mass Market department
MSAN	Multi Service Access Node
NGOs	Non-Governmental Organizations
NOFBI	National Optic Fibre Infrastructure
NPV	Net Present Value
NTCP	Novelty, Technology, Complexity and Pace framework model
OFC	Optical Fibre Cable
PCK	Postal Corporation of Kenya
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PM	Project Management
PoP	Point of Presence, a telecommunication aggregation hub.
PRINCE 2	PR ojects I n a C ontrolled E nvironment
PwC	PricewaterhouseCoopers
ROI	Return on Investment

ABSTRACT

Project management is a strategic competency that enables entities to link project outcomes to business goals. Telkom Kenya embarked on a series of projects in 2009 as part of the company's wider strategy to support its growth and compete effectively in a dynamic market. The purpose of this study was to investigate the influence of project management processes on the outcome of selected public sector infrastructure projects. The study was guided by four research objectives namely: to determine the influence of project initiation and planning process on project outcome; to examine the influence of project execution process on project outcome; to investigate the influence of monitoring and controlling of projects on project outcome; and to establish the influence of project closure processes on project outcome in Telkom Kenya. The study focused on staff at Telkom Kenya headquarters, from where all projects are centrally managed. Project management was overseen by a team of project managers who worked closely with other functional units such as sales and marketing, finance, quality and audit, technical units, customer support and procurement. Descriptive survey research design was adopted for the study. The population of this study comprised 613 staff. In particular, key persons involved in running the projects were interviewed. The study used stratified random sampling to sample 83 respondents. Questionnaires with both open and close-ended questions were used to collect data. In order to ensure consistency, the completed questionnaires were checked for completeness. The collected data was coded and categorized. The data was analysed and presented in form of tables and frequencies. From the findings, 67 % of the respondents indicated that project planning and initiation influenced project outcome to a very great extent; 44% of the respondents agreed that project execution influenced project outcome to a very great extent; 75 % of the respondents recommended changes to the project monitoring and control procedures to positively influence project outcome. Also, it was established that 55% of the project outcome was influenced by project management processes. The study concluded that there was a significant relationship between project management processes and project outcome. The findings led to the conclusion that execution had the least influence on the project outcome. It was also concluded that the project closure process had the greatest influence on project outcome. The regression model indicated that the closure process had the largest magnitude. The study recommended that: effective project planning and initiation activities to be applied to all public sector projects; emphasis be given to implementation activities that will ensure plans are effectively executed in order to fully meet set objectives; introduction of effective monitoring tools; training of staff on use of monitoring tools; use of effective communication; and improved reporting and documentation. Finally, the study recommended that project outcome should be evaluated from the customer acceptance and satisfaction perspective, as well as that of the business objectives of the organization.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Project management is a strategic competency that enables entities to link project outcomes to business goals (Project Management Institute, 2014). For organizations running several short term customer projects, Kerzner (2003) observed that project management is designed to control company resources in a given activity within the constraints of time, cost , acceptable level of performance and good customer relations. Project management follows a specific sequence of phases which define the work to be done, the person to do the job, the milestones, the person to approve and review the milestones as well as the control and monitoring of the milestones (Project Management Institute, 2013).

Project Management involves the undertaking of routine tasks that constitute the project management phases of Initiating and Planning; Executing, Monitoring and Controlling; and Closing (Project Management Institute, 2013). Project Implementation entails activities that must be accomplished within competing constraints of time, budget, scope, quality, risks and resources (Atkinson, 1999). Organizations are increasingly investing more resources in projects such as new product development, process improvement and design of new services. However, studies show that these projects fail to meet the budget and time constraints, or they fail to satisfy customer expectations and company objectives (Sausser, Reilly, & Shenhar, 2009).

In a survey by PMI on International Air Transport Association, IATA (International Air Travel Association, 2014) it established that after offering project management training, the beneficiaries reported an increased revenue, reduced cost and improved overall health and regulatory environment of the aviation industry. Globally, 80% of Executives believed that having project management as a core competency helped them remain competitive during recession (The Economist, 2009). In addition, McKinsey & Company (2010) survey report showed that 58% of 1400 global executives prioritized strong project management discipline for future growth. Information Technology professionals on Chief Information Officer (CIO) forum reckon that project management success factors include buy-in from top management, clear definition of scope and requirements, effective communications, right project resources amongst others (CIO, 2010).

Application of project management methodologies in Africa shows positive effective on project outcomes in the continent, especially in the private sector and in Non-Governmental Organizations (NGOs). Research into Nokia projects in Africa (Sheiki, 2014) revealed a positive correlation between proper Earned Value Management (EVM) and project success. The study established that planning phase and initial assumptions made influence the way EVM can be handled, hence impacting on project outcome. According to PriceWaterhouseCoopers (PWC) survey, capital projects and infrastructure delivered expected benefits to stakeholders (PriceWaterhouseCoopers, 2014). Respondents indicated that key challenges included lack of skills and capacity to handle large projects, project delays and budget overruns. Adoption of project management methodologies and practices in the entire project life cycle increases chances of achieving project goals.

In Kenya, the adoption of modern project management methodologies has been linked with improved performance in the Kenyan Banking sector. In the study by Kamau (2013) a marked improvement was observed in customer satisfaction, realization of business objectives as well as the project constraints of time, cost and quality. Project performance can be improved by excelling at core project management practices particularly delivery timelines and thorough quality checks (Bloch, Blumberg, & Laartz, 2012). For instance, KPLC adopted project management as a key strategy to cope with challenges in the external environment in its distribution line construction. Mwangi (2006) observed that 85% of the KPLC projects were late and incomplete; concluding that stakeholders, especially customers were dissatisfied. Telkom Kenya's parent company, France Telecom (FT) realized that customer satisfaction and operational efficiency as key for future growth as outlined in their 2015-2020 strategic plans (France Telecom, 2015).

1.1.1 Profile of Telkom Kenya Limited

The origin of Telkom Kenya can be traced to the former Kenya Posts and Telecommunications Corporation (KP&TC). Based on a policy framework jointly developed by the Government of Kenya (GoK) and the International Monetary Fund (IMF), reforms in the telecommunications sector were undertaken that culminated in the enactment of the Kenya Communications Act, 1998. This formed the legal basis for the split of KP&TC into the Postal Corporation of Kenya (PCK), Communication Commission of Kenya (CCK) and Telkom Kenya Limited in 1999 (Public Investments Committee, 2014).

Telkom Kenya was established as an operator under the Company's Act (Cap 486) of the Laws of Kenya. On July 15th 1999, it was granted 5 years exclusive right to operate in Nairobi and long distance internet links. Following the end of the exclusivity period on 30th June 2004, CCK fully liberalized the sector on September 8th same year (UNACTAD, 2008). In order to give impetus for growth, Telkom Kenya was privatized through a bidding process where France Telecom S.A. emerged winner with a USD 390 million bid for 51% stake. France Telecom launched operations in 21st December 2007, offering a wide range of voice and broadband data services for residential and business clients. These services include landline services (Telkom fixed), with a wireless equivalent on CDMA platform. It has the widest network facilities across the whole country. Besides, Telkom also manages the National Optical Fibre Backbone Infrastructure (NOFBI). Telkom has now connected 37 counties to her high speed optical fibre infrastructure. Besides, it connects all counties to the National Treasury's Integrated Financial Management System (IFMIS). On the mobile platform, it has launched high speed 3G mobile data network in all county headquarter towns. Telkom simultaneously shut down the CDMA whose operating costs exceeded the revenues generated (ITU, 2015).

In 2012, Telkom Kenya launched a KES 1.4 billion *Pambazuka* Programme that sought to revamp the entire network infrastructure from copper to optical fibre cable to combat vandalism. Also, Telkom has installed next generation switching technology Multi Service Access Node (MSAN) in Nairobi and major towns. This has led to a significant reduction of operational expenditure. It also improved service provision and quality, improved efficiency in monitoring of the network infrastructure and turnaround in responding to emergencies and customer queries. Over 700 buildings were connected to MSAN and fibre optic cable. Telkom's biggest switch centre, the Milimani Exchange, in Nairobi, had been migrated by the end of April 2013 followed by installation of additional 25 regional switches. This programme formed part of the company's wider strategy to support the growth the entire market chain: SMEs, large Corporates as well as public sector organisations to cope with their dynamic ICT needs (Telkom Kenya Limited, 2014).

Since the incorporation of Telkom Kenya in 1999, it has implemented more than a thousand projects. These projects were undertaken to solve challenges faced by clients or to take advantage of market opportunities. Some of the projects include: responding to regulatory ruling; improve customer service and trouble handling; responding to client request for service; design, install and configure networks to support customers and certain services;

building entirely new infrastructure in line with emerging technologies and building of new facilities such as data centres and points of presence (PoPs). Some of key projects accomplished include: Nairobi Metropolitan Surveillance System; Government Common Core Network (GCCN) to interconnect ministries and government agencies; LION II submarine cable; design and maintenance of National Optical Fibre Backbone Network (NOFBI) phase I, Nation-wide interconnectivity for counties to IFMIS system and Huduma Centres; connecting universities to KENET PoPs; providing national branch connectivity to Kenya's 5 largest banks; national and regional state agencies and providing wholesale connectivity to all Internet Service Providers (ISPs); amongst others. These are some of the projects that were targeted to help the organization achieve its objective of growth and profitability.

1.2 Statement of the Problem

In the quest to survive and remain competitive, organizations have been forced to continuously adapt to changing business environment. Project Management has been identified as a part of a competitive strategy for organizations. It is viewed as a strategic competency for organizations that links project outcomes to business goals (Project Management Institute, 2014). Successful implementation of projects enables business entities to fully realize targeted business objectives such as growth and profitability. PricewaterhouseCoopers's survey (PwC, 2007) indicated organizations must employ effective Project Management processes on the right projects in order to properly align with the organizational strategy. Traditionally, project goals would focus on meeting requirements on time and within budget. However, modern project management approach increasingly focuses on realizing business results through multiple criteria.

Lim & Mohamed (1999) defined completion and satisfaction as two success criteria for project. Contract items such as time, cost and scope define determine the completion success criteria. On the other hand, satisfaction is derived from utility, quality and operation. Kerzner (2003) maintains that organizations consider success of project management to encompass business results with respect to on-time delivery, meeting contractual requirements and within budget performance. Indeed, (Gwaya, Munguti, & Wanyona, 2014) established that project success is determined by the extent to which targets set by clients have been met within the tripple constraints. Success of project management is also viewed in terms of the delivery process as well as the perception of the value of what was delivered (Steinfort & Walker, 2007). Projects are key to success for several organizations. Cooke-Davies (2007)

noted that all organizations achieve business change through projects and indeed, projects are means by which they deliver profits to their shareholders.

After the full liberalization of the telecommunication sector in 2004, the Government of Kenya privatized Telkom Kenya in 2007 (Public Investments Committee, 2014). The organization immediately embarked on network modernization projects as part of her growth strategy. Telkom Kenya was granted a mobile operator license by the Communication Commission of Kenya (CCK) and immediately rolled out Code Division Multiple Access (CDMA) /2000 Evolution Data Optimized (EVDO) 1X network technology. In September 2008, Telkom rolled out GSM services under the brand 'Orange'. Telkom further expanded her network after receiving a 3G licence from CCK in November 2010 (CIO, 2010). In March 2011, Telkom awarded ZTE a contract to build a high speed 3G network that was commissioned by the Kenyan President in September the same year (ZTE, 2011). The various mobile network projects were part of the turnaround strategy to revive Telkom's growth.

Telkom Kenya further embarked on expanding the submarine and terrestrial optical fibre cable (OFC) network expansion to increase its reach its network capacity and replace old copper network. It broke ground on three projects: Lower Indian Ocean Network (LION2) submarine cable; installation of state-of-the art Multi-Service Access Nodes (MSAN) switches (Telkom Kenya Limited, 2014). Further, Telkom partnered with the government in interconnecting ministries, state agencies and 35 counties through her own inland OFC network alongside government-owned NOFBI. Through this, counties were able to connect to The National Treasury's IFMIS. By the end of the first half (H1) of 2014, Telkom had a forty per cent increase in traffic across her network and recorded a corresponding revenue growth of 8%. This upward trend was attributed to the projects successfully commissioned that enhanced Telkom's competitive advantage in the market (CNBC Africa, 2014).

Evidently, Telkom's series of infrastructure projects earned loyalty and a larger market share in major corporate firms and government institutions. Most of these clients run mission critical operations and provide strategic and sensitive services members of the public, embassies, foreign missions, security agencies, health facilities, interconnectivity for financial institutions, manufacturing, media and entertainment amongst others. In order to meet the strict specifications, timelines and budgets in providing these services, efficient project management processes must be in place to ensure successful service delivery. The organization has three specialized department that handle customer orders: Carrier Services

that provides wholesale services to other service providers (SPs); Mass Market (MM) which sells service to mobile subscribers and Business Market (BM) that deals with private corporate enterprises, public sector entities, counties and state agencies, Small and Medium sized enterprises and partners. The study will focused on Business Market department's project management processes and their influence on public sector infrastructure projects' outcome.

1.3 Purpose of the Study

The purpose of the study was to assess the influence of project management process on outcome; as case of public sector infrastructure projects in Telkom Kenya Limited.

1.4 Research Objectives

The study sought to meet the following objectives.

1. To determine the influence of project initiation and planning process on project outcome.
2. To examine the influence of project execution process on project outcome.
3. To investigate the influence of monitoring and controlling of projects on project outcome.
4. To establish the influence of project closure processes on project outcome.

1.5 Research Questions

1. How does project initiation and planning influence project outcome?
2. What influence does project execution process have on project outcome?
3. What is the influence of monitoring and controlling on project outcome?
4. How does project closure processes influence project outcome?

1.6 Significance of the Study

The study findings may assist policy makers in making decisions that regard transition of state corporations to full commercial entities in order improve their competitiveness. Telkom Kenya also manages critical communication infrastructure for government agencies, ministries and state corporations. The findings may particularly be used in drafting policy to improve timely delivery of public services such as health, security and education.

Shareholders will also draw useful insights on strategy implementation that is timely and responsive to the market shift. This is particularly important in telecommunication sector which experiences rapid technological advances. Timely investment in the right resources

will grant an organization competitive advantage and help it grow and sustain its market position.

Also, the study findings may help customers understand internal process flows required for Telkom Kenya to deliver the services ordered. This information will enable customers to plan adequately for upgrades, migration from current service providers or budget sufficient funds. The suppliers and contractors will also apply the findings in planning for projects as key stakeholders.

Many scholars have researched on Telkom Kenya on diverse topics such as change management, effects of globalization and implementation of turn-around strategies. This study may help researchers understand the influence of modern project management methodologies business objectives.

1.7 Delimitation of the Study

The study focused on the influence of project management processes on project outcome in the business market department at Telkom Kenya, Nairobi. This involved selected public sector infrastructure projects in government ministries, agencies and parastatals.

1.8 Limitations of the Study

During the course of the study, the researcher encountered reluctance by respondents to fill questionnaires for fear that the information would be used against them. The researcher obtained an introductory letter from the university that assured the respondents that their information would be used for academic purposes and will be held in confidence.

1.9 Assumptions of the Study

Project outcome is influenced by several internal and external factors. Project management processes are key determinants of the project outcome. First, this study assumed that the processes significantly influence the overall time, cost, quality and end user satisfaction. In particular, the initiation and planning phase defines the subsequent stages of execution, monitoring, controlling and closure. Secondly, each stage was presumed to influence project outcome to different extent. Finally, the research assumed that the respondents would be objective, respond truthfully and that the information provided would be accurate without bias.

1.10 Definition of Significant Terms

Closure process: This is the final project process that signifies the end of the project that has been successfully completed or has been terminated prematurely. In the telecommunication sector, it involves testing products delivered, customer acceptance and sign off, thus triggering billing. In other occasions, projects are cancelled due to disruptions, disputes or changes in business priorities.

Initiation and planning process: Project initiation is the creation of sound baseline for project management by identifying key elements and determining the steps to be followed to achieve set objectives. Project planning on the other hand, is the establishment of a predetermined course of action, which is iterative and continuous over the life of the project.

Monitoring and evaluation process: Monitoring is the systematic and regular collection and analysis of data prior to and during project implementation. Project control is a project management function that tracks the project progress towards achieving the stated objectives within project constraints; identifies deviations; evaluates alternative courses of action and takes remedial actions.

Project execution process: This is implementation of project activities by leading and performing work as described in the management plan and effecting changes approved to realize the set objectives. In a typical telecommunication environment, the execution involves signing of service contracts, down payment, holding internal and external kick off meetings, and initiating the procurement processes.

Project management processes: These are the logical sequence of stages a customer order follows. It begins with feasibility study and design; planning and execution; monitoring and controlling; closure and billing. These processes are unique to the telecommunication sector, with some stages overlapping.

Project outcomes: These are medium term results that are observed sometimes after the project activity comes to a close. In the telecommunication sector, this is indicated by increased monthly revenues, increased customer orders and higher levels of customer retention.

Public sector infrastructure projects: These are ICT projects undertaken by Telkom Kenya for government agencies; corporations; institutions and parastatals. The projects are undertaken through single sourcing, participation in requests for proposals/quotes (RFP/Q) or through public private partnerships. The scope includes design, building and maintenance of

communication networks, software and installation of active components. It also covers the provision of Internet services, leased lines, consultancy services and technical support.

1.13 Organization of the Study

The study was organized into five chapters. Chapter One introduced the concept and contained the background of the study and that of Telkom Kenya; the statement of the problem; the research objectives; research questions; significance of the study; limitations and assumptions of the study. Chapter Two dwelled on the review on literature on the following topics and subtopics: Introduction; projects management processes; the concept of project outcome; influence of project management processes on project success; the theoretical framework and the conceptual framework; knowledge gap as well as summary of the chapter. Chapter Three discussed research methodology that was used to conduct the study and it comprised of the research design; target population; sample size and sampling procedures; data collection instrument; data collection procedures; data analysis techniques; ethical considerations and operational definitions of the variables. Chapter Four presented and analysed data. Finally, Chapter Five comprised of summary of findings; discussions, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented a review of literature related to the relationship between project management and organization performance. The chapter discussed the concept of project management processes and cycles based on PMI and PRINCE2 and their adoption in telecommunication sector. The researcher specifically reviewed literature on the four distinct phases of project management such as initiation and planning, execution, monitoring and controlling and project closure. The review also established the influence of the processes on project outcome. Finally, this chapter also anchored the study on theoretical and conceptual framework.

2.2 Concept of Project Management Cycles/Processes

According to the PMI's PMBOK, projects are temporary endeavours undertaken to meet unique goals and objectives within a definite scope, timeframe and budget. The project therefore follows a logical sequence made up of five stages namely; Initiation, planning, execution, monitoring and controlling and the closure stage (PMI, 2013). On the other hand, Projects In a controlled environment, version 2 (PRINCE2) is a process-based structured project management methodology that is logical organized and follows a defined sequence. This methodology stipulates that projects must have organized and controlled start, middle and end. The processes in PRINCE 2 define the key inputs, outputs, activities and specific objectives (ILX Group, 2015).

Project activities are undertaken to realize targeted project goals in a determined schedule with finite resources. While project management mainly focuses on the triple constraints of cost, budget and time; there exist organizational constraints that impact the project management processes. Therefore, improving the management of the constraints will enable organizations to achieve their business goals. The UC Santa Cruz ITS PMG adopted a project methodology comprising of five project management phases. At the definition phase where the project dimension is determined and a project proposal prepared based on rough estimates and Go/No Go decision is made. The second stage is planning which involves scoping where a project plan is drawn detailing timelines, the budget and required resources. At launch, a specific project governance structure is established. The project team holds a kick-off meeting where members are assigned responsibilities and deliverables. The managing is the

fourth stage that involves project execution by implementing tasks defined. In this stage, effective communication and regular reporting of the project status is critical in managing the expectations of the relevant stakeholders. The last stage is project closure which requires appropriate sign off, knowledge transfer and documentation. While the description is sequential, in practice, the phases can overlap or run simultaneously (ITS Project Management Group, 2014).

Project success can be determined if the success criteria are defined from the start and based on three tiers. First, the project completion success can be based on the triple constraint of time, cost and scope. Secondly, success can be defined by how well a product or service is received by the intended final user. Service uptime, reliability and customer satisfaction are some metrics that can be used to measure success. Finally, project success can be determined by using a criterion that measure the value a product or service brings to an organization and the strategic or financial benefits it brings (PM Stack Exchange, 2014).

Several researchers such as Pinto and Slevin (1988) have identified a set of best practices in project processes that enhance and secure project success. These include: project mission-clarity of goals and strategic objectives; top management support-for resource allocation and provision of authority; project schedule and plan-detailed breakdown of roles and responsibilities; client involvement-active consultation and communication with all stakeholders; personnel-constitution of qualified and competent project team; technical tasks-availability of required tools, expertise and training; client acceptance- successfully pushing final product or service into the market; monitoring and feedback-timely dissemination of control information during the execution phase of the project; communication-sharing the necessary network and date to relevant stakeholders during execution; and problem solving-timely resolution and mitigation of arising issues and risks. (Cleland & Gareis, 2006; Cooke-Davis, 2001) concurred that indeed, these practices guarantee effective and successful projects and project management. The International Standards Organization(2012) embarked on the development of international project management standards; ISO 21500:2012. These are viewed in two perspectives: as five process groups comprising of initiating; planning; implementing; controlling and closing, or ten subject groups namely integration; stakeholders; scope; resource; time; cost; risk; quality; procurement; and communication (Rehacek, 2014).

Project outcomes can vary in the degree of expected results and only few are completed without trade-offs. Therefore, success may be seen in a perspective in terms of satisfying the internal or external customer by considering critical success factors (CSFs). One of the factors to consider is the organizational project management maturity and the compliance of the project within policy and guidelines. The main focus is at organizational policy, guidelines per project cycle and per project as well as periodical project phase review. The second factor the view that project success is determined primarily by customer satisfaction, while secondary success is defined by internal benefits accrued. The CSFs determines requirements for meeting desired deliverables. Key performance indicators (KPIs) can be used to measure the effectiveness of the processes measured periodically to assess their influence on desired outcome (Kerzner, 2003). In the same breadth, the author argues that projects that fail to satisfy the triple constraints and fail to yield the desired benefits are considered to have failed. The summative failure thus consists of the actual failure to meet the tripple constraint as well as not satisfying the intended user.

2.3 Influence of Project Initiation and Planning on Project Outcome

Project initiation is the creation of sound guideline for management of a project by identifying key elements and determining the steps to be followed to achieve objectives. At initiation, the timelines are defined and the persons responsible for each action are identified. (UK Government, 2010). The end result of initiation is a project proposal that acknowledges an existing problem, a proposed solution and how it will be executed. The output of this stage is a project charter whose purpose is to outline the business case, the approval and committed resources (PMI, 2013). This is the stage where stakeholders are identified; briefed on the scope and objectives and their expectations are taken into account.

Project planning on the other hand is the establishment of a predetermined course of action within a predicted environment (Kerzner, 2003). Kerzner further asserts that the planning process must be systematic, flexible, disciplined and capable of accomodating input from diverse functions. The planning process is most effective when it iterated and occurs throughout the life of the project. Indeed, every phase of the project processes require substantial planning. Subsidiary plans for each stage are integrated into the overall project plan. The final comprehensive plan will defines the project's execution, its monitoring and control and closure (PMI, 2013). Well prepared plans include subsets that explains the management of scope, requirements, schedule, cost, quality, risk, resources, process improvement and stakeholders. The final aspect of planning is the element of communication

that ensures stakeholders remain informed and updated on the project progress to facilitate their effective participation.

In many organizations, project management teams are bestowed with diverse responsibilities. The most significant tasks include planning, estimating, scheduling and executing the plan. These activities are iterative and continuous throughout the life of the project (Perminova, Gustafsson, & Wikstrom, 2008). Formal planning has a direct impact on project success (Divr & Lechler, 2004). They considered that a rigourously prepared plan is a foundation for project success. Indeed, a clear and thouroughly defined project plan can reduce risks, failure and the cost of the project (Lewis, 2010).

Project initiation and planning is a critical phase in project management. It starts with a joint meeting of project stakeholders to clearly understand objectives, deliverables and criteria of project success (Jacob & MClelland, 2001). During project selection, the need and viability for the project is defined and justified. At this stage, the desired outcomes and benefits are specifically outlined, quantified and agreed upon. The project plan is drafted detailing activities to be executed to meet the triple constraints as well as the expected goals and benefits (Havard University School of Managemnt, 2007). The resulting plan provides details on how the desired outcomes and benefits will be delivered; the management of key stakeholders; determines the required resources and their availability. Besides, the plan also provides details of risks involved and the mitigation plan; the monitoring and controlling procedures and metrics. Finally, the closure process is pre-determined and all parties must approve the project closure process and checklist. It consists of the activities and documentation that signify the formal end to a project.

2.4 The Influence of Project Execution on Project Outcome

The execution stage involves the implementation of project activities. Thus, it is the process of leading and performing work as described in the management plan and effecting changes approved to realize the set objectives. This stage is characterized by continuous performance of project activities, change requests, monitoring and control, risk, quality, communication and stakeholder management (Desmond, 2004). In a typical telecommunication environment, the execution involves signing of service contracts, down payment, holding internal and external kick off meetings, and initiating the procurement processes.

During implementation, a number of factors affect the direction of the project. The PMI (2013) outlines the key aspects in this phase. First, the inputs in this stage include the plan, the change requests, business environmental aspects and organizational policies and assets. Secondly, the available tools and techniques applied during execution influence the progress of the project. These include the project management information systems, stakeholder and project team meetings, communication channels and monitoring and control activities. In the course of execution, deliverables are assessed and measured; change requests are effected and documented; project documents are updated to reflect progress and change requests. The project team directs the project activities and manages the various organizational and technical interfaces existing within the project.

Successful project execution is an organizational priority. Various researchers have shown that several project success factors can impact a project at all phases. In the execution phase, project success is related to the project's timely completion, on budget and within agreed quality (Kerzner, 2003). However, the understanding of project success has been altered to include limitation to minimum changes in the scope of the activities, shift in the corporate culture and acceptance of project results by clients (Alexandrova, 2012). Shenhar, Levy, & Dvir (1997) postulated that project success is measured in four dimensions, one of which is project efficiency during execution and immediately after completion. The researchers pointed out that shorter product life cycle and time-to-market increased an organization's competitive advantage. Further, they affirmed that impact of project management on the performance of an organization can be viewed in two broad dimensions of the commercial success of projects and the future potential created.

2.5 Influence of Monitoring and Controlling on Project Outcome

Project monitoring is the systematic and regular collection and analysis of data over a period of time to identify and measure changes. Monitoring involves the collection of data prior to and during project implementation (United Nations Environment Programme, 2008). The primary purpose of monitoring is to document the implementation process, facilitate decision making, and provide feedback for plan review and lessons learnt. According to PRINCE 2, project control is project management function that comprises of monitoring, evaluating and comparing actual versus planned results (ILX Group, 2015). It tracks the project progress towards achieving the stated objectives within project constraints; identifies deviations; evaluates alternative courses of action and takes remedial actions (Larson & Gray, 2011).

Together, monitoring and control form the project control cycle of Action-Plan-Monitor-Compare; and then re-plan as necessary.

Project monitoring and control have increasingly become key functions of project management as projects grow bigger and more complex. It is the process of tracking, analysing and reporting progress with respect to objectives. This task helps stakeholders to understand the current state of the project, activities undertaken, the budget, schedule and scope forecasts. Monitoring and control cycle consists of: making a plan; implementing the plan; monitoring and recording the actual output; report the actual output, the planned parameters and the variations and finally; take corrective action on the variations (Shrenash, Pimplikar, & Sawant, 2013). This phase of the project provides an understanding of the project's progress so that appropriate corrective action can be taken when the project's performance deviates significantly from the plan. In traditional project management, control would involve identification of deviations from the project plan and put things back on track. However, the adaptive project management approach identifies changes in the business environment and adjusts the plans accordingly.

This task is carried out throughout the life of the project by taking measurements that help the project team understand progress. This stage has an impact on the business objectives and acceptance of the eventual project outcome in terms of quality. By applying the Deming cycle or the Plan-Do-Check-Act cycle philosophy (American Society of Quality, 2015) to this project stage, the project team ensures project specifications and constraints are adhered to as closely as possible. Indeed, this philosophy is affirmed by the theory of constraints (TOC) as applied by organizations and project managers, who work towards continually improving their ability to meet project commitments of budget, time and quality through the nature of project planning, project scheduling, project visibility and control, resource behaviour and multiple project synchronization (Avraham Goldratt Institute, 2009). The TOC contribution requires a project manager to understand the system process and the organization's goal (Gupta & Boyd, 2008). The performance of an organization requires that improvement is seen as a long term and continuous process to improve and sustain high quality project results and therefore ensure project success in all dimensions.

2.6 Influence of Project Closure Process on Project Outcome

Projects are temporary endeavours and must come to an end at some point. There are key objectives of project closure. Key amongst them are: checking the extent to which the

deliverables have been met; confirming customer satisfaction; securing formal acceptance and sign off for deliverables; spelling out the support, maintenance and warranty issues where applicable; preparing a report with recommendations and documenting lessons learnt (ILX Group, 2015).

Projects may end normally after successful completion or maybe terminated pre-maturely. There are several reasons that may lead to project termination and these include political, technical, force majeure or business reasons. Normal project closure occurs when a project is completed and the aims have been met, perhaps with some modification of scope, budget and schedule. Some projects may end prematurely due to insufficient funds, reduced scope; loss of senior management support; negative cost/benefit analysis; low return on investment (ROI); changed organizational priority or due to a natural calamity (Larson & Gray, 2011). Some projects may face closure due to political instability; changes in the regulatory environment; technological obsolescence; change in competitive factors; higher priority if competing projects or intellectual property issues.

The project closure involves a number of steps that result in contractual and administrative closeout. Contractual closeout mainly involves the settling of the final terms of engagement. The parties confirm that work was done accurately and according to or beyond the client's satisfaction. According to Shenhar *et al.* (1997), the second dimension of project success centred on the impact of the project on customer. In their observation, meeting performance measures, functional requirements and technical specifications determines the level of customer satisfaction. Documents prepared throughout the project life are filed for future reference. The administrative closure involves obtaining formal acceptance of the product or service from clients. An official sign-off is required as an acknowledgement by the customer and is filed as part of the project documentation. This is stage where the project team evaluates the outcome of the project against the project objectives and reviews benefits achieved. Lessons learned are shared with those who might benefit from them (UK Government, 2010). The lessons learnt range from why certain corrective actions were taken, unforeseen risks occurred, and what mistakes were made that could have been avoided. The project closeout may involve activities such as closeout meetings, resource reallocation reports, compliance documents, supplier notifications, final payments and collection of receivables (Mantel, Meredith, Scott, & Sutton, 2006).

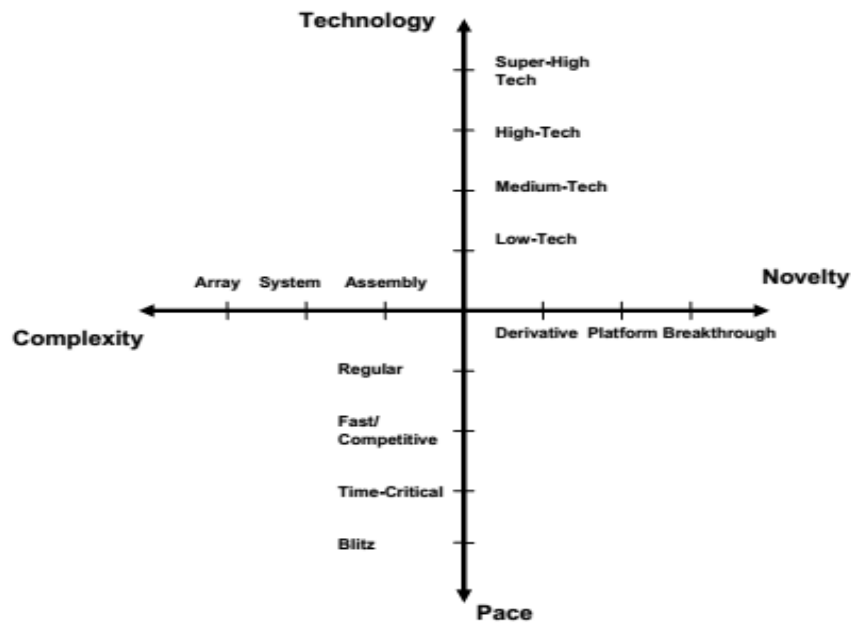
Project termination can lead adversely damage an organization's reputation, market devaluation, low employee productivity and possible litigations for breach of contractual obligations (Hurley & Jimmerson, 2009; Belassi & Tukel, 1996). Terminated projects may not only lead to direct loss of revenue, but can also attract contractual penalties for late delays, loss of market share and strategic advantage. However, in certain circumstances, termination of projects due to technology changes or changes in the competitive environment may cut down losses or ensure survival of an organization.

2.7 Theoretical Framework

Project management practitioners can adopt different types of project methodologies to run projects. The choice enables projects managers to predict the expected benefits and risks. Indeed, different projects may require different approaches depending on the objectives and the project environment. This study will be anchored on the NTCP model.

2.7.1 The Novelty, Technology, Complexity and Pace (NTCP) “Diamond” Framework

The NTCP model advocates for a style of project management based on attributes derived from four dimensions into which complex projects can be classified. Shenhar and Dvir (2007) proposed the categorization of projects based on their initial characteristics according to the four dimensions comprised in the NTCP acronym. The researchers focused on the use of different managerial styles to different types of projects. As illustrated in the figure below, applying the right managerial approach to projects based on their classification is expected to raise the success rate of the project.



The NTCP Framework

Figure 1: The four dimensions of the NTCP framework

The diamond typology based on novelty, technology, complexity and pace assesses the task, the product and the environment. As discussed in the next four paragraphs, the typology suggests the optimal project management approach that would fit a selected project (Sausser, Reilly, & Shenhar, 2009)

The novelty dimension is defined as an aspect of how new the product is to the customer and the market. It has an impact on specifications and market related activities. (Sausser *et al.*, 2009; Orhof *et al.*, 2013). The novelty can be viewed in three perspectives: Derivative, as an improvement to an existing product or service; Platform, as a new generation of an existing product line or, Breakthrough, a completely new product or service into the market.

The technological dimension is associated with using new versus mature technology in product or process produced. In this classification, the projects are classified as A, B, C or D where A is associated with least uncertainty for using familiar technology while D is a class of super high uncertainty projects. Class D projects have the highest level of uncertainty because they require development of new technologies that do not exist at the time of project initiation (Shenhar, 2001).

The complexity dimension is labelled system scope and categorised into three levels. The levels are derived from the belief in the existence of hierarchies in products, services or systems that imply various managerial approaches. The three levels are: Scope 1- An assembly project that deals with a single component or a complete assembly of modules or components defined as a single unit; Scope 2- A system project that is composed of multi-functional subsystems that address an operational mission; Scope 3- An array project that consists of distributed systems that function together to realize a common purpose (Shenhar, 2001).

The pace dimension focuses on the project urgency at the time of initiation and the available timeframe for its completion (Orhof *et al*, 2013). This dimension affects the management activities and the team autonomy. In pace, four approaches are distinct: Regular, where delays are not critical; Fast competitive, where time to market (TTM) is an important business consideration; Time-critical, where completion time is crucial for success-window of opportunity; Blitz, for crisis project where immediate solutions are required (Sausser, Reilly, & Shenhar, 2009).

2.8 Conceptual Framework

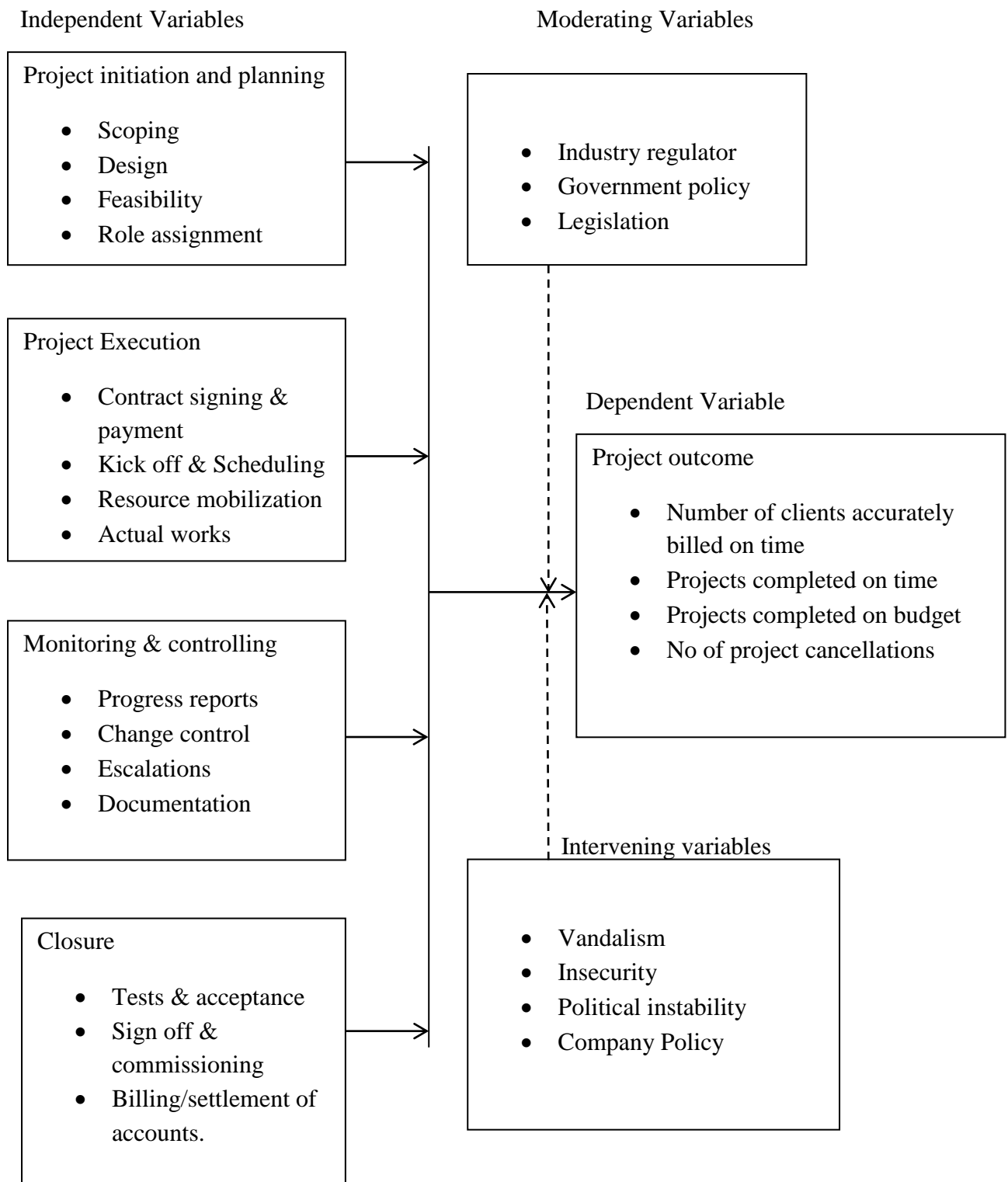


Figure 2: Conceptual framework

The conceptual framework identified four critical processes that influence the project progress and outcomes throughout the lifecycle. The four processes constitute the

independent variables. The dependent variable is project outcome which is determined by planning, initiation and contract terms signed; effectiveness and efficiency of execution; control and monitoring as well final acceptance and sign off. Successful closure signifies meeting customer expectation, hence settlement of accounts and commencement of billing for services rendered. This results in revenue for the organization, higher customer retention, low churn, repeat business and minimum disputes. In this model, moderating variables such as regulator policy may impact project cost and schedule through new fees and levies, compliance requirements or lengthy approvals. This framework also factors in the variables such as insecurity and vandalism that may directly affect timely completion of projects or increase the cost of delivery. In the same way, damage to infrastructure by vandals, road construction, lightning strikes or acts of terrorism can adversely affect project success or even lead to cancellation.

2.9 Knowledge Gap

A number of local researchers have conducted studies on Telkom Kenya on various topics. In her study, Cheruiyot(2006) established that Telkom Kenya needed to adopt the use of eCRM in all departments to help improve efficiency in customer service delivery. Chelule (2009) investigated Telkom Kenya's strategic response to global competitiveness, Muyia (2012) examined change management and organizational transformation while Kimtai (2010) dwelled on challenges faced in the implementation of turn around strategies. These and many other studies have focused on actions undertaken by Telkom Kenya. However, the impact of project management processes on project success has not been explored. Successful project completion impacts the performance of Telkom Kenya. Therefore, study sought to investigate the influence of project management processes on selected public sector infrastructure projects in the Business Market Department, Telkom Kenya.

2.10 Summary of Chapter

The chapter was organized into eight sections. The first section introduced the topic. Section two discussed project management cycle and processes. Section three, four, five and six explored the processes of initiation and planning; execution; monitoring and controlling; and closure respectively and their influence on project success. Section seven looked into project management approaches; definitions and dimensions of project success. Section eight closed the chapter by specifically examining the project process aspects and how they manifested in the project success.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research's methodology that was employed in research design, target population, sampling technique, instruments of data collection and data analysis. The study focused on establishing the influence of project management processes on project outcome on selected infrastructure projects in Telkom Kenya.

3.2 Research Design

The study adopted a descriptive survey design. According to Zikmund (2003), surveys provide a fast, inexpensive, efficient and accurate way of investigating a population. Orodho (2003) argues that descriptive survey research designs are used in preliminary and exploratory studies to allow researchers to gather and summarize information, present and interpret data for clarification purposes. Descriptive research determines and reports things as they are, therefore establishing the current status of the population under study (Mugenda & Mugenda, 2003). By studying a population sample, a descriptive design provides qualitative descriptions of trends, perceptions and attitudes of the population

3.3 Target population

The target population comprised of Telkom staff numbering 1810, out of which 968 were stationed in Nairobi. The study was focused on Nairobi region staff due to the proximity to the researcher, time available for research and budgetary constraints. The Nairobi region staff constituted the accessible population with a distribution as tabulated below.

Table 3.1: Target Population

Department	Population
Quality and Audit	10
Customer Care	80
IT & N	328
Finance	82
Procurement	7
Business Market-Project Management; Sales & Marketing	106
Total	613

3.4 Sampling Size and Sampling Procedure

Sampling is the process of selecting units from a population of interest (Trochim, 2005). This study applied stratified random sampling, by grouping the population into homogenous subgroups (Gakuu, 2013). A sampling frame was used to determine the study's population of interest. The sampling frame defines the set of elements from which a researcher can select a sample of the target population (Michae, Alan, & Tim, 2004). The sampling frame consisted of Business Market department and 6 other key functional support departments. Stratified sampling provides greater precision over simple random sampling. The precision allows a smaller sample to be used, therefore may result in lower costs of data collection.

3.4.1 Sample Size

Stratified sampling offers better precision compared to simple random sampling when the strata are homogenous internally but varies from one to another. According to Kothari (2004), a method of proportional allocation was adopted in which samples sizes from each strata was kept proportional to the sizes of the strata. The selection is illustrated below:

i = Stratum

P_i = The proportion of the population included in the stratum i

n = Total sample size

N = population size

Then, the total number of selected elements from stratum i is $n \cdot P_i$

The sample size was determined by:

$$n = \frac{z^2 pqN}{e^2(N-1) + z^2 pq} \quad (\text{Kothari, 2004})$$

Where e is the error for this study, taken as 10%; p is the population reliability, taken as $p=0.5$; $z_{\alpha/2}$ is the normal reduced variable at 0.05 level of significance and $z = 1.96$.

The sample size is therefore:

$$n = \frac{1.96^2(0.5)(0.5)(613)}{0.1^2(613-1) + 1.96^2(0.5)(0.5)} = 83$$

Table 3.2: Sample Size

Department	Population	Sample Proportion	Sample Size
Quality and Audit	10	0.02	2
Customer Care	80	0.13	11
IT & N	328	0.53	44
Finance	82	0.13	11
Procurement	7	0.01	1
Business Market	106	0.17	14
Total	613	1.0	83

3.4.2 Sampling Procedure

The population studied was categorized into strata representing all departments that provide functional support to Business Market department. Therefore the departments constituted the sampling frame. Simple random sampling was applied to the homogenous strata in order to obtain representative samples.

3.5 Research Instruments

A questionnaire was deemed an appropriate instrument for data collection. Kirakowski (2000) defines a questionnaire as “method of for the elicitation, and recording and collecting information”. The questionnaires featured close ended questions that provided quantitative data for statistical analysis. On the other hand, open ended questions posed generated qualitative data for content analysis. The questionnaire design followed the objectives of the research, with the first part capturing the demographic characteristics of the respondents.

Owen (2002) recommends use of questionnaires for its potential to reaching out to a large number of respondents within a short time; ability to accord respondents adequate time to respond; offers a sense of privacy and confidentiality to the respondent. The researcher therefore opted for this instrument as a quick and cost effective way to collect data.

3.5.1 Pilot Study

The researcher carried out a pilot test to find out how well the questionnaire would work in practice. The study administered 10 questionnaires to respondents out of the target population. The researcher was able to identify and correct problems with the length of the

questions, wording, structure, coding and instructions. The refined questionnaire was then tested for validity and reliability.

3.5.2 Validity of the Research Instruments

This is the criterion that indicates the extent to which an instrument will achieve intended measurement objectives (Kothari, 2004). Thus, validity refers to the appropriateness, meaningfulness and usefulness of inferences made by researchers (Gakuu, 2013). It depends on the amount of evidence and type of evidence researchers use to support interpretations made. Mugenda and Mugenda (2003) asserted that validity defines the accuracy and meaningfulness of inferences drawn from study findings. If the instrument is valid, the results obtained from the research will actually represent the study variables. The validity of the instrument was determined with the help of the supervisor.

3.5.2 Reliability of the Research Instrument

This is a test of sound measurement that determines the consistency of results of an instrument (Kothari, 2004). It is the ability of research instrument to yield consistent results or data after repeated trials (Ngechu, 2004). By using the split-half method (Gakuu, 2013), the researcher scored two halves of the test separately of 10 selected respondents from sample. SPSS was used to compute the reliability coefficients. The Cronbach's alpha obtained was 0.745 and the Spearman-Brown's coefficient was 0.802, indicating high internal consistency of the questionnaire items. A measure of 0.7 or higher is considered acceptable.

3.6 Data Collection Procedure

This section outlines the data collection procedures used. In the study, primary data was collected through anonymously filled questionnaire distributed to respondents. Secondary data was obtained from internal accounting and billing records, information systems, sales records, project reports and performance reports. Prior to commencing data collection; the researcher obtained a letter of introduction from the university. Permission was sought from the functional unit managers in Telkom before data was collected to reassure their subordinates to that the exercise was academic in nature. This facilitated data to be collected within 3 days.

3.7 Data Analysis Technique

The study applied both qualitative and quantitative approaches for data analysis. The questionnaire yielded quantitative data that was processed using IBM's Statistical Package for Social Sciences (SPSS) v20. Before manipulation, the data was edited to ensure consistency. The data was coded to enable ease of data entry and analysis. The descriptive statistics were presented in the form of frequency distribution tables and percentages. The study will also seek to establish a correlation between the variables using Pearson's Moment Product Correlation using the formula:

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Where $-1 \leq r \leq 1$

N are a selected number of respondents in a given department;

Y corresponds to a select variable such as planning and initiation

X corresponds to a second variable such as project execution

The study also used multiple regressions to predict project outcome (dependent variable) when the project management processes (independent variables) changed. The model below was used:

$$Y = \varphi_0 + \varphi_1 X_1 + \varphi_2 X_2 + \varphi_3 X_3 + \varphi_4 X_4 + \epsilon$$

Where;

Y is the project outcome

φ_0 is the constant or the intercept of the regression line

$\varphi_1, \varphi_2, \varphi_3, \varphi_4$ are regression coefficients for predictor variables.

X_1 represents project planning and initiation,

X_2 represents project execution,

X_3 represents project monitoring and control,

X_4 represents project closure.

The open ended questions will generate qualitative data will be narrated to support quantitative data presentation.

3.8 Ethical Issues

Two significant ethical issues that were considered in the research process included consent and confidentiality. The study relayed all important details of the study, including its aim and purpose. By explaining these details, the participants understood their role in the completion of the research. The respondents were advised that the study was voluntary. The confidentiality of the participants was guaranteed by not disclosing their names or personal information in the research. Only relevant details that helped in answering the research questions were included.

The study adhered by the University of Nairobi plagiarism policy which defines plagiarism as “ the action or practice of taking someone else work or idea and passing it off as one’s” (University of Nairobi, 2013). Utmost care was taken to appropriately acknowledge works borrowed from other scholars and various sources of data through referencing.

3.9 Operational Definition of Variables

Table 3.3: Operational Definition of Variables

Objectives	Independent variables	Indicators	Measurement scales	Data analysis method	Tools of analysis	Specific tool
Influence of project initiation and planning process on project outcome	Project initiation and planning	-No of pre-sales meetings for feasibility -Business cases evaluated and approved -complete project plans submitted & approve -Number of signed contracts	-Nominal -Interval	Descriptive and explanatory	Central tendency, dispersion and association/relationship	Mean, standard deviation, correlation and regression analysis
To examine the influence of project execution process on project success	Project execution	-No of project kick offs -Schedule of activities commenced on time -projects adequately allocated resources -number of projects prioritized	-Nominal -Interval	Descriptive and explanatory	Central tendency, dispersion and association/relationship	Mean, standard deviation, correlation and regression analysis
To investigate the influence of monitoring and controlling process on project success	Monitoring and controlling	-number of progress reports -number of performance reviews conducted -change requests submitted -Documented changes	-Nominal -Interval	Descriptive and explanatory	Central tendency, dispersion and association/relationship	Mean, standard deviation, correlation and regression analysis
To establish the influence of project closure processes on project success	Project closure	-Projects signed off and commissioned -No of vendor and contractor evaluations -Project reviews to determine compliance -No of clients interviewed on satisfaction	-Nominal -Interval	Descriptive and explanatory	Central tendency, dispersion and association/relationship	Mean, standard deviation, correlation and regression analysis
	Dependent Variable					
To determine the influence of the project processes on project outcome	Project outcome	-No of projects completed on time -No of projects completed on budget -No of projects accepted by clients -No of projects accepted by client & billed	-Nominal -Interval	Descriptive and explanatory	Central tendency, dispersion and association/relationship	Mean, standard deviation, correlation and regression analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents analysis, findings and discussion of the study.

4.2 Response Rate

The study targeted 83 respondents from Telkom Kenya Headquarters, Nairobi. The respondents are involved at various stages of project management processes in the Business Market Department. Of the 83 questionnaires distributed, 70 were filled and returned. This represents a response rate of 84% which is above the 50% statistical significance, according to Mugenda and Mugenda (2003).

Table 4.1: Response Rate

Responses	Frequency	Percentage
Information Technology & Networks (IT&N)	22	31
Customer Care	3	4
Procurement	2	3
Finance & Accounts	7	10
Project Management	7	10
Sales & Marketing	27	39
Quality & Audit	2	3
Total non-responses	13	16
Total	83	100

4.3 Demographic Information of the Respondents

This section presents the demography of the respondents.

4.3.1: Gender of the Respondents

This section presents gender information of the respondents. The results are tabulated in table 4.2.

Table 4.2: Gender Response Rate

Responses	Frequency	Percentage
Female	31	44
Male	39	56
Total	70	100

The study involved both male and female respondents. From Table 4.2, the majority of the respondents were male at 56%, while 44% were female.

4.3.2: Age of the Respondents

The study sought to establish the age of the respondents. Table 4.3 shows the responses.

Table 4.3: Age of the Respondents

Responses	Frequency	Percentage
Below 24 years	5	7
25-29 years	17	24
30-34 years	24	35
35-39 years	7	10
40-44 years	12	17
Above 44 years	5	7
Total	70	100

From the table above, 7% of the respondents were aged below 24 years; 24% of the respondents were between 25-29 years old; 35% of the respondents were in the 30-34 year age category; 10% of the respondents were in the 35-39 year bracket; 17% of the respondents were in the age bracket of 40-44 years while 7% were above 44 years. The age distribution of the respondents revealed different levels of job experience in their respective functional areas.

4.3.3: Level of Education

The table below indicates the education levels attained by respondents.

Table 4.4: Level of Education

Responses	Frequency	Percentage
Certificate	1	1
Diploma	8	11
Undergraduate	50	71
Postgraduate	11	16
Total	70	100

The responses indicated that 84% of the respondents were university degree holders, with 18% having postgraduate qualifications; 13% had attained diploma level qualifications while one respondent was a certificate holder.

4.3.4: Years of Experience at Telkom Kenya

The results in table 4.5 are tenures of the respondents. The study only focused on respondents on permanent employment.

Table 4.5: Years of Service at Telkom Kenya

Responses	Frequency	Percentage
Less than 1 year	1	1
1-3 years	25	36
4-7 years	26	37
8-11 years	4	6
More than 11 years	14	20
Total	70	100

The findings indicated that 36% of the respondents had worked for Telkom for between 1 and 3 years; 37% had worked for between 4 to 7 years; while 20% had worked for Telkom for over 11 years. The findings indicate a population with an even spread of age and experience.

4.3.5: Professional Orientation

The respondents were drawn from key departments that are involved in projects. The key functional departments are listed in table 4.6.

Table 4.6: Professional Orientation

Responses	Frequency	Percentage
Information Technology & Networks (IT&N)	22	31
Customer Care	3	4
Procurement	2	3
Finance & Accounts	7	10
Project Management	7	10
Sales & Marketing	27	39
Quality & Audit	2	3
Total	70	100

The stratified sampling yielded 31% of the responses from IT&N department; 39% respondents were from the Sales and Marketing department; Finance and Accounts as well as Project Management each had 10% of the total respondents; Customer Care department had 4% respondents while Quality and Audit and Procurement departments had 3% each. The Business market department had 49% of the respondents.

4.3.6: Project Contract Period

The respondents were asked to estimate the average contract duration of the selected infrastructure projects they have worked on. Their responses were tabulated as below.

Table 4.7: Project Contract Period

Responses	Percentage
1 year	20
2 years	53
3 years	27
Total	100

The findings indicated that 20% of the projects were signed on 1-year contracts, 53% of projects were on 2-year contracts; while 3-year contracts represented 27% of projects signed. The findings indicate that 80% of projects have contracts over 2 years in order to minimize service disruptions and costs associated with procurements processes.

4.3.7: Project Total Order Value (TOV)

The respondents also indicated the average contract value in Kenya shillings.

Table 4.8: Project Total Order Value

Responses	Percentage
< KES 1million	14
KES 1million-KES 10 million	52
>KES 10 million	34
Total	100

The study findings established that the average contractual value of 14% of the individual projects undertaken were less than KES 1 million; 52% of projects were between KES 1 million and KES 10 million while 34% of the projects were each valued above KES 10 million. The higher value projects indicate higher ROI because clients continue to pay for services long after the break even period for 2-year and 3-year contracts.

4.3.8: Public Sector Segmentation

Public sector projects are mainly divided into two categories. The respondents were asked to indicate their allocation of project segments. The findings were tabulated in table 4.9

Table 4.9: Public Sector Segmentation

Responses	Percentage
Government agencies	41
Parastatals	59
Total	100

The study findings established that 41% of the projects fall within the government agencies, authorities. On the other hand, 59% of the projects represented autonomous and semi-autonomous public companies. The results therefore indicate that Telkom handles projects across the public sector.

4.4 Influence of Project Planning and Initiation and Project Outcome

The study sought to establish the extent to which respondents agreed with the statements below on project planning and initiation on project outcome. The following statements were

presented to respondents in order to gauge their extent of agreement. The results are tabulated in 4.10.

Table 4.10: Project Planning and Initiation on Project Outcome

Statement	Mean	Std Dev.
Pre-sales meeting with client is held to scope client specifications	1.57	0.604
Project analysis is done to determine commercial and technical terms	1.57	0.606
Business case is determined and technical feasibility evaluated	1.49	0.558
Project plan outlines all projects stages up to closure	1.99	1.014
Deliverables and milestones are reasonable and attainable	2.10	0.843
Required project resources are identified and committed	1.99	0.807
A contract outlining responsibilities of all key stakeholders is signed	2.06	0.931
Down payment is made before a project commences	2.23	1.038
Individual responsibilities and performance standards are well known	2.33	1.053
Standards and goals for measuring performance are clear and attainable	2.44	1.072
Testing and acceptance parameters are defined in advance	2.70	1.298

The respondents agreed with the statements with means 1.57 to 2.44, on the first ten statements. However, the findings indicate respondents were not uniformly in agreement, as deduced from the standard deviations. The respondents particularly strongly agreed that client specifications are well scoped, project analysis is done and feasibility evaluated with means of 1.57, 1.57 and 1.49. The variance from the means was smallest at 0.604, 0.606 and 0.558 respectively. On project plan defining responsibilities, expected performance levels and testing and acceptance parameters; the respondents moderately agreed with means of 2.33, 2.44 and 2.70 respectively. The corresponding standard deviations were 1.053, 1.072 and 1.298. While the respondents agree that there exists a structured project selection, design and evaluation, they have varied opinion on the planning of performance evaluation.

On whether planning and initiation influences project outcome, 67% per cent responded affirmatively, to very great extent; 22% indicated it influences to a great extent while 10% said the influence is 10%. All respondents thus agreed that planning and initiation certainly influences project outcome. Table 4.11 below presents the findings.

Table 4.11: Project Planning and Initiation on Project Outcome

Responses	Frequency	Percentage
Very great extent	47	67
Great extent	16	22
Moderate extent	7	10
Total	70	100

4.5 Influence of Project Execution and Project Outcome

The study sought to establish the influence of project execution on project outcome. The respondents were asked to indicate their level of agreement with statements related to project executions. The responses from strongly agree to strongly disagree were tabulated in 4.12.

Table 4.12: Project Execution on Project Outcome

Statement	Mean	Std Dev.
Activities are carried out in accordance with an execution plan	2.07	0.922
Responsibility for each task is clearly defined	1.91	0.794
Supervision roles and reporting structures are well defined	2.19	0.952
Project progress is monitored and compared with the project plan	2.50	1.087
Project activities are monitored to ensure compliance	2.36	1.077
Appropriate tools required for project tasks are availed	2.39	1.101
Regular meetings are held to review project progress	2.34	1.141
Communication methods and escalations are adequate	2.16	1.163
Project changes follow formulated procedures for review and approval	2.60	1.267

From the responses, the respondents agreed that activities are carried out in accordance with project execution plan; responsibility for tasks was clearly defined; and roles are well defined with means of 2.07, 1.91 and 2.19 respectively; with the corresponding standard deviations computed as 0.922, 0.794 and 0.952. With the statements that project progress was monitored and compared with project plan; activities are monitored to ensure compliance; and that appropriate tools are provided, they agreed with means of 2.50, 2.36 and 2.39 respectively; with the corresponding standard deviations computed as 1.087, 1.077 and 1.101. The findings also established that staff agreed that regular meetings are held to review project progress; communication methods are adequate; and changes follow formulated procedures; with

means 2.34, 2.16 and 2.60. The corresponding standard deviations as listed were 1.141, 1.163 and 1.267. From standard deviations, the study observed a significant variation about the mean on the level of agreement.

Table 4.13: Project Execution on Project Outcome

Responses	Frequency	Percentage
Very great extent	31	44
Great extent	27	39
Moderate extent	10	14
Little extent	2	3
Total	70	100

Table 4.13 tabulates responses on the extent to which execution influences project outcome, according to the staff. The response was: 44% to very great extent, 39% to great extent, 14% to moderate extent and 3% to little extent. 67% of respondents agreed that planning and initiation influences project outcome as compared to 44% who agreed that execution influences project outcome.

4.6 Influence of Project Monitoring and Controlling on Project Outcome

Respondents were asked to indicate their level of agreement on statements that characterize project monitoring and control and its influence on project outcome. The following findings were recorded.

Table 4.14: Project Monitoring and Controlling on Project Outcome

Statement	Mean	Std Dev.
Effective project monitoring processes exist	2.33	1.032
Project monitoring tools are effective	2.51	1.139
Individual assessment on performance is regularly conducted	2.50	1.213
Progress is monitored and compared with the project specifications	2.16	1.044
Status reports are regular and stakeholders are informed	2.23	1.169
Change control procedures are well defined at the start	2.39	1.219
Authority and responsibility for change requests is defined in advance	2.38	1.279
Changes in scope include risk and impact analysis	2.29	1.092
Project changes follow formulated procedures for review and approval	2.36	1.204
Decisions to approve or reject changes are well documented	2.80	1.368

The respondents agreed with all the statements with means between 2.16 and 2.80. There were significant standard deviations ranging from 1.032 to 1.368. It can be deduced that the levels of agreement were spread away from the recorded means.

The research also asked respondents to propose changes that would improve monitoring and control measures. Their responses were grouped in four thematic categories. Table 4.15 presents the grouped responses.

Table 4.15: Proposed Changes to Improve Monitoring and Control

Responses	Frequency	Percentage
Introduce effective monitoring tools	12	17
Enforce existing tools	13	18
Training of staff on monitoring tools	3	4
Effective communication	11	16
Reporting and documentation	13	18
Other (No answer, None)	17	25
Total	70	100

From the findings, it can be observed 17% of the respondents suggest the introduction of new and effective tools; 18% prefer enforcement of existing tools with a similar proportion suggesting changes to the reporting and documentation procedure; 16% were of the opinion that more effective communication was required. Only 4% deemed training on monitoring tools as necessary. Thus 75% of the target population believe some degree of change is required. However, 25% of the respondents either indicated no change was required or declined to reply.

4.7 Influence of Project Closure on Project Outcome

The study asked the respondents to indicate their level of agreement with statements in Table 4.16. The responses were coded strongly agree to strongly disagree.

Table 4.16: Project Closure on Project Outcome

Statement	Mean	Std Dev.
Project closure is guided using a pre-determined procedure	1.71	0.859
Responsibility for sign off is defined and assigned	1.63	0.802
Vendors and contractors are evaluated on their performance	2.74	1.348
Customers sign acceptance forms and issue certificate of completion	1.91	0.944
Customers are informed on warranty, support and maintenance	2.56	1.235
Review to evaluate actual costs against budget	2.81	1.254
Team performance is reviewed	2.91	1.260
Identification of changes to improve delivery of future projects	2.77	1.374
Clients are interviewed on satisfaction with overall project delivery	2.96	1.469
Final report on project analysis, recommendations and lessons learnt	2.91	1.558
Number of projects completed on time	2.27	1.123
Number of projects completed on budget	2.06	0.983
Number of projects tested and signed off by client	1.77	0.819
Projects successfully closed and billed	1.55	0.744

The respondents agreed that project closure is guided using a pre-determined procedure with a mean of 1.71 and a standard deviation of 0.859. They also strongly agreed that responsibility for sign off is defined and assigned with a mean of 1.63 and standard deviation of 0.802. On statements regarding vendor evaluation, customer support, cost evaluation, team performance, and changes to improve delivery, customer interview and final project analysis, they agreed with means 2.56, 2.81, 2.91, 2.77, 2.96 and 2.91 respectively. The corresponding standard deviations were 1.235, 1.254, 1.260, 1.374, 1.469 and 1.558 suggesting a notable variance in the degree of agreement. On the indicators of desired project outcome, the respondents agreed. First, on timely completion of projects, they agreed with a mean of 2.27 with a standard deviation of 1.123. They also agreed that completion of projects on time with a mean of 2.06 with a standard deviation of 0.983. The study established that the respondents strongly agreed with the indicator: project tested and signed off a client with a mean of 1.77 and a standard deviation of 0.819. They also strongly agreed with the indicator: project successfully closed and billed with a mean of 1.55 and the lowest standard deviation of 0.744.

4.8 Correlation Analysis

In the investigating the influence of project management processes on project outcome, Pearson's product moment of correlation was used. The study assessed the independent variables' influence on project outcome at 99% level of confidence. The Pearson's correlation is given as : $-1 < r < +1$; where 0 to 0.29 is considered weak positive correlation; 0.3 to 0.49 is moderately positive correlation; and 0.5 to 1 corresponds to strong positive correlation. Conversely, 0 to -0.29 is considered weak negative correlation; -0.3 to -0.49 is moderately negative correlation; and -0.5 to -1 corresponds to strong negative correlation.

Table 4.17: Correlation Analysis

		Planning	Execution	Monitoring	Closure	Outcome
Planning	Pearson Correlation	1	.810**	.672**	.514**	.453**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	70	70	70	70	70
Execution	Pearson Correlation	.810**	1	.817**	.619**	.534**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	70	70	70	70	70
Monitoring	Pearson Correlation	.672**	.817**	1	.704**	.607**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	70	70	70	70	70
Closure	Pearson Correlation	.514**	.619**	.704**	1	.732**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	70	70	70	70	70
Outcome	Pearson Correlation	.453**	.534**	.607**	.732**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	70	70	70	70	70

** . Correlation is significant at the 0.01 level (2-tailed).

The results imply an existence of moderate and positive correlation between project planning and initiation and project outcome with a magnitude of 0.453. The results also indicate strong positive correlation of magnitude 0.534, 0.607, 0.732 between project execution; monitoring and control and closure respectively. The observation is further reinforced by the predictor variables' p-values of 0.000, signalling statistically significant positive correlation, at an alpha of 0.01.

4.9 Regression Analysis

Multiple regression analysis was carried out to test the influence among predictor variables.

The results are presented in tables 4.18, 4.19 and 4.20.

Table 4.18: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744 ^a	.553	.525	.346
a. Predictors: (Constant), Closure, Planning, Monitoring, Execution				

From the results in Table 4.18, the study presents R-squared. This is a statistical measure of the closeness of the observed data to the fitted regression line. It defines the percentage of the dependent variable variation as explained by a given model. Hence, the model indicates that 55% of the changes in project outcome can be attributed to the predictor variables. The implication is that 45% per cent of the changes in project outcome can be attributed to other factors.

Table 4.19: ANOVA Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.608	4	2.402	20.090	.000 ^b
	Residual	7.772	65	.120		
	Total	17.379	69			
a. Dependent Variable: Outcome						
b. Predictors: (Constant), Closure, Planning, Monitoring, Execution						

The probability of 0.000 indicates that the model is significant in predicting the influence of the project management processes on project outcome. The critical F-value is 3.622 at 99% level of confidence. Thus, with F calculated ($=20.090$) > F critical ($=3.622$); the model generally statistically significant.

Table 4.20: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.798	.167		4.784	.000
	Planning	.029	.125	.032	.229	.820
	Execution	.007	.120	.010	.055	.956
	Monitoring	.091	.093	.155	.970	.336
	Closure	.375	.073	.599	5.101	.000
a. Dependent Variable: Outcome						

The regression model is derived from Table 4.20 as:

$$Y = 0.798 + 0.029X_1 + 0.007X_2 + 0.091X_3 + 0.375X_4$$

The regression model provided statistical control through which the study established the influence of each predictor variable. Holding all variables at zero will result in a positive project outcome equal to 0.798. In a similar way, reducing all other independent variables to zero, a unit change in planning will result in 0.029 increments in positive project outcome. The findings indicate 0.007 increments in project outcome when all other independent variables are reduced to zero. Additionally, a unit increase in monitoring and control while holding the rest of independent variables constant would lead to a 0.91 increments in favourable project outcome. Finally, a unit change in closure will yield 0.375 increments in project outcome when all other predictor variables are held constant at zero. The results also show that the coefficients for each variable are non-zero. This therefore means that all the independent variables influence the response variable. However, since the p-values for planning, execution and monitoring are greater than 0.05, these predictors are not very significant. On the other hand, closure is a significant predictor of project outcome with a p-value of less than 0.05.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions on key data findings, conclusions drawn and recommendations. These discussions, conclusions and recommendations were focused on the the four objectives of the study. These were: establishing the influence of project planning and initiation; execution; monitoring and controlling; and closure on the outcome of selected public sector projects at Telkom Kenya. The study was carried out at Telkom Kenya headquarters within departments that oversaw key government projects.

5.2 Summary of Findings

In this section, summary of findings follow the order of research objectives and data as presented in chapter four. The purpose of the study is to assess the influence of project management processes on project outcome in Telkom Kenya Limited.

5.2.1 The Influence of Project Planning and Initiation on Project Outcome.

The study established that pre-sales meetings are held with clients to scope client needs and analysis is done to determine commercial and technical specifications as well as feasibility. The standard deviations of 0.604, 0.606 and 0.558 were the lowest of all the statements. The majority of the respondents agreed that project stages are outlined through closure, though with an observable wide variance of 1.014 about the mean. The respondents indicated that deliverables and milestones are reasonable and attainable. On whether resources are identified and committed, the respondents agreed. The study also showed that contracts outlining responsibilities for each stakeholder are signed and down payment paid. The study findings also show that performance standards, goals, are well known and attainable. The respondents are equally in agreement on testing and acceptance parameters are usually known in advance. There was a notable variation in the level of agreement with significant standard deviation of 1.053, 1.072 and 1.298. When asked to indicate the extent to which planning and initiation influenced project outcome; 67% answered to very great extent, 22% answered to great extent, while 10% indicated to a moderate extent.

5.2.2 The Influence of Execution on Project Outcome.

When respondents were asked about the extent to which execution influences project outcome, 44% said to very great extent; 39% said to great extent; 14% to moderate extent and

3% to little extent. Therefore, a higher proportion of respondents indicated that project planning and initiation has greater influence on project outcome than execution. With respect to the influence of project execution on project outcome, the respondents indicated that project activities are carried out in accordance to project plans. They agreed that responsibilities for each tasks, supervision roles and reporting structures are well defined. The findings also showed that project progress is monitored and compared with the project plan and to ensure full compliance. The respondents agreed that required tools are availed for project activities. The results also indicate that progress review meetings are held to address emerging issues. On communications, the findings show that channels and escalation matrices exists and are effective. In regard to project changes, the respondents agreed that reviews and approvals follow formulated procedures.

5.2.3 The Influence of Monitoring and Control on Project Outcome.

The study sought to gauge the existence of effective project monitoring processes to which responded affirmatively. Asked whether individual assessment on performance is regularly conducted, they generally agreed with a varied level. On whether progress is review and status reports are shared with stakeholders, the respondents agreed. The findings also indicated that change control procedures, authority and responsibility are outlined well in advance. The results of the study also established that risk and impact analysis is of changes is conducted; that it is procedural and all decisions are well documented. The study also asked the respondents to propose changes to the monitoring and control processes. Their recommendations were broadly categorised into five. First, 17% suggested introduction of more effective tools; 18% were of the opinion that the existing tools were effective; 4% suggested training of staff on the effective use of monitoring tools; 16% asserted that effective communication with all stakeholders was key; 18% recommended improving reporting and documentation of project activities

5.2.4 The Influence of Closure on Project Outcome.

On the statement that closure is guided using pre-determined procedures, majority of the respondents agreed. The results also indicated that responsibility for sign off is defined and assigned. The respondents did not fully agree on whether vendors and contractors were vetted and evaluated on performance. However, the respondents strongly agreed that customers sign acceptance forms; issue certificate of completion and are informed on the warranty, support and maintenance. On whether projects are reviewed to check actual costs versus costs, the respondents disagreed. When asked whether team performance is reviewed, the respondents

disagreed. The findings also show respondents moderately agreed that required changes are identified to improve future delivery of projects. The respondents disagreed with the statement that clients are interviewed on their overall satisfaction with project delivery. The findings also disagreed with the statement that final project analysis and recommendations on lessons learnt are conducted. The study sought to gauge the criteria used to determine project outcome at closure. The respondents moderately agreed that project completion on time and on budget is an acceptable indicator. This was evident from the computed means of 2.27 and 2.06 with corresponding standard deviations of 1.123 and 0.983. The findings show that respondents strongly agreed that projects signed off and accepted by clients as well as those closed successfully and billed are indicators of positive project outcome. This is supported by resultant means of 1.77 and 1.55 respectively. The corresponding spread about the means was found to be comparatively lower at 0.819 and 0.744.

5.3 Discussion Key of Findings

This section of the report discusses in detail the findings and compares them with literature reviewed in chapter two.

5.3.1 The Influence of Planning and Initiation on Project Outcome.

According to Kerzner (2003), project planning involves a pre-determining a specific course of action in a predictive environment. The study revealed that pre-sales meetings are held with clients to scope client needs and analysis is done to determine commercial and technical specifications as well as feasibility. Project planning defines all stages of the project lifecycle, as outlined by the PMI (2013). Indeed, the majority of the respondents agreed that project stages are outlined through closure. The respondents indicated that deliverables and milestones are reasonable and attainable. On whether resources are identified and committed, the respondents agreed. The study also showed that contracts outlining responsibilities for each stakeholder are signed and down payment paid. The study findings also show that performance standards, goals, are well known and attainable. Rigorously prepared plans are foundations for project success (Divr & Lechler, 2004). It is for the same purpose that France Telecom have embarked on strategic plan to improve customer satisfaction and operational efficiency (France Telecom, 2015). The results of this study thus show that formal planning has a direct impact on project outcome through the clear definition of all stages.

5.3.2 The Influence of Execution on Project Outcome.

With respect to the influence of project execution on project outcome, the respondents indicated that project activities are carried out in accordance to project plans. The literature review agrees that these activities are iterative and continuous throughout the life of the project (Perminova *et al*, 2008). The findings showed that responsibilities for each tasks, supervision roles and reporting structures are well defined. The findings also showed that project progress is monitored and compared with the project plan and to ensure full compliance. One of the key dimensions of project success is efficiency during execution as postulated by (Shenhar; *et al*, 1997). The respondents agreed that required tools are availed for project activities in good time and progress review meetings are held to address emerging issues. The timely completion, on budget and on agreed quality should define the execution process as they greatly influence the outcome of a project. More precisely, desired project outcome is influenced by meeting the business objectives of an organization and the same time meeting customer expectation within the triple constraints (Bloch, *et al*, 2012; Gwaya, *et al*, 2014; Kamau, 2013). The results from the study to a large extent realized that the key activities during execution have impact project outcome.

5.3.4 The Influence of Monitoring and Control on Project Outcome.

The primary purpose of monitoring is to document the implementation process, facilitate decision making, and provide feedback for plan review and lessons learnt (ILX Group, 2015). Project control is project management function that comprises of monitoring, evaluating and comparing actual versus planned results. Asked whether individual assessment on performance is regularly conducted, the respondents generally agreed with a varied level. On whether progress is review and status reports are shared with stakeholders, the respondents agreed. Indeed, Monitoring and provision of feedback, dissemination of project progress reports, solving addressing arising issues and mitigation of emerging risks greatly impacts project outcome (Pinto & Slevin, 1988). The findings also indicated that change control procedures, authority and responsibility are outlined well in advance. The results of the study also established that risk and impact analysis is of changes is conducted; that it is procedural and all decisions are well documented. This is in agreement with Larson and Gray (2011) who asserted that project control involves tracking the project progress towards achieving the stated objectives within project constraints; identifies deviations; evaluates alternative courses of action and takes remedial actions.

5.3.4 The Influence of Closure on Project Outcome.

PRINCE 2 outlines a number of key project closure activities namely: checking the extent to which the deliverables have been met; confirming customer satisfaction; securing formal acceptance and sign off for deliverables; spelling out the support, maintenance and warranty issues where applicable; preparing a report with recommendations and documenting lessons learnt (ILX Group, 2015). These activities need to be well spelt out during project initiation. The study findings broadly agree that the PRINCE 2 practices have been incorporated in the organization's processes. The study sought to gauge the criteria used to determine project outcome at closure. The respondents moderately agreed that project completion on time and on budget is an acceptable indicator. This finding is consistent with the NTCP diamond model, especially on the pace dimension (Shenhar & Dvir, 2007). The findings show that respondents strongly agreed that projects signed off and accepted by clients as well as those closed successfully and billed are indicators of positive project outcome. Mantel *et al* (2006) indeed pointed the important closeout activities such as closeout meetings, resource reallocation reports, compliance documents, supplier notifications, final payments and collection of receivables form part of a successful project closure. Indeed, the respondents strongly agreed that customers did sign acceptance forms; issue certificate of completion and are informed on the warranty, support and maintenance. When clients sign project completion documents, it is an indication of project well executed and perceived value delivered (Steinfort & Walker, 2007). This is usually made possible if the criteria for measuring desired outcome is agreed upon in advance

5.4 Conclusions

On the basis of the study findings, the following conclusions were arrived at proposing the adoption and application of modern project management practices.

The results indicate significant relationship between project management processes and project outcome. The nature of public sector projects whose end user level of satisfaction is high requires effective and efficient project processes. Therefore, project initiation and planning influences project outcome.

From the study findings, it can be concluded that the execution process impacts the outcome of the project. It was established that execution activities are conducted according to the

project plan. Of the 4 stages, the findings indicated that execution had the least influence on the project outcome.

The research results showed that monitoring and control has a significant influence on project outcome according to the regression model. The respondents further suggested the strengthening the existing tools to achieve desired project outcome. On this basis, the study concludes that monitoring and control influences project outcome to a large extent.

Finally, the study concludes that the project closure process have the greatest influence on project outcome. The study established that perceived indicators of positive project indicators include project completion on time and within budget. The respondents strongly agreed that customer acceptance and satisfaction and settlement of final account is a strong measure of positive project outcome. The regression model indicated that the closure process had the largest magnitude.

5.5 Recommendations

This study makes the following recommendations.

1. The study recommends that effective project planning and initiation activities be applied to all public sector projects. This can be achieved by adopting and continuously enforcing project management best practices across the organization. This study also recommends that emphasis be given to implementation activities that will ensure plans are effectively executed in order to fully meet set objectives.
2. The study suggests the introduction of effective monitoring tools; training of staff on use of monitoring tools; use of effective communication and improved reporting and documentation in order to improve the monitoring and control process.
3. Project closure processes have the greatest influence on project outcome according to the regression model. The study recommends that project outcome should be evaluated from the customer acceptance and satisfaction perspective as well as that of the business objectives of the organization.

5.6 Suggestions for Further Studies

1. This report recommends that further research should be carried out to establish the other factors that are attributed to influencing 45% of the project outcome; according to the regression model.

2. The study on selected public sector infrastructure projects focused on internal processes in Telkom Kenya where the respondents were drawn from the company headquarters. It is recommended that this topic can be investigated from the customer perspective where clients constitute the sample population.

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APPENDICES
APPENDIX II: LETTER OF TRANSMITTAL

Nicholaus N. Nyakundi

P.O Box 50689-00100

GPO

Nairobi,

17th June 2015.

Dear Respondent,

RE: **DATA COLLECTION**

I am a student at the University of Nairobi. I am currently doing a research study to fulfil the requirements for the award of the degree of Master of Arts in Project Planning and Management on the “**INFLUENCE OF PROJECT MANAGEMENT PROCESSES ON SELECTED PUBLIC SECTOR INFRASTRUCTURE PROJECTS’ OUTCOME AT TELKOM KENYA LIMITED**”. I therefore request you to fill the attached questionnaire. Kindly answer all questions as completely, correctly and honestly as possible. Your response will be treated with utmost confidentiality and will only be used for academic purposes.

Thank you in advance for your co-operation.

Yours faithfully,

Nicholaus Nyakundi

L50/66188/2013

Researcher

APPENDIX II: QUESTIONNAIRE

Note: Do not write your name anywhere on this questionnaire. Please tick your options where applicable. Your cooperation is highly appreciated. The responses you give will be strictly confidential. No reference will be made to any individual(s) in the report of the study.

PART A: Respondents Profile

1. Gender Male Female
2. Age
 Below 24 years 25-29 Years 30-34 years
 35-39 Years 40-44 Years Over 44 Years
3. What is your education level (state the highest level)?
 Certificate Diploma Undergraduate
 Postgraduate Other _____
4. How many years have you worked for the company?
 Less than 1 year 1-3 years 4-7 years
 8-11 years over 11 years
5. What is your professional orientation?
 Sales & Marketing Information Technology & Networks (IT&N)
 Finance & Accounts Procurement
 Project Management Customer Care
6. Please tick appropriately on general project information for projects handled.
Average contract period: 1 year 2 years 3 years
Total order value (TOV): _____ _____ _____
Segment Parastatals Government agency

PART B: Influence of project initiation and planning on project outcome

7. Below are statements on project initiation and planning in relation to project outcome.
Please indicate the degree to which you agree using the scale: Strongly Agree (5);
Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Statement	5	4	3	2	1
Pre-sales meeting with client is held to scope client specifications					
Project analysis is done to determine commercial and technical terms					
Business case is determined and technical feasibility evaluated					
Project plan outlines all projects stages up to closure					
Deliverables and milestones are reasonable and attainable					
Required project resources are identified and committed.					
A contracted outlining responsibilities of all key stakeholders is signed					
Down payment is made before project commences					
Individual responsibilities and performance standards are well known					
Standards and goals for measuring performance are clear and attainable					
Testing and acceptance parameters are defined in advance					

8. In your own opinion, indicate the extent to which initiation and planning influence project outcome

- Very great extent
- Great extent
- Moderate extent
- Little extent
- No extent

PART C: Influence of project execution on project outcome

The following are key activities that characterize project execution. Kindly indicate your level of agreement using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Statement	5	4	3	2	1
Activities are carried out in accordance with an execution plan					
Responsibility for each task is clearly defined					
Supervision roles and reporting structures are well defined					
Project progress is monitored and compared with the project plan					
Project activities are monitored to ensure compliance					
Appropriate tools required for project tasks are availed					
Regular meetings are held to review project progress and address issues					
Communication methods and escalations are adequate					
Project changes follow formulated procedures for review and approval					

9. Please indicate the importance of the execution stage in relation to the project outcome.

- Very great extent
- Great extent
- Moderate extent
- Little extent
- No extent

PART D: Influence of project monitoring and controlling on project outcome

10. The following are statements related to project monitoring and controlling. Kindly indicate your level of agreement using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Statement	5	4	3	2	1
Effective project monitoring processes exist					
Project monitoring tools are effective					
Individual assessment on performance is regularly conducted					
Progress is monitored and compared with the project specifications					
Status reports are regular and stakeholders are informed					
Change control procedures are well defined at the start					
Authority and responsibility for change requests is defined in advance					
Changes in scope include risk and impact analysis					
Project changes follow formulated procedures for review and approval					
Decisions to approve or reject changes are well documented					

11. What changes would you propose to improve monitoring and control measures?

PART E: Influence of project closure on project outcome

12. Below are statements on project closure. Please indicate your level of agreement using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Statement	5	4	3	2	1
Project closure is guided using a pre-determined procedure					
Responsibility for sign off is defined and assigned					
Vendors and contractors are evaluated on their performance					
Customers sign acceptance forms and issue certificate of completion					
Customers are informed on warranty, support and maintenance					
Review to evaluate actual costs against budget					
Team performance is reviewed					
Identification of changes to improve delivery of future projects					
Clients are interviewed on satisfaction with overall project delivery					
Final report on project analysis, recommendations and lessons learnt					
Number of projects completed on time					
Number of projects completed on budget					
Number of projects tested and sign off by client					
Projects successfully closed and billed					

APPENDIX III: RESEARCH PERMIT

CONDITIONS

- You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
- Government Officers will not be interviewed without prior appointment.
- No questionnaire will be used unless it has been approved.
- Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
- You are required to submit at least two (2) hard copies and one (1) soft copy of your final report.
- The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 6006

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:

MR. NICHOLAUS NYASIKERA NYAKUNDI

of UNIVERSITY OF NAIROBI, 0-100 Nairobi, has been permitted to conduct research in Nairobi County

on the topic: INFLUENCE OF PROJECT MANAGEMENT PROCESSES ON SELECTED PUBLIC SECTOR INFRASTRUCTURE PROJECTS OUTCOME AT TELKOM KENYA LIMITED

for the period ending: 4th December, 2015

Permit No : NACOSTI/P/15/7007/7096

Date Of Issue : 30th July, 2015

Fee Received : Ksh 1,000

Applicant's Signature

Director General National Commission for Science, Technology & Innovation

