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**Title of the report: The role of governance in the success of Passenger Rail
Agency of South Africa (PRASA) projects**

Student Name: Lungisa H. Mavundla- (MVNLUN001)

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ABSTRACT

Project governance sets the guidelines and operational framework that dictates how decisions should be made during the project process to increase the prospects of successful project delivery. Understanding a project governance mechanism and its complexities and resolving challenges in the application of project governance practices are steps in the right direction to effectively entrenching a project governance mechanism in the organization's projects. This research probes the role of governance in the management of projects. The research followed a qualitative approach using case study method. Questionnaires and document reviews were used as data collection tools. Case data was collected from 6 interviewees and 6 completed projects. Thematic analysis was used to analyse data.

The research revealed that PRASA entrenches a governance framework for its projects at different levels of the organization. PRASA follows a standardized structure and work methods that are based on the Project Management Body of Knowledge (PMBOK) framework of standards and best practices. The format of the project governance framework to a high degree adheres to the recommendations made by the project governance literature, with various roles and responsibilities such as the sponsor, steering committee, project management office, and a project manager. The application of the governance framework on the projects was found to be similarly applied in the projects reviewed. While certain processes and mechanisms to facilitate the application of a governance mechanism exist, various factors were found to hamper the practical application of the governance framework. Large project steering committee with limited decision making powers, substantial dependence on contractors for project management know-how, long procurement process cycle were some of the factors found to hamper effective application of the governance framework. The research concludes that the limitations in the existing framework as well as the challenges to effective application of the framework are thought to contribute to projects that are late and over budget.

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When I was unable to say my own, I relied of my mother's unfailing morning prayers many kilometres away, gratitude goes to her. I would like to thank my supervisor Mr. Mark Massyn for not giving up on me. While I battled depression and suicide threatened to end it all, the universe would not let the sun set on me; I recognize God's grace in my life. I express the journey in the words of Whitney Houston:

*I didn't know my own strength, lost touch with my soul, I had nowhere to turn
I had nowhere to go, lost sight of my dream, thought it would be the end of me
I thought I'd never make it through, I had no hope to hold on to, I thought I would
break.....*

*I didn't know my own strength, and I crashed down, and I tumbled, but I did not
crumble, I got through all the pain, I didn't know my own strength, survived my
darkest hour, my faith kept me alive, I picked myself back up, hold my head up
high, I was not built to break....*

*I didn't know my own strength, I found hope in my heart, I found the light to life,
my way out the dark, found all that I need, here inside of me, hold my head up
high, I was not built to break, I didn't know my own strength, I was not built
to break*

I got to know my own strength.

Whitney Elizabeth Houston (August 9, 1963 – February 11, 2012)

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CHAPTER 1: INTRODUCTION

1.1 Background to the study

The project organization is made up of several diverse internal and external stakeholders, all with varying power and interests. The delivery of the project entails the interactions of these stakeholders who pull together their resources, skills and knowledge to achieve a common goal.

Project stakeholders by nature vary and their relationships are complex. Stakeholder complexity can be alluded to a variety of factors. OECD (2017) makes reference to factors such as the number of stakeholder groups involved, stakeholder heterogeneity which can result in difficult decision making, dynamics resulting from conflicting interest, complex interdependent economic dealings, regulatory and legal requirements that stakeholders need to adhere to, as well as supply chain dynamics. The different project phases are dramatically different, as the project progresses through the various stages from conception to execution; behaviours of stakeholders shift as well according to Turner (2009). Turner further states that to overcome the stated complexities, a co-ordination mechanism as well as decision making tools and processes are required to manage stakeholder complexity and interactions that will ensure successful delivery of the project.

After two decades of democracy; South Africa continues to battle a phenomenon which Westaway (2010) calls 'contemporary segregationism'. The legacy of societal segregation in South Africa has seen millions of workers residing on the outskirts of major cities in which they work. Westaway makes an observation that contemporary segregationism is brought about by investment decisions made by the government. Such decisions are informed by assumptions that some geographic areas are more investment worthy than others; resulting in what the government calls Spatial Development Initiatives (SDI's) and Industrial Development Zones (IDZ's). Westaway explains that these development choices have steered further development of urban areas and underdevelopment in rural areas further; these choices have led to rapid urbanization which has in turn caused an increase in urban poverty with people leaving rural underdeveloped towns to seek better economic opportunities activities and jobs in larger cities.

Rail transport has generally much more throughput capacity and cost effective means of access to economic opportunities located in major South African metropolitan areas. Rail transport posits as an important contributor to the country's economic growth and social development. Yuan and Lu (2001) use the term 'transportation efficiency' to explain this relationship. Transportation efficiency is the extent to which a particular mode of transport can meet the travel demands of people in a transportation system according to Yuan and Lu (2001). McCarthy (2001) suggests that transportation efficiency can greatly affect the economic potential of an area. McCarthy goes on to state that a transportation system is highly effective in moving people and goods the consequence will be that the transport system will have a greater ability to generate wealth if the country's economy is responsive to the opportunity presented. This relationship explains why PRASA needs to successfully deliver projects that would improve the organization's operations and consequently contribute to economic development of the country.

Projects in the passenger rail environment are postulated as strategic vehicles which seek to improve rail operational performance and position rail as the backbone of public transport. This means projects will not only execute strategy but also provide strategic solutions in the organization. Projects would achieve this by improving PRASA's capacity to meet the growth in rail passenger demand, improve reliability, reduce congestion as well as improve the organization's capability to generate revenue so that it can be self-sustainable. The organization's projects are delivered through the organization's own project office and through the use of external expertise e.g. consultants and contractors.

Holst-Volden and Andersen (2017) argue that '*public projects are the outcome of a political tug-of-war between stakeholders in society, whose needs and priorities will concur or conflict to varying degrees*'. Holst –Volden and Anderson note that public project selection may be subject to political influence. Factors such as changing of boards, changing ministers, legislative framework and government maybe another source of complexity that creates unpredictable stakeholders and sponsors who can influence or alter the rate of response required to deliver projects. Mabelebele (2006) concurs with this view and discusses that public service projects are implemented in the context of a fluid, unpredictable political environment, in which political principals may have views that are incompatible with common project management approaches.

Individual personal objectives of some stakeholders can tend to override the objectives set by the organizations. This view is also shared by OECD (2017) who warns that frequent changes in political systems and the following changes in regulatory framework increase risk for project developers. OECD alludes to stakeholders who may be tempted to push for; or reject projects that would benefit their political or private interests. The project environment dynamics and stakeholder complexities create risk for the implementation of the project e.g. higher costs than previously negotiated, political influence, disputes with contractors, design and specification changes. Against this prevailing environment that provides a terrain that can be used for opportunism and self-indulgence; the project organization would need to balance excessive involvement of principals in projects and lack of oversight.

As a state owned enterprise, PRASA is owned by the citizens as such has goals that are public and social in nature. As a public entity, PRASA is accountable to parliament, the general public and investors as such is highly influenced by factors in the business environment. Projects in the public sector are prone to public scrutiny. When they are late with exorbitant costs, projects that are financed with public funds can bring down the efficacy of investment and cause huge reputational damage to company executives. In view of this perspective, PRASA has to balance the selection of projects that are in line with strategy, manage planning in a manner that improves prospects of successful implementation and reduce risk through controlled execution.

Project failure correlates with the complexity of the project, its size and its duration explains Jenner (2015). Because of their size, technical complexity and multiplicity of stakeholders; infrastructure projects are vulnerable to corruption, capture and mismanagement throughout the project lifecycle according to OECD (2017). Some of the projects undertaken by PRASA are large projects. Large projects are thought to be inherently risky and more complex given the amount of resources and time they consume. PRASA's fleet renewal programme for instance entails the procurement of new rolling stock coupled with upgrades of maintenance depots, and yards to suit the needs of the new fleet. Effectively; the different projects in this programme are often broken down into smaller projects with various project teams from various PRASA entities e.g. PRASA technical team; PRASA corporate real estate team and the PRASA rail team which represents the end user team. These teams need to interface with external stakeholders while collaborating with each other to achieve the project end

result. The relationship between the various project teams, various project stakeholder of each project and the corporate office needs to be carefully managed.

OECD (2017) argues that poor governance is a major reason cited for the failure of infrastructure projects. Commenting on the main causes of project failure; Jenner (2015) lists various dynamics that are fundamental causes of project failure. Amongst them, the absences of a clear link between the project and the organisation's key strategic priorities as well as measures of success are cited. The views articulated by Jenner (2015) are echoed by Gbedemah and Morgan (2010) in their paper titled 'how poor project governance causes project delays'. Gbedemah and Morgan quote an Association of Project Management (APM) conference speaker who described effective governance, strategic alignment and stakeholder management as pillars for project success when compared to the ability to plan and deliver the project. Jenner (2015) discusses that at the core of myriad solutions to solving project failures is effective governance, which enforces organizational accountability along with independent and regular reviews. This view resonates with that of Joslin and Muller (2016) who state that governance is an antecedent of project success.

Bekker and Steyn (2009) state that the application of governance principles affects project success. A properly defined project governance framework is fundamental to managing the complex relationships and successful delivery of each project and the ultimate programme. The project governance framework would provide a tool to lessen risks and to moderate the relationships between the various stakeholders. This would enable the organization to strike a fine balance between communicating and satisfying the varying demands of stakeholders and power brokering. A project governance mechanism supports organisational decision making at project level.

1.2 Background to the research problem

Passenger Rail Agency of South Africa (PRASA) was established in March 2009 when the government of the Republic of South Africa sought to transform the public transport sector and provide integrated customer service. The government transformed South African Rail Commuter Corporation (SARCC) by consolidating Metrorail, Autopax, Shosholoza Meyl and Intersite to form PRASA. In this form; PRASA provides a metropolitan rail service; a long distance rail service, a long distance bus service and a property management and portfolio development entity.

According to the African Development Bank (A.D.C), railway transport boast substantial benefits compared to other modes of transport. Rail transport may reduce road casualties and related cost according to A.D.C (2015). PRASA (2018) state that the organization has a constitutional mandate to provide a safe and reliable rail transport system and related services to millions of commuters across South Africa.

Decades of underinvestment in the rail sector had led to unavailable, unreliable and old infrastructure. According to JICA (2013), prior to the current investment in projects as documented in the company's project register, PRASA had made no proper investments with aging rolling stock that has an estimated age of 37 years. The breakdown of facilities (mean time between failures) recorded for the periods April to August 2012 was 29.6 hours for track facilities, 33.9 hours for electric facilities and 1.67 hours for signalling system are some of the challenges noted by JICA (2013). PRASA (2018) noted that the consequence of underinvestment has been fewer running trains, overcrowding, delays which have led to customer frustration, and the resultant burning and vandalism of the already ailing infrastructure. These problems undermine PRASA's potential to contribute to the country's economic development and access to economic opportunities by the people that live in the growing South African metropolitan cities.

PRASA undertakes projects as means to achieve their mandate thereby improving service offering of commuter rail service to the millions of South African commuters. Various programmes form part of the PRASA multi billion Rand PRASA project portfolios. PRASA (2016) lists some of the projects within the portfolio and include the station modernization programme, signalling programme, fleet renewal program and workplace improvement programme. As a public sector organization PRASA has to contend with a myriad of challenges in the delivery of the company's projects ranging

from diversity of stakeholders (including political and administrative stakeholders), difficulty in measuring success as well as supply chain frameworks and mechanisms. In the company's 2012/13 – 2014/15 corporate plan; PRASA identifies the management of capital projects as being characterized by ineffective project governance, inability to effectively spend capital funds in line with the organization's mandate and project management practices as high risks that require senior management intervention. In the face of public pressure and government for PRASA to improve performance, PRASA uses projects as means to better its service offering however the organization experiences difficulties in effectively implementing the organization's project governance framework.

1.3 Problem statement

The problem to be examined by the study can be stated as follows:

As a public sector organization PRASA has to contend with a myriad of challenges in the delivery of the company's projects ranging from diversity of stakeholders (including political and administrative stakeholders), difficulty in measuring success as well as supply chain frameworks and mechanisms. In the company's 2012/13 – 2014/15 corporate plan; PRASA identifies the management of capital projects as being characterized by ineffective project governance, inability to effectively spend capital funds in line with the organization's mandate and project management practices as high risks that require senior management intervention. Although the organization has a project governance mechanism in place, it is not working effectively; the company experiences difficulties in implementing the governance mechanism in its projects.

1.4 Research question:

The research question to be addressed may be stated as follows:

- What are the challenges to implementing an effective project governance framework at PRASA?

1.5 Research Aim:

The intended aim of the research is to:

- Identify the challenges to implementing a project governance framework.

1.6 Research proposition:

Addressing the implementation challenges along with an enabling environment and the accurate application of the project governance framework are instrumental to fully imbedding a project governance mechanism that will successfully support and mobilize resources needed to carry out successful projects.

1.7 Research Objectives

The objectives of the study can be stated as follows:

- To establish organizational understanding and definition of project governance in the delivery of projects.
- To identify enablers to implementing a project governance framework.
- To analyse the nature and the structure of the framework and its limitations.
- To identify the challenges to implementing a project governance framework.
- To establish the organization's definition of project success
- To make recommendations on how the organization can improve the implementation of the project governance mechanism

1.8 Research methods

The above objectives were achieved by adopting the following research methods:

- A literature review pertinent to the study was conducted using peer reviewed journals and conference papers. Key words such as, governance, project governance, project governance structure, project governance roles were used.
- Data was collected by conducting face to face interviews with members of staff at PRASA who participate in the execution and management of projects. Data was also collected using document reviews of selected completed project in project register of the Western Cape region of PRASA.

- Analysis and interpretation of interview data as well as data from document review was performed.
- Conclusions and recommendations were made.

1.9 Limitations

The study is subject to the following limitations:

- Not all PRASA projects as found in the PRASA project register were studied. The study is limited to a selected number of projects under PRASA Corporate Real Estate Solutions (PRASA CRES) project register in the Western Cape region of PRASA.
- Only completed projects were used in the case.
- Another limitation of the study was that the size of the interview sample was relatively small, with 6 research participants.
- Lastly, some of the research participants feared speaking 'negatively' against their employer PRASA.

1.10 Structure of the report

The research report is structured as follows:

Chapter 1 introduces the study by providing the context of the research and the problem that motivated the study. The chapter further lays out the research objectives, as well as the research question. PRASA is used as a case to study project governance phenomenon. While PRASA is a large organization with various entities under its banner, the study is focussed on selected projects run by the Western Cape region of PRASA corporate real estate solutions (PRASA CRES).

Chapter 2 of the report proceeds with a review of key literature on project governance and project success. Literature review section aims to integrate and synthesize literature in order to demonstrate understanding of the theoretical underpinnings related to the research question.

Chapter 3 describes the use of qualitative case study approach using data collecting tools such as semi structured interviews and well as document reviews of completed projects to derive qualitative data.

Chapter 4 reports the findings and interpretation of the data collected together with the analysis of the findings.

Chapter 5 comprises a review of the research objective and concluding discussion as well as recommendations. This is followed by a full list of references for the research report and an appendix containing the interview research instrument.

1.11 Chapter conclusion

This chapter introduced the topic under study. The chapter outlined the background of the research problem, the research question, as well as the objectives. The chapter further outlined the research methods that were used in the research as well as the limitations of the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to critically analyse various literature pertinent to the research investigation. It begins with an evaluation of the concept of project success. It further goes on to provide an overview of the concept of governance and corporate governance which serves as the link between projects and the way in which projects are governed. The chapter concludes with a brief summary of key findings in the literature.

The literature study was guided by Internet searches using Google scholar. The researcher was mostly interested in peer reviewed academic papers, conference papers and to a small extent dissertations were used. Search key words used include project success, project governance, and project governance framework. Over and above internet searches, books were also used to gather knowledge.

2.2 Project success

Project management literature does not provide a consistent view of the definition of success. Using the parameters: cost, time and quality; a project would be referred to as successful if it reached objectives within these predetermined constraints according to Nicholas and Steyn (2012). There is a contention regarding the use of the iron triangle to define success. The contention is based on the limitation of the iron triangle in that some projects which would ordinarily be considered a failure because they exceeded delivery dates, consumed way over budget resources are considered successful by others for different reasons as stated by Radujkovića and Sjekavicab (2017). A strong argument is put forward by Radujkovića and Sjekavicab (2017) that it is possible for a project to succeed, despite having flawed project management process, as the project would have achieved higher and long-term goals. Thus while the project would have fouled on the predetermined criteria of cost, time and quality, it would be accepted by the client based on the overall ability to deliver the goal. The above view is shared by Belassi and Tukel (1996) who contend that the ambiguities in defining success can be alluded to different perceptions of success and failure by parties involved in a project. Bourn (2007) used the Sydney Opera House to illustrate this point. While the opera house was dubbed an acoustic and aesthetic disaster described through the project management success lens, it remains iconic and is hailed as the masterpiece of the 20th century when observed through the project product success lens.

The same definition can be assumed for the Titanic movie with respect to its project management however the project outcome raked in over one billion Dollars in revenue at the box office according to Puri (2009). Clearly, success is viewed differently and each view depends on the prism used to view success. The examples used show success viewed from the project management lens and an opposing view from the project product lens. A strong case can be argued that while the product might be considered successful in both cases it does not absolve the failures in project management which was dismally flawed.

Belassi and Tukul (1996) cite Bacarrini (1999) when they discuss two distinct but connected categories of success; i.e. project product success and project management success. According to Bacarrini, project management success addresses the manner in which the management of the project process was done in order to accomplish the set goals of time, cost and quality. Project product success on the other hand focuses on the project end result, which is the achievement of the overall project goals. The clarity provided by Bacarrini is consistent with the view expressed Radujkovića and Sjekavica (2017) that project management failure doesn't always lead to the failure of a project. It can be stated therefore that project management is an important factor that contributes to project success.

The simplistic definition of project success using the iron triangle model has evolved with the development of new models that encompass other aspects which are thought to have an effect on project success. To illuminate this point Allport, et al. (2008) use Pinto's ten factor success model for instance and discuss top management support, communication and client acceptance as some of the primary determinants of project success. In their paper, Slevin and Pinto (1987) compiled a list from earlier literature of critical success factors in project implementation. 'Control mechanisms' including planning and schedules as well as top management support are cited from 5 different sources as a critical success factors by Slevin and Pinto (1987). The list below is an adaptation of the Slevin and Pinto ten factor success model, with the each factor explained.

Pinto's ten factor success model; adapted from: (Pinto and Slevin, 1987)

Success factor and its description

- Project Mission- Well-articulated mission and commitment to the project by team members
- Top management support- Management buy in and support of the project
- Schedules and plans- Detailed plans and schedule on how and when plans will be implemented
- Client consultation- Consultation with th users of the project and after sales service
- Personnel- Skilled and competent human resources
- Technical tasks- Available required technical expertise and technology to execute the project
- Client acceptance- Selling and acceptance of project product by end user
- Monitoring and feedback- Timeous and comprehensive control
- Communication- Provide key data to all key stakeholders
- Trouble shooting- Ability to handle unexpected problems

Allport, et al. (2008) uses 3 factors to define project success based on the set objectives. The dimensions include reaching the financial objectives forecasted for the project, policy success that is how well the project solves the policy issues and lastly durability which addresses the project outcome's ability to deliver in the long term so that the intended policy issues are resolved

PWC (2018) surveyed 98 project professionals holding diversity of roles, e.g. portfolio managers to individual project managers; who worked in large to medium sized projects in Belgium. The survey aimed to determine some of the factors that drive project success. The respondent's definition of success was centred on schedule, budget, stakeholder satisfaction and an element of learning from experience. The article concludes by identifying 12 factors in figure 1 that are the cornerstone of project

success. It is notable that 'a governance model that enables efficient and adequate decision-making' is listed among these important factors.



Figure 1: PwC's 12 elements for project success (PwC, 2018)

OECD (2006) advocates that project success be measured based on 5 criteria. First the project's efficiency, that is delivering the project in terms of agreed scope and time. Second; project effectiveness; that is the extent to which the objective has been achieved. Thirdly, the impact of the project needs to be considered by counting the positive and negative effects of the project. Fourth whether the project is relevant by being aligned with the organizational priorities and being able to meet the user's needs and lastly how sustainable are the counted positive aspects of the project.

It is clear from the discussion above that the early school of thought on success that solely focussed on cost, time and quality have evolved to include other dimensions that ought to measure strategic success factors and the effect of the project on long term business objectives a view articulated by Williams, et al., (2010).

Bekker and Steyn (2009) note that the factors of success may vary according to the project size, the industry and the strategic direction sought by the organization. A clear distinction has been made between project success and project management success,

to that effect 'project management' can be regarded as a success factor for a project and project governance is as such defined as a project management factor.

2.3 Project governance as a project success factor

The study by Sirisomboonsuk et al. (2017) found project governance to be positively associated with project performance. According to Crawford and Cooke-Davies (2006) project governance is receiving attention and is thought to be a variable that has a strong influence on project success. Lack of well-defined and delegated authority and responsibility are cited by Cleland (2004) as some of the reasons why projects fail. Other writers such as Abu-hassim et al. (2011) link project success to governance and argue that lack of governance can lead to abysmal project outcomes. Effective governance structure is poised by Lechler and Dvir (2010) as a determinant of project success. Garland (2009) recognizes governance as a critical success factor for the delivery of projects. On the back of Pinto's success model that describes project success to be dependent on corporate management support; it also depends on how well the decision making powers and responsibility are delegated to make decisions that are right for a particular project.

2.4 The need for a project governance mechanism

A strong case for project governance can be argued from a point of the need for decision making mechanisms, resource allocations, timely approvals, as well as clear reporting lines. While the appointment of a project manager is a step in the correct direction regarding the governance of a project; higher level tools and control mechanism including the mechanism by which decision will be taken in the project are needed. Bekker (2014) views project governance as a framework within which project control takes place.

Bekker and Steyn (2009) conducted a research study to ascertain the importance of project governance in large scale investments in South Africa. Bekker and Steyn concluded that project governance has an effect on project success. Too et al. (2017) make a compelling argument for project governance and explain that it improves transparency between different organizational levels reduces conflict between different stakeholder groups while positively impacting exchange of information between them.

The Project Management Institute-PMI (2013) discusses project governance and asserts that 'project governance empowers organizations to be consistent in managing their projects, take full advantage of the value of the outcomes of the project while aligning them with organizational strategy'. Project governance provides a platform and the mechanisms through which the project manager and project sponsors and other individuals who have vested interest in the project take decisions. The decisions ought to mutually please the stakeholder's needs and meet the objectives of organizational strategy as well as resolve situations where these factors may not be aligned.

In his book, O'Leary (2012) argues three reasons why a project governance mechanism is necessary. Firstly, O'Leary assumes that if left to their own devices the project leaders would not produce the best outcomes, thus project governance mechanism provides for a mechanism for checks and balances. The second argument advanced by O'Leary is that the governance mechanism would provide a vehicle by which different stakeholders can act collectively, reconcile their perspectives and interests in order to achieve common project objectives. Lastly, the mechanism demarcates decision points and delegation structure within specified limits of authority, ultimately providing a single point of accountability.

This translates to a notion that governance in general has to look after the interests of those who have a stake and can be affected by the project; be it external or external stakeholders. The stakeholder theory is used to show the importance of this relationship as it reinforces the need for project governance.

2.5 Theories underpinning the need for project governance

- **Stakeholder Theory**

Müller, et al. (2013) discuss that corporate governance is closely related to stakeholder theory. This assertion fits well with the stakeholder theory definition by Freeman (1984) which states that the organization's decision makers have an obligation not only to its investors but also other groups which are inside and outside of the organization. The value system of this theory is one that prioritizes the interests of all stakeholders. Stakeholders are defined by Larson and Gray (2013) as organizations and individuals that are actively involved in a project, whose interest may be adversely or positively impacted by the project.

Klakegg, et al. (2008) asserts that the presence of stakeholders creates uncertainty and risk in a project. Stakeholders are not a static homogeneous group and their impact, power and interest vary in the organization. The stakeholder that is the sponsor for instance has a responsibility to express the requirements, put forward money for the project, demand and agree on the value for money the project should deliver. A mechanism is needed to regulate the demands and actions of stakeholders and reduce risk. Müller, et al. (2013) discuss the function of a governance mechanism and puts forward that the primary function of a governance structure amongst other things is to define the rights and responsibilities of stakeholders, balance economic, social and environmental goals while controlling and directing the organization.

At its very core, stakeholder theory is about value creation, thus a very fine balance needs to be struck between making profits for the organization and providing value for stakeholders. Since various stakeholders are involved in a project, the project organization is answerable to a variety of stakeholders. The implications are that: just like a corporate governance structure, a project governance structure should be a broader representation of the stakeholders of that particular project. This would be in line with the inclusive approach of the stakeholder theory.

- **Transaction cost economics**

According to the theory of transaction cost economics, every transaction has a cost attached to it, and organizations need to act to minimize the costs explains Aholaa et al. (2014). Applying this theory in a project environment, there needs to be 'proper protocol' which will govern the handling of contracts and procurement processes and ensure transparency with all the project's participating stakeholders including project consultants and contractors. Further, different governance structures for different projects may benefit different projects depending on whether the project/ product is being bought in the market or made inside the company.

- **Agency theory**

Aholaa, et al. (2014) proposes that according to the agency theory, a contractual relationship exists between the firm's agents; the directors of the organization and the owners and shareholders of the organization. The contract is a governance mechanism that seeks to restrain opportunism and self-interest of these internal stakeholders. In the project governance context, the governance framework would provide a code of

conduct as mechanisms to regulate the actions of individuals who make up the project organization such that their actions are consistent with best practices that improve the prospects of success of projects.

- **Stewardship theory**

In the context of the stewardship theory, Aholaa, et al. (2014) explains that the top management including directors are regarded as stewards for the organization and as such should act in the best interest of the organization. There exists a problem where people holding the top management positions may have interests that are in conflict with the organization's objectives. The theory proposes that optimum governance can resolve this problem.

Based on the theories, it can be concluded that project governance involves an integration of various governance arrangements such as governance of relationships, governance of contractual agreements, transactional governance as well as regulation and control of conduct.

2.6 Development of project governance: from corporate governance to project governance

Corporate scandals that erupted in the past few decades marked by lack of transparency, lack of corporate accountability, failure to provide responsible governance all led to the various countries instituting laws and regulations to govern corporate world. In the context of South Africa, the King Code for instance is a comprehensive set of principles and leading practices that have an overarching objective of sound corporate governance practices with a philosophy that is grounded in corporate leadership, sustainability and corporate citizenship. Enhancement of corporate governance is increasingly seen as a means to build shareowner confidence, add value to the company and attract foreign investment to South Africa according to Walker and Meiring (2010). Corporate governance exist to ensure that the business objectives are achieved through reducing and mitigating risk and optimization of performance.

A simple definition of corporate governance by OECD (2004) states that; it is a system by which organizations are controlled and directed. The said system is explained by Wideman (2013) as comprising a regulatory framework and accompanying market mechanism with the organization's board, management shareholders and stakeholders

with the various roles and relationships as well as the goals of the organization. Various aspects are thought to be the cornerstone of corporate governance by Crawford and Cooke-Davies (2006). These include: the roles of stakeholders and their responsibilities, decision making, transparency and disclosure, management of risk and risk control, accountability and strategy implementation.

In his book, Renz (2007) hypothesized that project governance came to being as a result of a need to address a 'governance gap' that exists between project operations and control bodies, which prevents successful implementation of developmental objectives in development projects. The model in figure 2 illuminates the gap between organization control bodies and project management introduced to by Renz (2007). Renz proposes that a project governance model can bridge this gap.

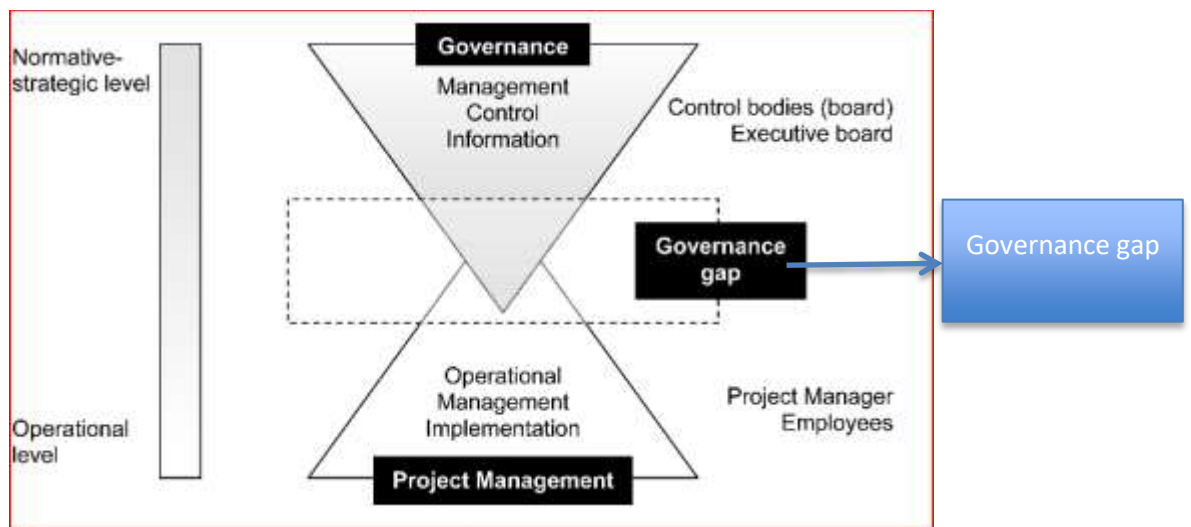


Figure 2: Governance gap: (Renz, 2007)

Muller (2009) puts forward that a governance mechanism that is applied at the corporate level of the organization affects projects through the impact it has on the behaviour of people and managers that implement the projects. To this effect, Muller reasons that governance needs to be implemented through a framework that guides these implementers in decision making, processes, roles and responsibilities: a project governance framework which will allow the synchronization of organization processes and project specific processes.

Too et al. (2017) and Williams et al. (2010) asserted that governance of projects includes the extents of corporate governance that are explicitly associated to activities

of the project and their provisions through which projects are chosen, prioritized and project decisions are made. Similarly; Bekker and Steyn (2009) defined project governance as a subset of corporate governance. These definitions suggest that corporate governance is an underlying philosophy of project governance.

2.7 Relationship between corporate governance and project governance

A closer look at the definition of corporate governance and project governance reveals underlying similarities in the terms used in the characterizations of the two phenomena: words such as responsibility, authority, relations, directing and monitoring are noteworthy. While project governance has been defined as a subset of corporate governance by Bekker and Steyn (2009), a clear distinction however needs to be drawn between the two phenomena. Corporate governance provides an authoritative oversight, monitors compliance, mitigates risk and provides guidance and direction for project governance structures explains Abu-hassim., et al. (2011). APM (2004) on the other hand differentiates project governance as a direct link between project management and corporate governance and as such represents the extents of organizational governance that are related to project activities.

A conceptual framework in figure 3, proposed by Too and Weaver (2014) unambiguously illuminates the 'interrelationships' between project governance and corporate governance. There are numerous fundamental principles of corporate governance that extend themselves to the project governance structure.

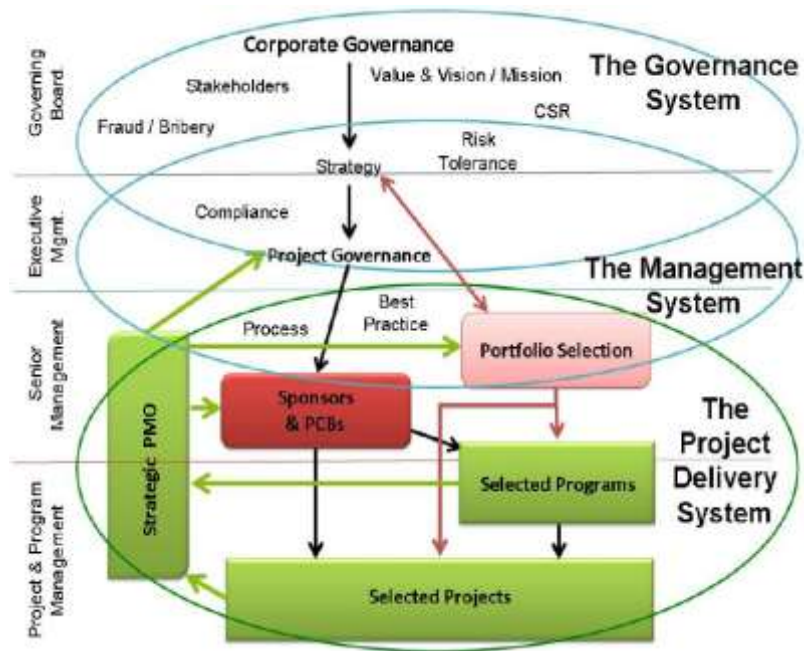


Figure 3: Relationship between corporate governance and project governance: (Too & Weaver, 2014)

Firstly, Too and Weaver's conceptual framework highlights that the project governance exist to ensure that the business project portfolio is aligned with the business main objectives and the organization's strategy. Secondly, project governance enacts corporate best practices in the project organization. Through project governance; executive management is able to designate the decision making powers and the related structures for the project delivery system. By delegating decision making powers to the project governance system, the executive management is able to entrench an influential oversight role and monitor compliance with organization's policies and best practices, mitigate risk while providing guidance to the project delivery system.

Echoing the stated interrelationship, Bekker and Steyn (2009) argued that there is a direct association between governance of the organization as a whole and the mechanism of governing projects. Both structures are intended to pursue organizational effectiveness and efficiency as well as creating value for stakeholders. Muller et al. (2013) agrees with both Too and Weaver's conceptual framework as well as the assertions put forward by Bekker and Steyn assertions and conclude that project governance exists within an organizational governance framework.

Table 1 shows how Bekker (2014) uses corporate governance principles outlined by OECD (2004) to mirror project governance principles, in his effort to explain and guide how corporate governance principles can be used to develop a project governance structure of a business.

OECD corporate governance principles	Project governance principles
<ul style="list-style-type: none"> • Basis for effective corporate framework 	<ul style="list-style-type: none"> • Basis for effective governance of projects
<ul style="list-style-type: none"> • The rights of shareholders and key ownership functions 	<ul style="list-style-type: none"> • The rights of sponsors and financiers
<ul style="list-style-type: none"> • Equitable treatment of shareholders 	<ul style="list-style-type: none"> • Equitable treatment of all stakeholders
<ul style="list-style-type: none"> • Fulfil stakeholder roles 	<ul style="list-style-type: none"> • Social, economic and environmental care
<ul style="list-style-type: none"> • Transparency and disclosures 	<ul style="list-style-type: none"> • Ethical conduct
<ul style="list-style-type: none"> • Board responsibilities 	<ul style="list-style-type: none"> • Responsibilities of project steering committee

Table 1: Project governance principles mirrored on OECD corporate governance principles: (Bekker, 2014)

The aim of project governance is to clearly demarcate lines of accountability, prevent overlap and interference from individuals who may have power in the organization but however are not accountable for the project. According to Larson and Gray (2013), project implementation answers the question “how the organization’s strategy will be realized’? While corporate governance has a responsibility to select and implement projects that support organizational strategy, project governance framework is a vehicle for efficient and effective implementation of the selected projects.

Garland (2009) echoes this view and argues that organizational governance structures are not designed to meet project decision making. Garland supports his argument by providing reasons and states that undesirable effects that result from integration and blurring introduces multiple decision making layers and blurs accountability. Garland further elaborates that decision making maybe placed within individuals who are not best suited to make the best project decisions. Articulating a project governance framework and separating it from corporate governance structure reduces the number of decision points. While project decision making will be influenced by the corporate line of command, it will not follow the same path.

2.8 Defining project governance

Literature provides a variety of definitions of project governance, using various theoretical lenses. There is no consensus on a single definition. Various definitions highlight important fundamental principles and are influenced by the background of the researcher and the context of the research. A very important function associated with project governance is strategic alignment; that is: a system designed to align the goals of the project with the goals of the organization as set in the strategy according to APM (2004). This is consistent with Pinto and Slevin (1987)'s assertions that projects are embedded in organizational strategy. An additional function of project governance is to provide a methodical approach to monitor and communicate project progress, which allows better stakeholder engagement and to impact decision making for the project. Based on these assertions, the four definitions are chosen as they encompass the nature, the role and the objectives of a project governance structure:

Abu-hassim., et al. (2011) define project governance as a framework made up of processes and procedures used to select prioritize, and provide oversight of the project Bekker and Steyn (2009) provide a similar definition and state that it is a framework for project decision making. PMI (2016) on the other hand defines project governance as the processes and functions that guide project management activities in order to create a unique product, service, or result to meet organizational strategic and operational goals. Holst-Volden and Andersen (2017)'s definition encompasses nature, the role and the objectives of a project governance structure and defines project governance is a mechanism to facilitate and coordinate accountability and transparency to prevent centralization of decision making power, reduce mistakes and lower risk through the support of project managers in the delivery of the project .

The fundamental goal is to make sure that projects are integrated with, and adhere to the objectives of the organization as well as extract best value for money. The governance principles would ensure that decisions are made timeously and rationally. Project decision makers are answerable and responsible to stakeholders, their actions should seek to bring value for all stakeholders and as such project governance is embedded in corporate governance.

Müller (2017) differentiated between 'the governance of projects' and 'project governance'. Muller described project governance as governance of a single project.

Muller used the project manager's authority and sovereignty, stakeholder involvement and the use of project boards to illustrate the phenomenon. Muller explained that the governance of projects on the other hand is a system of governance that encompasses a group of projects in the organization, a system that seeks to institutionalize project management methodologies, work methods and procedures. A similar categorization was made by Too and Weaver (2014) and Ahola et al. (2014).

2.9 Project governance paradigms

Aholaa et al. (2014) discuss two governance paradigms that differ in terms of control and focus. The authors distinguished two levels as 'project governance' and 'governance of a group of projects'.

- **Governance of a group of projects**

The model in figure 4 shows governance as being external to a particular project and individual projects are subjected to governance by the project's parent organization.

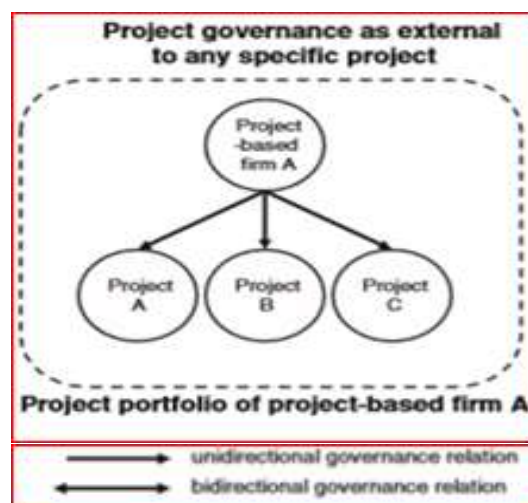


Figure 4: Governance of a group of projects (Aholaa et al., 2014)

This model is consistent with governance of a portfolio of projects by a parent organization. It entails the governance of all the projects in an organization, project selection techniques; the organization project management methodologies and reporting systems. The model is focussed on the aligning individual projects with other projects within the organization and their delivery to achieve common goals and the strategy of the organization.

- **Single project governance**

The second model in figure 5 advances governance as being internal to a project that is; single project governance.

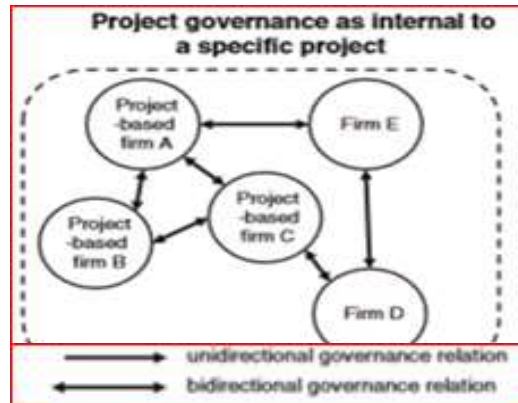


Figure 5: Single project governance (Ahola et al., 2014)

The single project governance model by Ahola et al. (2014) explains the balance between the varying goals and expectations of different actors, the autonomy of the project manager and sees the parent organization as ‘another’ important actor who defines governing principles as opposed to it being the primary determinant of the rules of the game.

Müller and Lecoivre (2014) however expound that governance of project management entails the governance of a single project or the collective governance of all the projects of a company. In this context, project governance and governance of projects are used interchangeably.

2.10 Composition and role of project governance structure

From literature, various basic fundamentals of project governance are discussed. Crawford and Cooke-Davies (2006) for instance designates various dimensions and describes decision-making, strategy implementation, transparency, ethical leadership, accountability, management of risk management as being the ‘role’ of any project governance framework.

The Association of Project Management- APM (2004) developed eleven project governance values which are believed will assist any organization in its effort to avoid and minimize failure of a project. The values mirror key corporate governance themes.

The principles designated by APM resonate with and strengthen the definition used by APM to describe project governance. APM further believes that it is through governance of project management that the senior corporate officials of a company and all other stakeholders will be timeously provided with relevant; suitable and reliable information.

APM's Project governance principles: roles and responsibilities adapted from APM (2004)

- **Decision-making bodies** such as the board and other structures provide governance arrangements and control mechanisms that are applied throughout the project lifecycle. The board holds the ultimate responsibility for the governance of all projects. It clearly defines the performance criteria, as well as the roles and responsibilities of the project governance structure. The board has a prerogative to examine projects and project management processes for priority and organizational strategy alignment. The board is responsible for making sure that the project portfolio supports overall business strategy.
- **Decision making points** make sure that the projects have approved plans with authorization and decision points. Members delegated to decision at decision points have enough authority, resources, the necessary competency and are representative of project stakeholders. The business case is supported by relevant and realistic information to make appropriate decisions.
- **Other governance elements** include a clearly defined risk management process, project reporting and escalation routes. Further, APM principles propose that organizations foster a culture of continuous improvement and information sharing.
- **Stakeholder engagement** principle emphasizes the engagement of all stakeholders according to their importance, power and interest.

The APM principles give off a strong element of relationship between 'corporate governance structure and roles and responsibilities of project governance structure as well as relationships with stakeholders and project control.

Crawford and Cooke-Davies (2006); O'Leary (2012) as well as Klakegg et al. (2008) put forward project governance principles which are similar to APM however with additional features. The proposed project governance structure to consist of; but not limited to the following fundamental principles:

- **Decision-making bodies** at different levels which are representative of all key stakeholders: would be responsible for decision making, problem solving and corrective action for deviations.
- **Demarcated roles and responsibilities** of decision making bodies would determine the scope and authority as well as escalation routes.
- **Stage gate approval processes** which would demarcate the decision makers, decision making points as well as decision making criteria to be met before a 'proceed' is granted at each stage of the project.
- **A quality assurance system** which would aid in ensuring realistic estimation of cost and benefits of the project as well as its risks further it would assist to manage compliance with agreements and project's process against the plan.
- **Documented agreements** relating to contracts and sign-off will serve as point of reference for signing off work as well as sounding board for dispute resolution.
- **Detailed governance elements** that would be responsible for managing project costs, time planning, communication, risk management processes etc.

It is worth noting that some of the requirements listed above are in fact corporate governance principles extended to project governance.

2.11 Various elements forming a project governance structure: a systems perspective.

By definition, a firm or company is an aggregation of different elements such as shareholders and stakeholders that pull their resources together and through certain processes work together with an aim to accomplish a common goal. Using a systems approach to define a firm; it is a complex systems with various subsystems that are arranged in a hierarchy e.g. board level, executive level, senior management level etc. Each subsystem has its own inputs, processes and outputs. There is an on-going feedback between the various parts of the system. For the system to work well, the various parts need to act in a coordinated fashion. Using a system perspective, the formulation of a project governance structure can be explained.

O’Leary (2012) makes similar assertions that organizational decision making is a group process which can be seen as a political process which involves the need to balance the interests and viewpoints of various stakeholders.

Figure 6 shows how a typical project governance structure is formed from various elements representing various levels of the organizations.

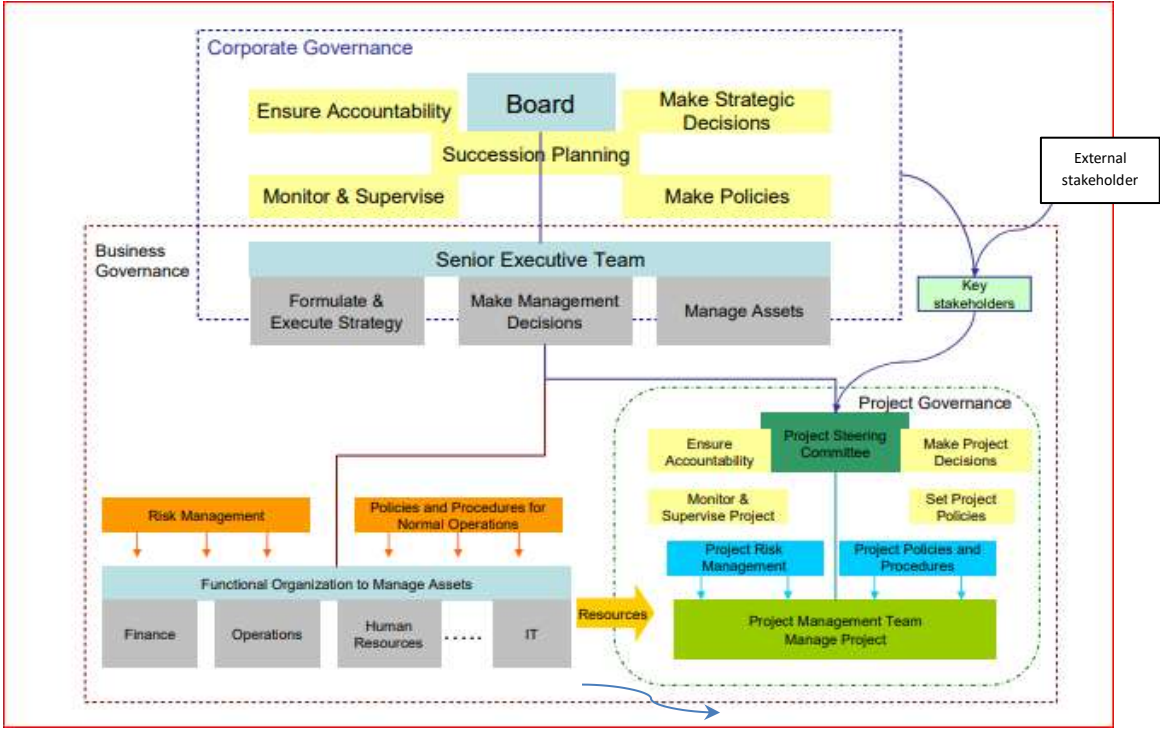


Figure 6: Formation of a project governance structure: (Aon, 2011)

Aon (2011) formation of a project governance structure is well explained by Holst-Volden and Andersen (2017) who assert that a project governance structure is established by the highest management structure of the organization, e.g. the board and executive management and it sets the context within which projects are implemented..

In this system, governance is enacted at board level, executive level and at project level. Adequate feedback of information from various levels would influence decision making and course of action for the project.

2.12 Characteristics of a good project governance structure.

In their paper, Abednego and Ogunlana (2006) proposed a set of characteristics they deem good for a project governance structure:

- **Fairness**

The authors propose that a well constituted governance structure would treat all stakeholders in an unbiased and fair manner in order to create value for all stakeholders and to avoid overcompensating for the views and the needs of certain stakeholders due to their perceived importance, power and interest. Fairness also means managing the stakeholder expectations while applying governance laws consistently to all stakeholders.

- **Relationship management**

The organization is part of a larger social body and is affected by the factors in the business environment and by other players. These factors may affect project execution thus the need for the governance structure to have the ability to mediate relationships between stakeholders as well as monitor and control project execution. This is to also make sure that the stakeholders that do not benefit from the project are not disadvantaged by the project.

- **Decision making**

Availability of information fosters timely decision making which would allow active participation of members of the structure and timeous implementation of the decisions made by the governance structure. Delayed decision making translates to delays in project construction and cost escalations.

- **Contract management**

The project governance structure acts on behalf of the broader organizational authority thus needs practice impartiality and transparency and promote fairness in project contracts using applicable legislation in order not to place the organization in disrepute.

- **Resource utilization**

A good governance structure would utilize financial, human, and natural resources in an effective, efficient and sustainable manner.

2.13 An example of a typical project governance framework

Various institutions are used by organizations to solve the project governance problem. Müller, et al. (2013) explain that some organizations use project management offices, project advisory groups or project steering committees.

The project governance fundamentals defined by O'Leary (2012); Crawford and Cooke-Davies (2006), APM (2004) are synonymous with those found in project governance framework proposed by Bekker and Steyn (2009). From their Delphi study Bekker and Steyn proposed a project governance framework that can be applied and refined to suit various industries. The framework was derived from and mirrors a corporate governance framework which is the foundation of project governance. Abednego and Ogunlana (2006) support the incorporation of aspects of good corporate governance into project governance and the organization's project management approach.

The Bekker and Steyn (2009) framework explicitly outlines the detail required for each fundamental principle of project governance such as those stated by Crawford and Cooke-Davies (2006); O'Leary (2012) and Klakegg, et al. (2008). The Bekker and Steyn framework demarcates decision making bodies, the core competencies required by the decision making bodies and role and responsibilities of such bodies. The steering committee and the strategic committee are examples of decision making bodies that will be delegated to make project decisions. Further; the Bekker and Steyn outline the probable size as well as member composition of the governance structure and illuminates the importance of the independence of the chairperson of the different governance structures in the case of public funded projects.

A typical project governance framework would consist of:

- **A strategic committee**

The members of this committee are largely top members of the organization. The committee is responsible for selecting mission critical projects, advocate for, lobby and approve financing for these projects. In the case of mandatory projects, the committee responsibility shifts from selection decision, the go/ no- go decision to how to manage the project in such a way that it meets the minimum standards with the lowest possible risk for the organization that is 'maximizing the returns on investment and maximizing the probability and results of positive events'. Nicholas and Steyn (2012) outline the role

of the committee such as that it advocates, lobbies, secures and approves the project and or programme financing. The committee further has a role of monitoring and ensuring a social, political and economic environment for the organization's projects.

- **A project steering committee**

Muller (2009) describes the steering committee as the principal entity of project governance. The steering committee is the interface mechanism between the corporate governance structure and the project organization. The project governance structure is only as strong as its steering committee. To be effective; the steering committee needs to have candidates who understand the project. A weak understanding of the project will lead to lack of authority and poor decision making. APM (2004) discusses that members delegated to bodies that hold authority need to have sufficient representation, competences, and resources to make timeous decisions. Nicholas and Steyn (2012) differentiate the roles of strategic committee from the steering committee and state that while the strategic committee focuses on doing the right projects, the steering committee is to make sure that the selected projects are done right.

- **Core competencies of the project steering committee**

Bekker and Steyn (2009) list core competencies required for the members of the steering committee, for instance that they need to be project finance and cost management competent. They need to have the ability to develop project scope. Since projects involve risk, project steering committee members need to be competent in risk assessment and be able to respond to crises. Soft skills such as leadership skills, emotional intelligence, communication skills are important skills hence projects are implemented by people and will influence the level of rapport and cohesiveness between team members responsible for the project. Other competencies listed by Bekker and Steyn (2009) include strategic alignment capabilities, contract management capabilities and understanding of social and environmental requirements in which the project will be implemented and used as well as the legal requirements are significant competencies which are thought to have a strong correlation to project success.

- **Size of the steering committee**

According to Bekker and Steyn (2009) the steering committee size is determined by the project type, its size and the consequent complexity. Depending on the size of the project, various sub committees may be formed to support the main project committee e.g. a sub-committees for control of costs, environmental issues committee, societal economic committees.

- **Member make-up of the steering committee**

Committee should be composed of a project sponsor, project owner and project manager as mandatory members. Finance and legal representatives if they have a role to play could be co-opted into the steering committee. Bekker and Steyn (2009) assert that in the case of government projects, the steering committee chairperson should be independent. It is advised that the committee should not be clogged by too many stakeholders as this will lead to a laborious decision making process.

- **Responsibilities of the steering committee**

The steering committee petitions for finance resources of the project. It establishes authority in the project organization. A major role of the steering committee interpreted by Bekker and Steyn (2009) is that it takes an overall accountability for the project and all the project decisions. The steering committee connects the project organization with the corporate organization as well as between project and statutory environment according to Nicholas and Steyn (2012). It functions to promote stakeholder engagement according to their power and interests in the project. The committee is also responsible for the development of the project charter and that the project organization adheres to the charter and the overall policies that govern it. The role and responsibility of the steering committee can be summarized into decision making, communication and consolidation role as well as negotiation role.

- **Cost & benefits management; risk management function.**

Bekker and Steyn (2009) proposes that the cost and benefit management function be performed by the steering committee. It can be inferred that the steering committee has a responsibility to report the project's financial status against the approved budget and make disclosure regarding any other financial undertakings outside of the approved

project requirements. The Bekker and Steyn framework also encompasses an element of risk management. Accordingly, a risk management process should be in place with the steering committee playing a major role in ensuring that risk is properly identified, quantified and mitigated on all aspects of the project including the project's financial and quality aspects.

- **Project reviews and audit function**

Bekker and Steyn (2009) stress the importance of the independence of the project audit and review committee. The authors confer that the function should be performed by individuals who have no interest or influence on the project. While it is expected that the audit and review will look into how well the project organization followed the organization's project management practices; Bekker and Steyn (2009) cite that the review and audit items should include items that are of stakeholder nature; that is those that protect the interest of stakeholders. While this may be regarded as one of the roles of the steering committee, Prince2 methodology asserts that this role may be delegated to a sub-committee according to PWC (2018).

- **Ethical behaviour, responsible conduct, conflict of interest and health & safety guidelines**

Bekker and Steyn (2009) propose that a code governing ethical conduct should be in place and that all members of the steering committee should adhere to and be signatories of the code. The code should govern the conduct towards environmental aspects, social aspects, socio-economic aspects, health and safety standards as well as conflict of interest guidelines.

2.14 Relationship between the governance of projects and success of projects

In section 2.1, critical success factors (CSF's) were discussed. It was stated that project management literature delimits (CSF's) as variables that can have an important impact on the project success when they are properly managed. A myriad of these factors have been generated e.g. the Pinto, (2004) CSF list. Researchers believe that the critical success factors are interdependent constructs that complement each other and without systematic structure, context and grouping, the critical success factors could result in increased risk, lowering the posited success rate of the projects. Garland (2009) considers project governance a critical success factor in project execution.

Four categories of CSFs were thus categorized by Belassi and Tukel (1996) e.g.: factors linked to the 1. Project 2. the team members and project management 3. the organization and 4. the exterior environment. In this context project governance is seen as a project management factor. Too and Weaver (2014) agree that project governance is to steer the project management function of an organization. This view is supported by an argument put forward by Pinto (2004) who asserted that governance provides a framework through which projects are executed.

In order for a project to be successful; the factors linked to the four categories discussed by Belassi and Tukel (1996) need to be in sync. This means that the success of the project relies on harmonizing and engaging stakeholders, controlling the project implementation processes and managing external factors.

In their study, Zwikael and Smyrk (2015) found that project governance provides a framework which enables the accountable parties to achieve the objectives set in the business case of the project. In their paper Abednego and Ogunlana (2006) concluded that due to the likely improved risk control and timely decision which result from good project governance, prospects of success of the projects are improved. Similarly, Too and Weaver (2014) argue that poor or non-existent project governance lead to poor decision making and an inflexible system, which is unable to respond to changes caused by factors in the external business environment which affect the project.

2.15 Application of a governance mechanism during the course of the project

Through its life cycle, a project goes through various stages and governance activities need to be asserted at the various stages of the project lifecycle. Figure 7 below is an illustration of the project activities and the governance actions that need to be undertaken at each stage of the project. PMI (2013) propositions that in its oversight function; the model used to govern projects should be brought into line with the lifecycle of a project with the aim of developing a consistent method for controlling project that will lead to repeatable project practices.

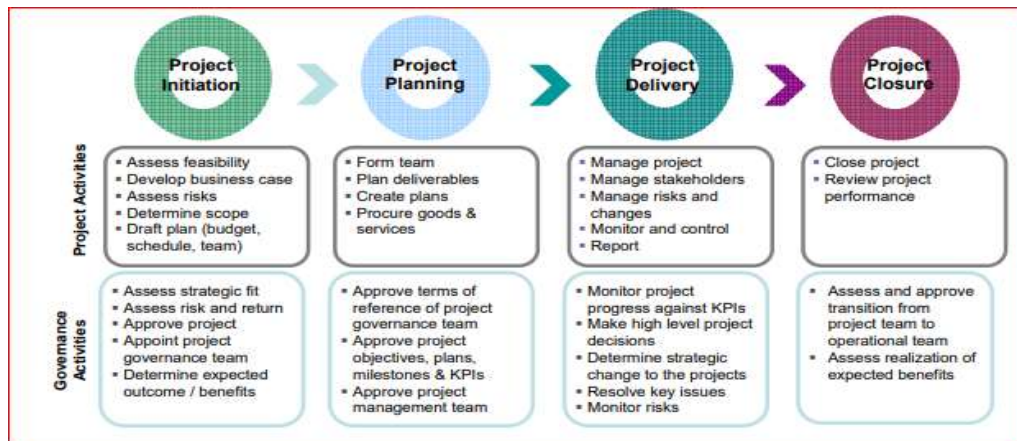


Figure 7: Governance mechanism during the course of the project (PMI, 2013)

From the illustration in figure 7, it can be concluded that different levels of the governance structure perform the various governance functions throughout the project lifecycle. During the initiation phase of the project for instance where a project feasibility study is carried out, governance will be performed at the strategic committee level, which is responsible for assessing the strategic fit, approve/ disapprove of the project and determine the expected benefits versus the cost to the organization. The strategic committee will also establish second level governance structure, the steering committee. At the project planning phase, the steering committee and the various sub committees will perform the governance function. At this level, project delivery processes are planned. This phase involves the planning of deliverables, procurement of goods and services, setting up communication plans and risk management plans. Serious problems which cannot be solved at this level will be escalated to the strategic committee.

2.16 Chapter conclusion

Various lenses are used in literature to define project success. A myriad of factors are thought to be critical success factors for projects. Project governance has been defined as one of the critical success factors for projects. Project governance is rooted in corporate governance and is explained using various theories such as transaction cost economics, stewardship theory, and agency theory. Project governance thus involves an integration of various forms of governance such as governance of relationships, contractual governance and transactional governance. Project governance mechanism provides an opportunity to seamlessly deliver a project by synchronizing the

performance of various roles and responsibilities by the various management levels of an organization within the boundaries of corporate governance.

Different theoretical frameworks offer alternatives for organizations that want to entrench a successful governance framework. The model provided by Bekker and Steyn is an example of a framework that can be applied and adjusted to suit various projects in various industries. The framework provides a mechanism through which project management processes can be monitored so that corrective action can be applied to for strategic alignment of projects and to bring projects which are fouling required standards back on course. The theory outlined has laid a foundation for investigating the role of project governance in the success of projects.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

In order to address the research question and the research aims outlined in chapter one, namely to examine the extent to which PRASA entrenches a project governance framework and to establish the challenges to implementing an effective project governance framework at PRASA; an appropriate research method had to be employed.

This chapter focuses on the research design and methodology used to carry out the research. The research question is revisited to motivate why a qualitative research method was followed and a single case study was chosen. This is followed by a discussion on the sampling approach, data analysis method applied and ethical considerations.

3.2 Philosophical grounding

Research is shaped by human reasoning. A researcher can be seen as following a particular belief system and philosophical worldview referred to as paradigms in research by MacNaughton et al. (2001). The philosophical worldview is influenced by the researcher's underlying assumptions about reality and the development of knowledge. Two such philosophical assumptions are identified as positivism and interpretivism paradigms. Two differing beliefs about the world explain the difference between interpretivism and positivism.

Thomas (2003) differentiate between the two paradigms and state that while a positivist approach believes that there is only one objective real world, that is; there is one reality, the interpretivist believe that reality is socially constructed and is subjective. Adding his views, Rahma (2017) defines a positivist paradigm as one in which reality is seen as being concrete and unchangeable and can be quantified objectively. An interpretivist researcher views reality as consisting of subjective experiences of people and how they perceive the world and that there is no sole correct path to knowledge. This means that an interpretivist approach lends itself to a qualitative research design which boils down to findings that are subjective based on the understanding of contexts and through perceptions and experiences of people.

This research is based on a view that the world is a human experience. According to this view, knowledge is socially constructed through human interactions. The research therefore follows the interpretivism paradigm as it values different human views and varying human experiences. The researcher believes in the value of answering a study question not just by using rigid formats but by approaching reality from people who own their experiences and through their perceptions. The researcher approached the study by providing contextual depth of the phenomenon under study and produced an understanding of the context.

Table 2 below is a summary of the foundations of interpretivism according to Cantrell (2001) as cited by Adendorff (2004).

Ontology : indicates worldview of the researcher	
<ul style="list-style-type: none"> • Ontological position 	<ul style="list-style-type: none"> • There are multiple realities • Reality can be explored and constructed through human interactions and their meaningful actions • Knowledge is socially constructed through interactions, daily routines, conversations with other people in their natural settings.
Epistemology: is the general beliefs and assumptions the researcher holds about the nature of knowledge; how knowledge is developed as well how as what accepted or valid knowledge entails.	
<ul style="list-style-type: none"> • Epistemological position 	<ul style="list-style-type: none"> • The researcher assumes role of an empathetic observer. Those active in the research process socially construct knowledge by experiencing the real life or natural settings. • The researcher and the research participants are interconnected in an interactive process of talking and listening, reading and writing. • Interactive process culminates in personal and interactive data collection techniques.
Methodology is the various ways in which knowledge is created and evaluated by the different world views.	
<ul style="list-style-type: none"> • Methodology 	<ul style="list-style-type: none"> • Data collection is in a qualitative form. • Data collection uses interactional techniques such as interviews, surveys and reflective sessions. • Research is a product of the values of the researcher.

Table 2: Characteristics of interpretivism paradigm: Cantrell (2001) as cited by (Adendorff, 2004)

3.3 Research methodology

3.3.1 Overview

Qualitative and quantitative research methodologies are believed to be representative of the two research paradigms. Quantitative research is representative of positivist approach while qualitative research is the underlying structure of the interpretivist approach. Thomas (2003) agrees with this assertion and believes that interpretivist researchers tend to support qualitative methods of study. Hancock, et al. (2007) summarizes the differences between qualitative and quantitative research methodologies as follows:

Qualitative research	Quantitative research
<ul style="list-style-type: none"> ● Focuses on how people hold different views of what constitutes reality 	<ul style="list-style-type: none"> ● Generates numerical data and hard facts to quantify the problem and employs statistical and mathematical techniques to arrive at a conclusion
<ul style="list-style-type: none"> ● Studies behaviour in natural settings or uses people's accounts as data; usually no manipulation of variables 	<ul style="list-style-type: none"> ● Uses measurable data; manipulates some of the variables while other variables such as confounding and extraneous variables are held constant to uncover patterns.
<ul style="list-style-type: none"> ● Focuses and reports on experiences or on data which cannot be adequately expressed numerically. 	<ul style="list-style-type: none"> ● Uses statistical techniques that to conclude how likely true a phenomenon is for a given population in an objective and measurable sense.
<ul style="list-style-type: none"> ● Focused on descriptive and interpretative process of the phenomenon which leads to new concept development or theory development, or to an evaluation of an organisational process 	<ul style="list-style-type: none"> ● Uses experimentation to prove or disprove a hypothesis, focuses on cause effect relationships
<ul style="list-style-type: none"> ● Employs a flexible, emergent but systematic research process 	<ul style="list-style-type: none"> ● Requires the research process to be defined in advance

Table 3: Differences between qualitative and quantitative research approaches: (Hancock, et al., 2007)

Citing the works of Strauss and Corbin (1990); Rahma (2017) discussed that qualitative research produced findings without the use of statistical methods or other means of quantification. The methodology focuses on people's lives, their experiences, behaviours, attitudes and outlooks. Further, Rahma explains that the methodology is used to study cultural phenomena, social movements, organizational functioning and interfaces between populations.

In its nature, qualitative approach is a non-experimental method which does not directly test linear cause -effect relationship according to Hancock et al. (2007). The approach is explained by Astalin (2013) as largely narrative and allows the exploration of phenomena in the context in which they occur using a variety of data sources. Astalin further describes the methodology as systematic scientific enquiry which seeks to build a rounded, generally narrative description of the phenomenon. Merriam (2009) explains that the approach asks the what, how and why questions which would lead to the collection of data that involves collecting, organizing, describing, and interpretation of qualitative data which would mostly be verbal, visual or textual data. The methodology thus describes and interprets the phenomena and can be used to develop theory or evaluate an organizational process. Flyvbjerg (2011) explains that the word phenomenon is used to denote the 'case' under investigation which could be events, situations, organizations, programs etc.

3.3.2 Qualitative research approach

A qualitative study concerns itself with the context of the phenomenon the processes involved as well as how these are interpreted and understood through inductive reasoning explains Yilmaz (2013). Reasoning is when we use existing knowledge to make predictions, draw conclusions or use that knowledge to form an explanation for a phenomenon. The qualitative methodology lends itself to inductive reasoning whose goal is to gain deeper understanding and experience of a phenomenon from the perspective of the research participants according to Merriam (2009).

Inductive reasoning uses observations which may be limited in scope to make generalizing arguments and conclusions and is often associated with qualitative research methodology. Figure 8 summarizes Trochim and Donnelly (2008) inductive reasoning as follows:



Figure 8: Schematic representation of inductive reasoning; adapted from (Trochim & Donnelly, 2008)

Yin, 2003 explains that while inductive reasoning may not lead to a certain and absolute conclusion, it does increase human knowledge.

3.4 Research design

Yin (2003) describes a research design as means and techniques the researcher uses to collect data that will allow him to draw conclusions regarding the study question. It is a strategy to be followed to carry out the research including data collection methods to be executed to maximize the validity of research findings. Different research methodologies require the use of different practices and skills. This research followed a qualitative methodology. This methodology was chosen for this research because it allowed the researcher to examine the relationships within a system.

The design of this research case is descriptive and explanatory in nature. Yin (2003) clarifies that the explanatory case study method would be used if the researcher seeks to explain assumed causative relations in complex real life phenomena; whose complexity causes them to be hard to explain using surveys or other experimental approaches. Rowley (2002) makes this important observation about descriptive and explanatory case studies:

“Descriptive and explanatory studies need propositions. Research questions need to be translated into propositions. The researcher has to make a speculation, on the basis of the literature and any other earlier evidence as to what they expect the findings of the research to be. The data collection and analysis can then be structured in order to support or refute the research propositions”

This means that the results of the case study research should be a rich explanation of the phenomenon under investigation. The research makes use of a single case study method to encapsulate factors that affect the implementation of a successful project

governance framework at PRASA. In accordance with assertions made by Rowley (2002), the study was executed as follows:

- Literature review was conducted to address the theoretical underpinnings and importance of project governance. Further; the literature study identified and categorized themes related to the project governance and project success phenomenon. The research looked for patterns and ideas rather than testing or confirming hypotheses.
- The analysis and interpretative discussion of the outcomes of data collected was carried out by expounding on:
 - Characteristics as well as the nature of the project governance framework that currently exists at PRASA using the descriptive technique. The project governance phenomenon at PRASA was analysed and interpreted against the Bekker and Steyn (2009) theoretical framework.
 - Enablers of project governance.
 - Limitations in the PRASA project governance framework.
 - Challenges to implementing effective project governance.
 - Recommendations on how to improve the governance mechanism and its application.
- Lastly, a summary of concluding remarks.

3.5 Research question revisited

The purpose of this research report is to answer the research questions: What are the challenges to implementing an effective project governance framework at PRASA? An underlying philosophical belief system and the methods used to carry out a research process are the foundations that underpin and guide a research study. This study follows a descriptive and explanatory qualitative approach and falls within the interpretivism paradigm. The research design and methodology used in this research is summarized in figure 9 below.

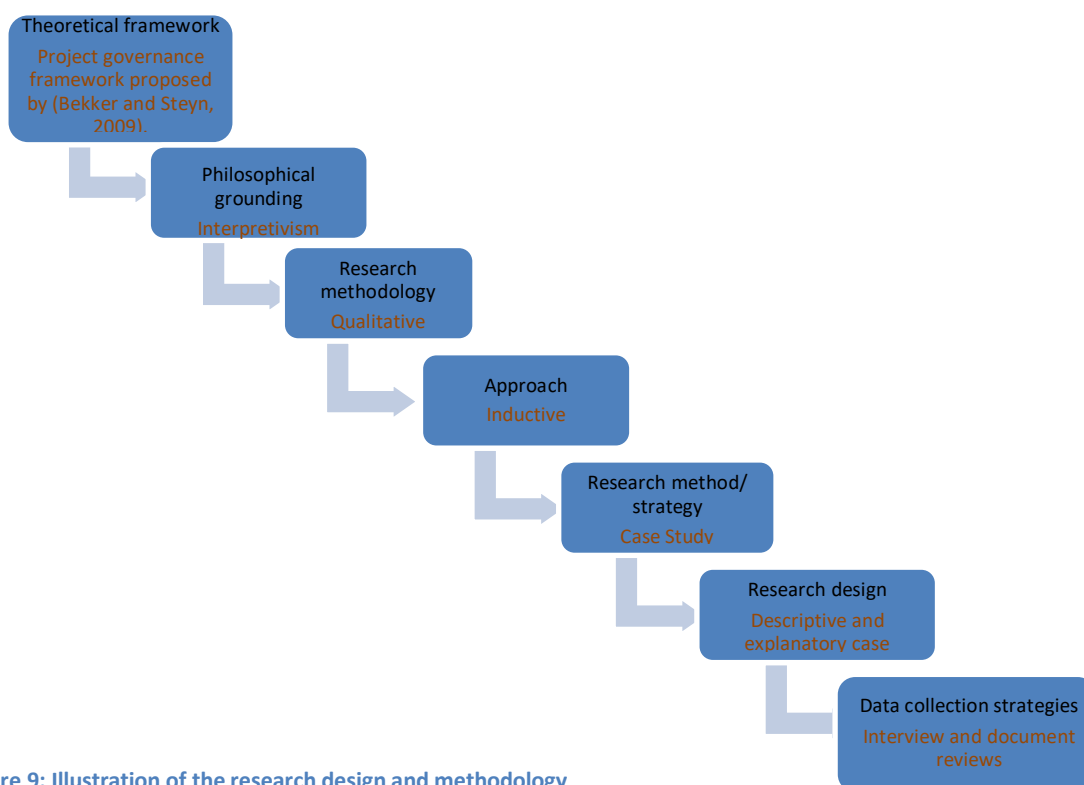


Figure 9: Illustration of the research design and methodology

3.6 Case study method

Flyvbjerg (2011) defines the case study method as a qualitative form of inquiry which studies the characteristics of a real-life phenomenon. Flyvbjerg's definition of a case study is echoed by Yin (2003) who contends that it is a method of enquiry that is used to investigate a phenomenon in the context within which it exists. Merriam (2009) describes the method as being rigorous and a complete description and analysis of a system such as the case under study. A case under study could be a person, an institution, a process, a program, a social unit according to Merriam (2009).

Yin (2003) puts forward that a case study investigation relies on several sources of evidence and should be used when the researcher deliberately wants to study the context of the phenomenon. Merriman (2009) clarifies that case studies are chosen by researchers who have an interest in discovering the phenomenon; understanding it and interpreting it rather than hypothesizing about the phenomenon and then testing what was hypothesized.

Starman (2013) explains that case studies provide a comprehensive description of the characterization of the case under investigation. According to Starman, case studies

enable the researcher to observe a variety of variables influencing the phenomenon under study and inductively observe any unexpected operation of the phenomenon or the conditions that are present that activate the causality.

Qualitative research gathers data using procedures such as surveying a chosen population, interviewing research participants, case study and other methods which are thought to be personal techniques explains van-Zyl (2014). The case study method was selected as the research strategy. The researcher chose this strategy because the researcher's question was "what is happening and what has happened"? The method offered the researcher the opportunity to study the phenomenon in its natural setting which would allow collection of data in natural setting and in which the context was well understood. The method provided rich descriptions and insightful explanations of what happened to answer the research question. The researcher took on an interactive role as she got to know the participants and their social context; this aided in bringing the researcher closer to the research participant while building rapport with them. The method further allowed the researcher to collect archival data by studying project documents and present own deliberate interpretation of what had happened.

3.7 Benefits and limitations of using the case study method

Yin (2003) explains that since the method uses small data sets such as limited number of subjects, generalization cannot be made about similar settings because a case study forms very little basis for scientific generalisation. On the positive side, although qualitative studies involve a relatively small number of research participants or settings, it focuses on building an in-depth picture of the problem.

Yin (2003) notes that case study researchers tend to impose their own views leading to researcher bias. Researcher bias will lead to a biased design of the study, biased data collection and consequently distorted findings and conclusions. A further weakness of the case study research method according to Starman (2013) is that the research participants may not be a true representation of a larger population group. In the context of this case, the Western Cape project operations may not be representative of the processes and procedures of the whole PRASA group of companies.

Cited as an additional benefit of using this method Yin (2003) is that the data is examined within the context in which it exists rather than being isolated to focus on a few number of variables. The results of a case study research do not only help to

explain qualitative data in its context but also explains the intricacies of real life situations which other forms of research such as surveys and experiments could not explain.

3.8 Unit of analysis

The unit of analysis can also be referred to as the case according to Baxter and Jack (2008) as well as Bhattacharjee (2012). Miles *et al.* (1994) defined the case as “*a phenomenon of some sort occurring in a bounded context*”. Miles *et al.* noted that in an effort to assist researchers in defining their case or unit of analysis, the following questions should be answered: “*do I want to analyse the individual, the program, the process or the difference between organisations?*” Answering these questions and discussions with colleagues or in this case, the research supervisor is an effective recognised strategy to delineate the case based on the assertions of Miles *et al.* (1994) as well as Baxter and Jack (2008).

The unit of analysis in this report is an organizational process; the implementation of project governance mechanism at PRASA.

3.9 Data collection strategy

To address the analytical aspects of the research, a qualitative case study approach using data collecting tools such as interviews, document reviews and observations were used.

Based on specific observations documented in studies made by researchers who have written extensively about the relationship between project governance and project success such as Khan (2012), Lechler and Dvir (2010), Bekker and Steyn (2009), Müller *et al.* (2013), Crawford and Cooke-Davies (2006), an inductive inference was made about the relationship between project governance and project success. The inductive inference made was that project governance has a positive effect on project success and therefore the research argues that a well-entrenched project governance framework at PRASA may positively contribute to the success of the organization’s projects in the context of political, economic, social and organizational factors. Thus, the insight gained about the research context and the research question regarding the challenges to implementing an effective project governance framework at PRASA was expounded.

3.9.1 Data Sampling Strategy

Data collection is an important part of the research process. The quality of the data collected will determine how the researcher conceptualizes the data and transform it into meaningful findings.

- **Sampling design**

The selection of respondents followed a non-probability sampling approach which did not give the probability of all respondents in the research population to be selected. The aim was to arrive at a purposive sample which would be knowledgeable and appropriate for the study. Choosing the right respondents is important in order to increase the reliability of the results. To initiate the sampling procedure; a project manager was approached to generate a potential list of respondents. The project manager was approached because he had better knowledge of people who worked with projects and the projects they were responsible for which would be appropriate to answer the research question. The identified respondent further recruited more respondents for the researcher. Five of the respondents were male and one was female all ranging from the ages 30- 50. The work experiences of interviewees ranged from 5 years to 15 years at PRASA. The choice of respondents was critical to increase the validity of results and reliability of the research. The respondents needed to have the right knowledge and experience in order to respond to the interview.

Although the technique benefited the overall research, it was not without limitations. Firstly, the sampling method resulted in a sample that could not be generalized to the target population of the research. Secondly, the technique can be considered biased in that the initial approached project manager in turn approached recommended respondents based on his perceptions of who he deemed appropriate. Lastly the responses may be considered highly subjective as each individual respondent was encouraged to share their own views.

3.9.2 Data collection technique

Face to face interviews were conducted with the selected respondents based on standard questions formulated to cover project governance mechanisms at PRASA. The questionnaire was shared with the interviewees before the interview was held. This was to help them prepare themselves and to make the interview effective. The respondents were very fearful of participating in the research even after signing the consent forms with the researcher as far as possible assuring them of their anonymity. The respondents were worried that their response could get them into trouble with the employer as the research dealt with governance issues which the respondents felt the organization was experiencing alarming decay in governance.

The researcher was mindful to follow careful interview process that did not infringe on the subject's private life by asking questions that are insensitive or going beyond the scope of agreed time, as such rigorous ethical considerations were made. The researcher sought to listen and make considerations and build rapport and established an atmosphere where the respondents felt more freely to express themselves. Handwritten notes and voice recordings were used to collect data during the interview. In total 6 semi-structured interviews were carried out. The interviews yielded word based accounts of the understanding of project governance.

- **Interviews**

Face to face in-depth interviews unmasked qualitative data, which enabled the understanding of the project governance phenomenon within the PRASA context. Interviews were chosen as the data collection method because they enable the researcher to gather detailed information about the phenomenon under investigation. Secondly, interviews enabled the researcher to adapt questions and improvise to suit different people such as shy or fatigued research participants while exploring their experiences, beliefs and feelings.

The interviews were semi-structured in nature. Yin (2003) believes that semi-structured interviews are tools that assist the researcher to gain insight into research respondent's perceptions, experiences, feelings and attitudes about the reality of the phenomenon under study. Semi-structured interviews possess features of both structured and unstructured interviews according to Merriam (2009). While unstructured interviews do not have a set of answers and rely on social interaction and allow the interviewee to

focus on the aspects he believes are important; structured interviews use a predetermined set of core questions and lead the interviewee to provide information that is specific and pertinent to the research question. The semi-structured format allowed the interviewer to ask questions but has the advantage of the free will to elaborate and provide clarity on some of the answers by the interviewee if they so wish. Interview questions were selected from each theme discussed in literature review.

Yin (2003) explains that a researcher must choose respondents that will help him answer the research question. In this regard, it became important to include individuals whose work involves implementing projects at PRASA, who are assumed to be conversant with techniques, processes and mechanisms used to deliver the company's projects. This did not require individuals to have held an employee position of project manager. Any employee who had as part of their job function, responsibility, or role to manage projects was eligible.

The interviews sought to elicit responses relating to the project governance mechanism at PRASA. Since the objects of the study were few, the researcher chose not to use software analysis methods. The interviews were transcribed in two steps, first the interview was recorded and the researcher focussed on the discussion with the respondent. After the interview, the researcher listened to the recorded conversation and transcribed the answers. The answers were not transcribed verbatim but the researcher focussed on the key issues relevant to the research topic.

- **Document reviews**

Secondary data is an information set that has been collected by others and would have been collected for other purposes other than the research project at hand explains Cowton (1998). Cowton argues that due to their unobtrusive nature, secondary datasets may present positive attributes that are highly attractive when compared to interviews and questionnaires. Bias which tends to be introduced in the interview process and the tendency to alter behaviour by research respondents are cited as an example of a less attractive trait of interviews. These data sets may include company documents, public reports, press reports, government reports, archives etc. Six completed projects within the Western Cape region of PRASA corporate real estate solutions were selected as case data for the research.

3.10 Data analysis

According to Yin (2003), data analysis incorporates examination, categorisation, testing or otherwise recombining evidence to support or disprove the original proposition. A number of methods are available to analyse the data with thematic data analysis being one of the more popular methods used in qualitative research.

Thematic analysis has been described in 6 steps by Braun et al. (2018). These steps were followed for this research report:

Step 1: Familiarising with the data

The researcher after transcribing the interview recordings read the transcripts numerous times to check their authenticity. The interview data was organized question by question e.g. all responses to the same questions were grouped together to facilitate the development of themes.

Step 2: Generating initial codes

The sources of data for each response were labelled, e.g. Respondent 1 (RS 01). The researcher starts to code similar topics by highlighting text in same colour on each respondent's transcript to form initial high level themes.

Step 3: Searching for themes

Braun and Clarke (2006) consider a theme to be a key idea or something significant about data in relation to the research question and represents some level of patterned meaning or response of the data set. The researcher reviews coded information to identify common themes.

Step 4: reviewing potential themes

The researcher grouped responses that were related to each other through their content; i.e. the content that belonged together in relation the research question. It is through this categorization process that themes were identified. The researcher chose a more objective approach to data, by focussing on the intensity of comments, observable and tangible responses as well as spoken words rather than abstract and hidden meanings. This technique is called manifest content analysis by Bengtson (2016). The manifest content analysis meant that the researcher would use the

respondent's words and quotes to explain what the respondents actually said and to stay true and close to the original meanings and text.

Step 5: Defining and naming Themes

Unique and specific themes from the data that could clearly be stated were identified in this step. These themes had a singular focus, were related but did not overlap and were directly related to the research question,

Step 6: Producing the report

Yin (2003) suggests various methods of case study reporting. The traditional narrative "story telling" or a "question and answer" format. This report uses the "story telling" format to report the findings from the case study interviews.

The researcher reports the findings of the interview by first expanding on the theme followed by a discussion of the responses from the interviewees. 5 Themes emerged from the interview data.

List of respondents

- Respondent 1 - RS 01
- Respondent 2 - RS 02
- Respondent 3 - RS 03
- Respondent 4 - RS 04
- Respondent 5 - RS 05
- Respondent 6 - RS 06

3.11 Validity and reliability

Patton (2002) puts forward that a researcher should be concerned about the validity and reliability when designing a research study. Sound research should be free of bias and distortion and should lead to defensible and credible results.

- **Reliability**

Researchers use the words dependability and consistency of the research process and the product of research to illustrate the reliability of research explains Patton (2002). Reliable research will yield consistent data within acceptable degree of human induced error when the research process is verified through data verification of raw data at more than one point in time. Reliability indicates the accuracy of the measuring instrument. This means that the research instrument would yield the same results if the research is repeated. Reliability of this research was strengthened by using different data collecting methods e.g. interviews and review of completed project documents. Further the researcher was consistent in the manner in which she carried out the interviews and analysing the data.

- **Validity**

Validity is the trustworthiness or credibility of the research. Maxwell (2002) explains that validity testing seeks to establish whether the research study reflects what it aimed to investigate. Further, validity assesses whether the strategies and instruments used to collect data do in fact measure what they are intended to; that is yield data which represents reality. Quality and rigour of the research process increases the validity of a research study. Validity of the research was strengthened by giving the interview questions to someone not involved and had no influence in the research to identify problematic questions that might have been leading, confusing, lengthy, and suggestive in nature. Taking notes during the interview process was another measure used to strengthen the research. Further, the respondents were given an opportunity to clarify points they have made to minimize bias and misperceptions of what the respondent has said.

3.12 Assumptions

The study assumed that the interviews have experience and knowledge of PRASA projects and therefore are conversant with the project governance framework and its application in the organization. Secondly, it was assumed that interviewees would be able to take time off from their work constraints to sit for the interviews. It was further assumed that the interviewees were willing to provide correct and truthful answers as anonymity and confidentiality was preserved as such the research participants could

withdraw from the study at any point in time should they wish to. Lastly, it was assumed that the interviewees would answer all questions in English.

3.13 Ethical considerations

To ensure the highest ethical standards were adhered to; an application for ethical clearance was made to the Faculty of Engineering and the Built Environment (EBE) of the University of Cape Town before any data was collected or analysed. The application consisted of a signed ethics application form, a research proposal, interview questions, information sheet as well as research consent form.

Since data was obtained from human subjects; a letter to obtain informed consent of data sources, ensuring the anonymity of respondents as well as storing sensitive information was given to the research participants. Informed consent meant that the participants would voluntarily provide adequate information, understood what was required of them and would be able to respond to all questions put to them to the best of their capability. To address ethical aspects of the use of secondary data sets by using PRASA documents, permission to use company documents was obtained from PRASA and provided in the form of a written document.

A meeting was set up with the research participants where the aims of the research were explained. They were then allowed to ask clarity questions before voluntarily signing the consent forms. Actual names of the research interviewees would not be published in the research report to ensure anonymity and confidentiality.

3.14 Chapter conclusion

The research is based on the view that knowledge is subjective, personal and unique. The researcher understood the social world using own judgement and prejudices as well as through the eyes of his research participants. The researcher followed an interpretivist approach which emphasises a close relationship between the researcher and the social world. This belief system became the foundation for choosing a qualitative form of inquiry. The data collection processes, data analysis and data interpretation techniques chosen by the researcher were informed by this belief system. The overview of the research design is highlighted in figure 8.

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

The research was conducted using a qualitative case study method with semi-structured interviews of key project stakeholders. Additional case data was gathered by reviewing project files of construction projects mainly station modernisation and station precinct development projects. This chapter describes the interview findings as well as findings from project files. The findings were used to highlight the main themes that emerged from the data analysis. The chapter concludes by discussing the themes identified in chapter three with the key findings.

4.2 Background to the case study

PRASA is used as a case to study the project governance phenomenon. While PRASA is a large organization with various entities under its banner, the study is focussed on selected projects run by the Western Cape region of PRASA corporate real estate solutions (PRASA CRES).

- **PRASA organizational structure**

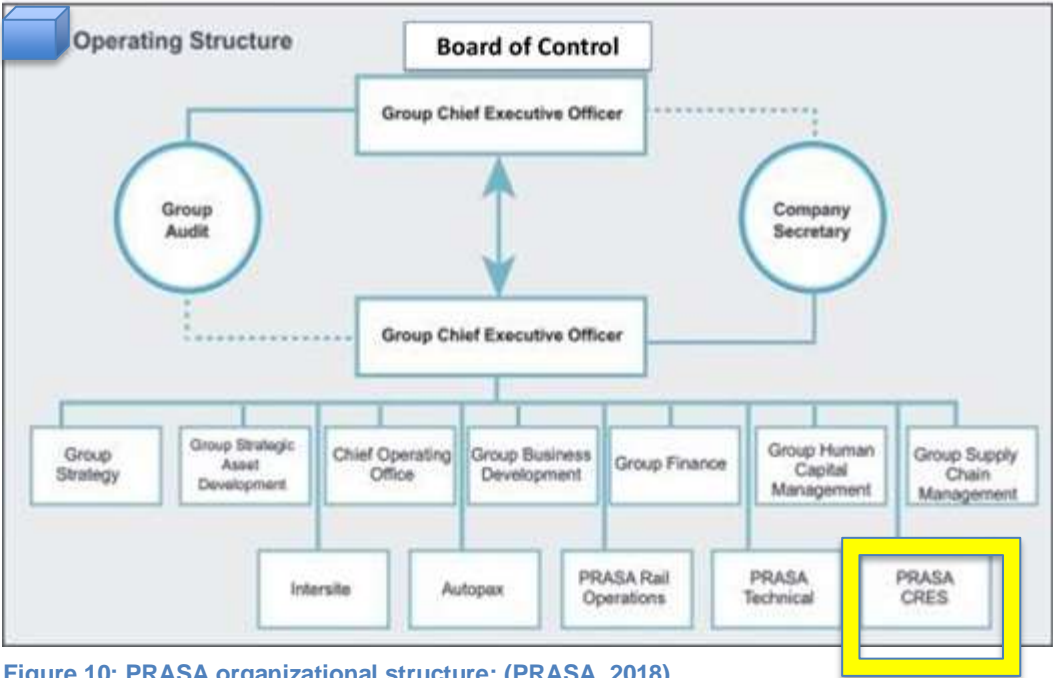


Figure 10: PRASA organizational structure: (PRASA, 2018)

PRASA CRES is a division of the Passenger Rail Agency of South Africa (PRASA). Established in 2010, this division was established and tasked with managing PRASA's property portfolio.

PRASA CRES core services include:

- Facilities management
- Real estate management
- Utilities management
- Strategic portfolio projects management

The four regional offices (Gauteng South, Gauteng North, Kwazulu Natal and Western Cape) implement most of the programmes whilst PRASA CRES Head office provides leadership and guidance in the delivery of services through coordinated and integrated planning with various stakeholders. PRASA CRES head office further develops policies and strategies to create an enabling environment and ensure effective and efficient provisioning and management of services.

4.3 Presentation of data findings

The responses are discussed under 5 themes:

- Definition, characterization and functions of a project governance mechanism
- Enablers of project governance
- Application of the governance mechanism and structures
- Challenges to the application of governance mechanism
- Project governance and project success

THEME 1: Definition, characterization and functions of the project governance framework.

Definition and functions: all 6 respondents were familiar with the concept of project governance and defined it by using words such as processes, policies, methods, structures that ensure that projects produce the desired results. Three of the respondents used the words 'accountability'; 'responsibility' and 'decision making' to define project governance. The respondent RS 02 explained that:

'it is the structure that is accountable to higher executive authority for the project and has delegated decision making powers regarding the project'.

RS 03 expounded his definition of project governance by stating the governance structure makeup as well as its functions as follows:

'project governance involves structures that account for project status, project risks, quality of the project, compliance with user requirements; structures range from project manager to steering committee, to PMO and senior stakeholders such as the executive project committee'.

RS 04 description of project governance focussed on project selection function:

'it is the processes that ensure the right projects are selected through submission of project proposals, their consideration against business requirements and the final approval'

While respondent RS 06's definition was centred on structures that make up the governing entity and the functions

'project governance entails structures such as executive project committees, project steering committee, project manager and functions they carry out to enact governance in the project such as approval of funds, management of risk'.

Difference between corporate and project governance: the respondents related the concept of corporate governance with mechanism for controlling the whole organization such as the board of PRASA and the government of the Republic of South Africa.

'With corporate governance, the King Code of good practice comes to mind'
enthused RS 04.

RS 04 correlated the two governance paradigms using the South African code of governance, the King Code report

'The King Code ought to guide corporate behaviour and corporate citizenry such that PRASA executives in their directing, controlling and decision making act in the manner that benefits the owners of the company such as government and department of transport which acts on behalf of the citizens of the country'

RS 04 further explained that;

'in the same way corporate governance provides an oversight function to the whole organization, project governance provides oversight function of project lifecycle and should be aligned with corporate governance'

Project governance was seen by all respondents as related to the goals and objectives of the project, while corporate governance encompasses the goals and objectives of the whole company or organisation.

Demarcating the relationship between project governance and corporate governance, RS 01 opined that

'the project governance framework is a mechanism for making organizational strategy a reality through proper governance of projects'

RS 05 holds the view that

'corporate governance provides oversight on project governance by way of making sure that the project governance structures manage and mitigate project risk, ensure compliance with company policy on issues such as appointment of contractors and disbursement of company funds on projects'

All respondents thought project governance should be based on, and be aligned with corporate governance framework of PRASA.

Governance mechanism and various key stakeholders were similarly described by all respondents. The respondents explained that the organization uses EPMO located at head office, a PMO located in PRASA Cres regional offices in South Africa. The executive manager who reports to the executive committee and the board of directors

enact project governance. The project manager, project steering committee which is put together for each project, the technical team comprising the main contractor and sub-contractors all enact the governance mechanism.

RS 02 emphasized that the sponsor who is normally the executive manager represents the project's best interest outside of the lower level project management structure. Similarly to RS 02's explanation, RS 03 added that the executive manager also represents the financial arm of the organization and signs off documentation during approval process e.g. during procurement process.

Expressing his views, on the role of the governance structures RS 06 said

'the executive manager acts as advocate for the project to secure its prioritization and making sure that adequate resource are provided for the project'

All respondents defined the project manager as being the stakeholder responsible for project implementation activities receives; reports on project progress and its health from the main contractor and submits it to the PMO, which in turns presents the reports to EPMO. In their explaining of the steering committee and its role, all the respondents explained that it is also referred to as the 'client interface committee' which is made up of project owner, end user and other key stakeholders such as the main contractor.

RS 01 explained that the project manager takes more of a technical leader role although he has limited decision making powers.

'the project manager has limited authority to approve the use of resources or other related business issues concerning the project as the authority resides with his direct manager and also head office' explained RS 01.

RS 05 explained that for most decisions, the project manager has to issue requests e.g. change requests to his direct manager and related departments.

'The decision making power is centralized at head office with the executive manager at EPMO', offered RS 06.

THEME 2: Enablers of project governance

Standardized structure and work methods: Project documentation of the projects in the case revealed that projects follow a standardized structure and work methods. The structure and work methods are based on the Project Management Body of Knowledge (PMBOK) framework of standards and best practices. The project procedures, techniques, tools and document templates used to implement projects are all based on PMBOK framework of standards and best practices.

All respondents alluded to an important role and the existence of the regional PMO's and EPMO. The existence, role and the importance of project management offices was explained by RS 06,

'EPMO at head office and PMO at various regions support implementation of projects by providing oversight role of the project implementation process as well as project visibility in the entire organization'.

Front End Loading Processes: All respondents acknowledged the existence of a documented PRASA project Front End Loading (FEL) process which ought to assist with decision making regarding which projects to finance and execute.

The front end phase is supposed to stop when a decision has been reached and projects are selected and funded explained RS 01. Commenting on the FEL processes, RS 03 had this to say,

'flow guides on how this process ought to be applied can be viewed on the company's ICT system used for projects known as EPIC this help management to keep track of what is happening as they do not always have time to study each project documents for progress, the implementation of the FEL process is however another story', lamented RS 03.

RS 03 highlighted challenges with process and stated that,

'Even though company's FEL process explains what ought to happen, the selection of projects appears to be a black box' bemoaned RS 03.

RS 03 explained that no real noticeable process is being followed to select projects other than a couple of token meetings with other divisions. The respondent further explained that there are always some 'pipeline' projects in an effort to ensure project

implementation continuity. RS 04 explained that while there is documented evidence of some front end loading process and how it should be done with flow charts guiding the implementation processes, it is not being implemented as the way it is supposed to be. 5 of the respondents explained that the availability of funds is one of the major factors considered for approving a project.

Experienced project management contractor: All respondents held a view that PRASA cannot carryout projects without the involvement of a professional external project management company because construction is not a core business of PRASA. The organization lacks expertise in the area. All respondents alluded to the appointment of an external project management contractor for all projects they had worked on. All respondents views were similar in defining the role of this main contractor.

'The main contractor has a contractual responsibility to deliver the project on budget, discuss the performance of the project against the baseline' expounded RS 05.

The project management contractor emerged as the stakeholder that manages the project by way of design, estimation of costs, integration of design and construction according to the definition of the role of the contractor offered by the respondents. The involvement of a professional project management contractor was corroborated by document reviews.

Internal project manager experience: RS 04 holds a view that management believes that professional services are not always needed and that project managers should do the design and specifications without professional service providers as they themselves are experienced project managers.

'PRASA managers distrust service providers' lamented RS 04.

Reporting culture: Project reviews revealed that the organization establishes a very strong reporting culture with the contractors. The project management company performs a reporting function to the project steering committee on the following standard items: project progress, delay, claims & notifications, project schedule, overall project status, key risks, key issues, client decisions required, planned activities for the next month. Other reports include project health, general observation, project cost breakdown, health & safety report, labour statistics, construction progress as well as to

supplement the report with progress photos. The monthly reports aim to describe project activities against project plans and budgets.

The respondents explained that they were not aware of any incentives for good performance or disincentive regimes for poorly performing contractors other than penalties that are listed in the contract.

THEME 3: Application of the governance mechanism: structures, processes and activities

Governance structures: Various structures are used to execute project governance function at different levels of the organization. At the strategic level, the executive managers and EPMO located at head office make governance decisions. Projects are grouped in portfolios. The EPMO captures project demand across the organization and allocates funds to the different portfolios. The decisions made include which projects to be carried out and how they should be prioritized as well as the provision of oversight. The second level is the regional operational level composed of the regional PMO and senior manager responsible for projects. This level is delegated to appoint consultants and contractors that will execute the project. The level controls changes to project scope and establish reporting arrangements on the progress of the project. The third layer is the steering committee and the project manager. This structure oversees the planning, design, construction and commissioning of the project. Further the structure monitors project progress and intervene where necessary while also reviews and approves project reports before submitting them to EPMO via the regional PMO.

Application of governance framework: During the interviews, when asked about their views on implementation of governance framework all the respondents held a view that the governance framework is minimally and ineffectively applied, with processes such as submission of business case, minimal front end loading process, stakeholder engagement, progress reporting being engaged. 4 of the respondents expressed a view that the minimal and ineffective application of the governance framework can be seen as a deviation of the norms and standards.

'The governance framework ought to comprise rules and processes that ensure projects achieve their intended purpose, with a strong focus on accountability, but accountability is so low' accused RS 01.

Governance processes and activities

- **Project business cases**

It was found that a business case was submitted in all projects in the case study. All business cases contained a section on business analysis. In this section the definition of the business need and the definition of the solution and the probable scope of the project are made. The business analysis for each project was found to be detailed.

- **Business analysis of projects in the case**

The Parade Concourse and Infill Deck project for instance sought to extend the Cape Town Station Market footprint onto the infill deck with trader structures. The construction consisted of spatial reconfiguration of the Parade Concourse into a first class rail commuter concourse and grade A retail area. The project would improve rental income, work place improvement and space optimisation.

The new driver's mess-room and conversion of basement into parking project's business analysis expounded that the facility was originally built to house 280 male employees at any one time per day. The number employees grew to about 360 males and 65 women employees in this area. This resulted in a congested feeling, cramped spaces in the change rooms available, and sharing of bathroom facilities by males and females, a direct contravention of the occupational health and safety act, the constitution, labour relations act of the Republic of South Africa. The project was aimed at aligning the work environment with the law; alleviate workplace stressors that could have an impact on train handling skills and general wellbeing of employees.

With regards to the Bellville station ticket offices and Shosholozha Meyl facility project, improving income generating capacity of PRASA as well enhance commuter experience by providing safe and secure parking for commuters at Bellville Station were listed as the main aims of the project. The project would thus support the core business mission of PRASA of providing a safe rail commuter service. The project intended to solve the problem of lack of capacity to accommodate passengers by constructing new offices.

The Cape Town station SAPS opening to Strand street project was conceived to solve the people movement problem. The movement of people approaching the South African Police Service station located at Cape Town station negatively

impacted PRASA operational activities such as ticket verification. The entrance to the SAPS facility was from the operational area. The implication was that non-ticket holders who wanted to report a railway crime incident did not have access to this SAPS facility. The circumstances described above created situations where the ticket verification process was compromised by people claiming to go to the Railway SAPS facility and then entering the rail operational area without a valid ticket. The project was aimed at creating an entrance to the SAPS facility from the public area without affecting PRASA operations. The project would further contribute to the realisation of improved operational efficiencies, one of the strategic activities of PRASA in the 2011/2012 – 2013/2014 corporate plan.

- **Alternatives selection**

On the alternatives selection part of the business case, it was found that 2-3 options were considered as solutions and weighed against the other for each project. While cost was a major consideration for each solution, various other factors were considered. The multiple criteria analysis therefore meant that a preference between options is made based on a set of objectives such as whether the project would improve rental income, align the organization with a legislative requirement, boost revenue collection or optimize commercial space or solve the organization's legal requirement. Consultation with end-users and other departments within the PRASA group took place from the inception of the project and options generation.

On the new drivers mess and conversion of basement into parking project a wide range of proposals were investigated. 5 project proposals were generated, for each proposal opportunities and constraints were investigated to arrive at the best probable solution. On the parade concourse and infill deck project however only 2 options were considered for this project, the first option meant that PRASA would do nothing and thereby lose potential rental income. The second option was to carry out the renovations, prevent potential loss of income and add value with the improvements of the Cape Town Station building to PRASA assets.

- **A stage gated approval process (Front End Loading- FEL)**

PRASA governance framework is arranged in a way that requires all projects go through approval at inception where a decision would be made whether to fund and

implement project; delay or cancel the project. This denotes a front end loading process. The Front End Loading (FEL) is the company's capital budgeting tool as shown in the company's data visualization IT system called EPIC. The tool purports to develop information which will enable the project organization to allocate resources, measure risk and define measures to deal with risks.

Most projects in the organization are initiated bottom up. The projects in the case had at some point been part of a pool of project proposals that competed for resources. The projects went through a stage gated approval process where the organization had to choose financially sound and viable projects. The criteria used for a project to pass through the first gate include impact on business, the project's perceived priority compared to competitors, the scope of work and a preliminary cost estimate. The output of FEL 1 phase is the capital framework for budget funded capital works for the organization.

- **Roles and responsibilities**

All projects reviewed had a clearly defined sponsor and documented internal project manager. The sponsor is an executive manager whose responsibility is to facilitate the approval processes and financial resources of the project. The regional senior manager for projects manages the internal project team, internal stakeholders and other internal resources contribute to the project. The projects were steered by a project steering committee (PSC) which had been established at the initiation stage of the projects. The documentation shows that project steering committees are in fact called client interface meetings, and are made up of representatives of stakeholders groups affected by the project along with the sponsor and the project manager. The main role of the committee is to oversee the planning, design, keep scope under control during construction, address and escalate issues which may have impact on the project as well as commissioning of the project. Further, the PSC receives and endorses all project reports before submitting them to the EPMO via the regional PMO. It appears that the steering committee meetings were not used as a decision mechanism but as an information gathering and sharing sessions where the members would be routinely updated on the progress of the project. Major cost and time variations such as extension of project contracts are escalated to executive manager projects for approval via EPMO.

- **Approval of capital funds, procurement processes and project timelines**

No clear demarcated time lines regarding the decision making from the time projects are conceived to project implementation. It was found that project funding decision and procurement processes for the project were postponed for various reasons resulting in most cases delayed starts for the projects. Some of the reasons cited for these delays include the unavailability of funding and other projects taking priority or funds diverted to complete project already under construction. Three projects in the case study experienced a delay start due to these factors. The Parade concourse project was first initiated in 2005/6 financial years with project charter approved in March 2008 and the conceptual designs approved between September 2008 and October 2009. The project proceeded to tender stage however no award was made at the time. These works were moved out to the 2011/2012 financial year as the capital budget allowance was taken up by higher priority work needed for the soccer world cup in July 2010. The project was then advertised for the second time 9 months after the first process. The contract to implement project was awarded 9 September 2013; site handover 30 September 2013. The original planned duration of the project was 12 months. Actual practical completion of the project was end March 2015.

New driver's mess and conversion of basement into parking project was conceived in 2008. The detailed design of the project was completed by the end of March 2012. Consultation and mitigation of matters arising from detailed design including the cost escalations with time resulted in capital budget allocation in the 2012/13 financial year. The project got implemented in 2014. The contractor had a duration of 18 months to complete the project from the date of appointment/acceptance of tender. Planned date of site handover was 4 August 2014 as per letter of appointment; however the variance between the planned start date and actual start date for the drivers mess project was 4 months late. Late relocation of the drivers to the new facility, contractor suspension of the works on the 30th October 2015 and work restart on 17th November 2015 with subcontractors resuming only a week later were some of the factors that led to project delays. The actual completion date was 4 March 2016.

Bellville station ticket offices and Shosholozza Meyl facility project had been conceived as early as 2004 however did not start as scheduled as funds were not made available. The professional project management team for the project was appointed in January

2010. The project was to be undertaken in two phases. Construction on phase 1 started in October 2013 with actual completion in March 2015. Budget constraints together with other priorities are cited as reasons for the delay in starting with construction. To begin phase 2 of the project, the project management contractor was appointed, contractor completed the phase 2 designs and prepared the bill of quantities and drawings for the procurement of a construction contractor. These were handed to SCM in January 2015. This procurement process was cancelled twice. The discussion in the steering committee led to proposals that this phase of the project needed to be cancelled.

The incomplete project led to operational nightmares for PRASA. A cancellation of the contract with the project management contractor meant that PRASA would go through a tender process again to appoint a new service for which PRASA had already made an appointment. This posed a risk in that should another professional service provider win the bid (other than previously appointed contractor) this firm will have to incur costs to redo some of the work the previous contractor had already done, and for which were already paid e.g. to produce the bill of quantities. This would constitute wasteful expenditure for PRASA and the former contractor could litigate against PRASA.

During the construction of the project a total of 182 days of extensions and awards were granted; some with costs.

On the Cape Town station increasing retail footprint project, the contract was signed and approved with the main contractor and was valid from 2017/11/16 to 2018/09/30. The project experienced delays as soon as it started. The contractor failed to take occupation of the construction site a month after appointment. Sub-contractors were appointed late meaning that building work grinds to a halt or were delayed. PRASA documented unsatisfactory performance by the main contractor and their project manager who was stationed at another province. After the extension of the contract to accommodate the delays, the project was closed with some parts not completed by 29 March 2019. PRASA was unable to get the contractor to accelerate or deliver faster, even with issuing notices of non-performance and contracts management.

- **Stakeholder engagements**

External stakeholders such as the municipality, communities and other parties affected by the project are engaged very early on during project initiation and during project implementation. PRASA uses a communication plan consisting of communication responsibility matrix (CRM); linear responsibility chart (LRC); and responsibility assignment matrix (RAM) to manage stakeholder engagement process.

The main contractor, a project management company, 2-3 Architecture companies depending on the size of the project, quantity surveyors, structural & civils, plumbing and drain, lifts, electrical engineer, electronic & fire engineer, health & safety representative are appointed to execute the project. The senior regional manager for projects represents PRASA as well as the end user of the new facility. Another senior manager responsible for project integration and coordination within the PRASA group of companies also forms part of the project stakeholders.

- **Quality control**

PRASA relies on the main contractor for a quality output of the project. The main contractor is responsible to make sure that all subcontractors construct in accordance with the contract documents. While the subcontractor furnishes and installs approved specified materials according to contract, it is the duty of the main contractor to control the quality of the work installed and corrects deficiencies. PRASA performs the owner's observations and inspections and any deficiencies are brought to the attention of the main contractor.

- **Project reporting and performance monitoring**

PRASA assigns the performance monitoring function to the project management contractor. The project management contractor has to collect; measure and distribute performance information such as cost performance and schedule performance. This information ought to give insight into the health of the project and highlight areas where PRASA needs to place special attention, determine corrective actions to resolve performance issues. To make sure that contractors adhere to the terms of the contract PRASA includes penalty clauses such as late completion/ delay clauses in the contract, e.g. R5 000.00 per calendar day, penalty for late completion of work, incomplete or unsatisfactory work.

- **Financial reporting**

Financial performance of the project is also delegated to the project management contractor. The contractor prepares monthly financial reports which include expenditure comparisons of actual budget linked to project progress. These reports are presented at the project steering committee meetings and submitted to EPMO as attachments to monthly project report which summarizes the progress and health of the project.

The following findings were made regarding the costs of projects:

On the Parade concourse & infill deck project, the initial business case submitted for funding at the end of 2011 requested a capital allocation of R72 409 562. In 2012, after a value engineering exercise, the project spend which included total project cost inclusive of professional fees and VAT, the builders work and preliminaries, contingencies and escalation stood at R68 835 924. An additional capital budget was requested through a change request equals to R55 167 373. The cost of the project totalled R 126 215 056.93 inclusive of vat. For the driver's mess project, the budgeted cost of the project was R78 427 577 the cost of project at completion was R81 685 959 inclusive of vat. On the Cape Town station – increasing retail footprint project, of budgeted cost of the project of R7 643 923 44 only R7 413 908 60 was spent on the project. The variance is a result of termination of contract without delivery of defaulter's desk.

- **Health and safety**

The principal contractor is the custodian of the PRASA health and safety audits monitoring and reporting function of the project. The main contractor subcontracts the health and safety work to a contractor qualified to carry out the function. While PRASA has an obligation to carry out monthly safety audits; PRASA however relies on the contractor report. The sub-contractor keeps record of all accidents and incidents, makes sure that safety regulations are adhered to and performs safety audits as well as providing a report of health and safety performance to the main contractor. No major accidents were reported during construction of the reviewed projects. On the Parade concourse & infill deck project one medical doctor case and 12 first aid cases were reported during project construction. 2 disabling injuries were reported and were due to scaffold failure resulting from scaffold being overloaded with concrete. While there were no disabling injuries or loss of shifts, various health and safety incidents were reported during the construction phase of the new drivers mess and conversion of basement as

well as on the Bellville station ticket offices and Shosholoza Meyl facility project. Various incidents of noncompliance with the basic health and safety regulations were recorded such as construction workers not wearing the correct protective clothing and excavation areas being worked on with no demarcation are some of the recorded health and safety incidents.

- **Appointment of construction sub-contractors**

In most cases PRASA requires that the construction contractor be graded according to act 38 of 2000 of Parliament of South Africa, Construction Industry Development Board (CIDB) level 7. The grade denotes the maximum value of contract the contractor is deemed capable of performing within a particular class of work. The CIDB 7 contractor grading designation meant that the contractor is considered capable of undertaking a contract to the maximum value of R40 000 000.

The close out report for the Cape Town Station- increasing retail footprint project cites one of the problems encountered during project execution as being inability to get the subcontractor to accelerate or deliver faster, even with issuing notices of non-performance. This means that PRASA found holding the subcontractor to account and contract management difficult outside of fining the contractor a fee of R5000 per day for project delay. PRASA closeout document shows a very insubstantial recommendation to this problem which read 'appoint better contractors'. This project was delayed by four months and under budget. Further, the contract was terminated with some parts of scope such as new defaulter's desk undelivered.

- **Code of conduct**

The interview respondents were not aware of any documented codes of conduct or SLA's for contractors outside of the contract signed contractors with PRASA. All the respondents noted that the contracts generally encompass some clauses which may be considered guidelines for behaviours by contractors what they may and may not do during the course of the contract, with PRASA explaining their role and responsibility to maintain a smooth working relationship.

- **Deviations**

RS 06 explained that with regards to supply chain management (SCM) processes no notable deviations are allowed because that would be breaking the law which is set in the procurement prescripts of government entities of South Africa, however the company has found itself in many legal battles where the company sought to nullify contracts that had been allegedly awarded irregularly.

Theme 4: challenges to the application of the governance mechanism.

Stifling procurement policies and long procurement process cycle were factors that were cited as challenges to implementing the governance framework by RS 04.

According to RS 04,

'In order to govern projects properly, there needs to be an enabling business environment with support processes working well'.

RS 04 further explained that over the years, strategy documents have long been citing ineffective and poor SCM service delivery and poor and application of procurement processes.

'The bigger problem that makes a mockery of project selection and front end loading is the SCM process' argued RS 05.

RS 05 further explained that the sluggish SCM processes actively obstruct and frustrate project delivery processes and many turnaround strategies have failed to solve this problem. RS 01 and RS 06 cited various examples to demonstrate the poor application of the governance activities.

RS 01 opined that

'due to the very onerous SCM process I expect none or very few appointments of service providers to be forthcoming for a couple of years'

RS 01 explained his prediction based his prediction on his experience citing that capital expenditure went down from over 90% before 2015 to 14% in 2018/2019 financial year.

RS 06 cited that the appointment of contractors for the 2019/2020 financial year on National Stations Improvement Programme (NSIP) were all cancelled due to a new local content requirements in the SCM process. RS 06 predicted that appointment of contractors on the Work Place Improvement programme (WPIP) will probably go the same way after waiting 2 to 3 years for SCM to appoint a contractor.

'The inability of the governance arrangement to resolve complex issues paralyses project delivery', charged RS 02.

Various examples were cited by the respondents to illuminate limitations in governance. RS 06 cited that projects often start later than planned and fewer projects are implemented.

'Late implementation has cost implications, the cost of project implementation escalates due to inflation' explained RS 06.

RS 04 explained that even though it may seem that SMC rules are followed, there are still incidences of projects being cancelled due to poor performance of the contractor.

'A poorly performing contractor can be seen as a direct result of poor performance of the SCM process for appointing an unsuitable contractor as well the failure of project governance mechanism in its performance monitoring function in that it fails to hold the contractor to account' criticized RS 04.

'As project manager I always feel let down by head office since they are unable to solve or assist in effecting solutions with SCM processes that paralyse project delivery', retorted' RS 03.

Application of FEL processes: All respondents felt that the glaring deviations from the documented governance processes such as poor application of the front end loading processes, over reliance on service providers for quality, cost and risk management affect project delivery.

Accountability mechanism for sub-contractors and policy weaknesses: Citing one of the projects he managed, RS 03 explained that a poorly defined mechanism for holding contractors to account creates a dilemma for projects. RS 03 further explained that the governance mechanism is unable to get the contractor to accelerate performances or deliver faster, even with issuing notices of non-performance which leads to project delays and contract cancellations. Appointment of contractors especially companies owned by former employees of PRASA who use their knowledge of company processes and a policy weakness to be awarded work with no experience was cited by 4 respondents. RS 02 predicted that he expects the new Small Micro Medium Enterprise (SMME) policy to result in inclusion of new contractors with no experience and that poor performance may result.

Decision making: All respondents expressed that the minimal application of the governance mechanism does very little to enhance the prospects of project success.

Various challenges were identified by the respondents to be factors that limit the implementation of the governance mechanism. 2 respondents cited the limited decision making powers of the project manager and steering committee as every decision is escalated to executive manager and EPMO.

'Centralization of decision making power at head office is limiting factors to the application of the project governance mechanism' explained RS 05.

The respondents cited that PRASA has experienced many changes in higher level decision making personnel over the past few years with the company making headlines for deficient governance practices and that those changes affect the governance of projects.

'As a public entity, PRASA is governed by laws that aim to have its managers and board of control exercise their duty with integrity, honesty and safeguard the interests of the organization; explained RS 02.

4 respondents linked poor corporate governance practices to slow decision making and poor problem solving for project implementation.

Risk management- PRASA transfers risk as far as possible to the contractor according to RS 06. The respondent offered that since PRASA transfers all risk to the contractor it means that PRASA only focuses on the negative effects of risk. When risk materializes it can sometimes offer opportunities which the company can pursue.

Performance monitoring: RS 01 cited insufficient performance monitoring, poor managerial accountability, lack of consequence management and impunity as some of the corporate governance challenges facing PRASA.

'If the people who have been tasked to guard the interest of the organization and governance oversight are not aligned with good governance practices; then it is reasonable to expect that their actions will be mimicked by those lower down in the organization' argued RS 03.

THEME 5: Project governance and project success

Definition and measure of project success in the business cases of projects in the case study was found to be generally limited and was described in terms of completing within allocated budget and time. No further measures of success could be found of project documents.

On project governance and project success, RS 06 views were that there is no noticeable involvement of the company's top managers in defining project success criteria. RS 03 and RS 04 emphasized that top managers only want to hear that project implementation is successful. According to RS 02 success is defined in very limited terms such as complete project with allocated funds, no scope changes, and that project must be delivered within a set date. 5 respondents reported that projects rarely start on time and get completed on time.

'If something goes wrong, the project manager is blamed', protested RS 02.

RS 05 explained that noticeable project success criteria is that which gets listed and documented in the business case, which is generally very limited as no deliberate effort is made to establish critical success factors and evaluate the project with rigour against set critical success factors.

The respondents held different views on what constitutes project success. 2 respondents held a view that if a project is completed and is being used by the end user, then it is successful, even if it is late and has cost more than planned. The other 4 respondents disagreed with this view explaining that projects success should be judged on more than just being complete but on other aspects which should have been defined on the business case; such as meeting user requirements, quality aspects, cost and time. The 4 respondents argued that because most PRASA projects they worked on fouled on the criteria mentioned, they view track record of success as low.

All the respondents were in agreement that generally, projects fall within a portfolio that has a strategic intent. The projects are carried out to pursue a particular strategy e.g. asset investment program is a strategy initiative that seeks to grow revenue base and improve financial position of PRASA.

'The gaps lie in robustly reviewing the actual outcome of each project against the intentions and forecast stated in the business case, however that process will not achieve much as the business are generally not very convincing documents' cited RS 03.

4.4 Discussion of findings

- **THEME 1- *Definition, characterization and functions of the project governance framework.***

This theme deals with the understanding of the concept of project governance, its relationship with corporate project governance and difference between the two governance paradigms. This theme also deals with the inclusive nature of the governance mechanism at the various levels of the organization, the key project stakeholders and their level of authority. Lastly, the theme deals with specific roles of the governance structures; their job descriptions as well as governance activities carried out by the governing stakeholders.

According to the findings, there is a strong organizational understanding of what project governance is and its relationship to corporate governance. By definition project governance should be applied to project governance same way corporate governance is applied to the organization and that projects implemented according to the standards and methodologies prescribed by the project governance code as articulated by Bekker and Steyn (2009).

Citing the King Code on governance in South Africa, the respondents demonstrated that corporate governance is designed to make sure adequate and effective controls are in place for the organization, the same way effective controls and decision making processes are in place for a project. This is in line with the definition of project governance by PMI (2013) who asserts that the project governance is an oversight function that is aligned with the governance model of the organization. Bekker (2014) echoes the sentiment by declaring that project governance should be applied to a project the same manner corporate governance is applied to an organization.

Similarly to the assertions made by Crawford and Cooke-Davies (2006), O'Leary (2012), Klakegg, et al. (2008), PRASA entrenches a project governance framework and sets its role be the provision of finance and control of financial returns of the investment, to set and monitor levels of performance by contractors delivering the project, provide an audit function and control risk exposure. The arrangements are similar for all projects but can be described as minimalistic and are based on an adjusted PMBOK framework of standards and best practices.

The PRASA governance framework was found to encompass some of the fundamental principles by articulated by Crawford and Cooke-Davies (2006), O’Leary (2012), Klakegg, et al. (2008). These include decision-making bodies at different levels of the organization, demarcated roles and responsibilities of decision making bodies, stage gate approval processes, documented agreements relating to contracts and sign-off as well as various detailed governance elements that would be responsible for managing project costs, time planning, communication, risk management processes etc.

PRASA governance framework was found to comprise the following elements:

- **A state gated approval process**

According to Holst-Volden and Anderson (2017) project governance arrangements should be put in place before the inception of each project. Projects should have an approved plan with decision making points.

The PRASA Front end loading (FEL) model in figure 11 outlines activities for each FEL phase that describe the details of each phase and gates.

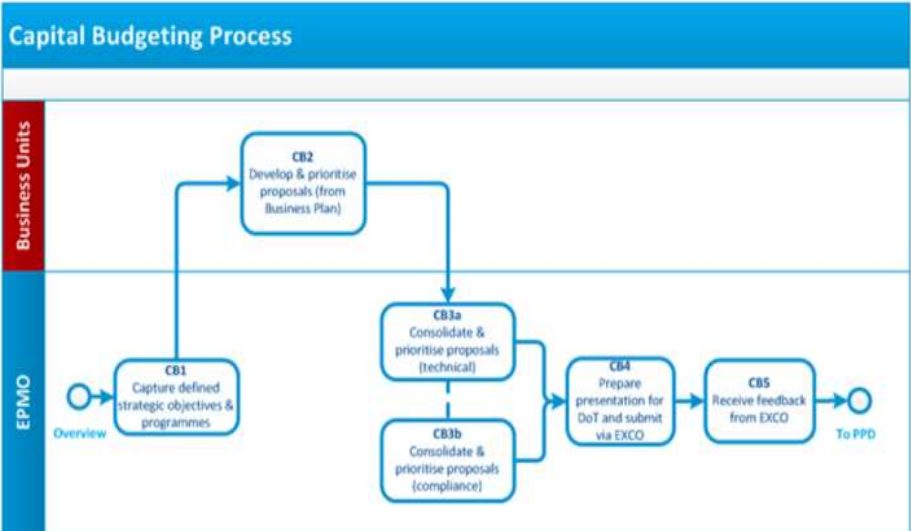


Figure 11: PRASA's capital budgeting process: FEL1 (adapted from PRASA enterprise architecture document management system)

FEL1 is the capital budgeting and appraisal framework which takes place at 2 levels namely the Executive level with accompanying Enterprise Portfolio, Programme and Project Management Office (EPMO), operational level composed of the regional project management office (PMO) and senior manager responsible for projects. EPMO is a

business function operating at the highest level overseeing enterprise wide projects and reports to the company's executive committee. This is consistent with Mabelebele (2006)'s definition of the role of EPMO that it provides a critical oversight role of project processes and methodology, further assisting project visibility across the organization.

The governance decisions at executive level are taken by the firm's executive managers, by way of formulating the organizational strategy in line with government priorities and annual budget plans. This results in a corporate framework with decisions about the types and quantities of projects that will bring strategy to life. While many projects within the organization will run simultaneously, the true test of the governance mechanism is choosing the right projects and doing the chosen projects right. PRASA uses project programs to achieve efficiency; e.g. station improvement programmes, workplace improvement programmes etc.

The EPMO captures expressed strategic objectives and strategic programmes that would deliver the expressed objectives. This information is disbursed to various business units. The EPMO is accountable to the company's board of directors through Medium Term Expenditure Framework (MTEF) and the Department of Finance. In order for projects receive approval and pass through the gate 1 which is the project appraisal framework, the governance mechanisms requires that each project business case designates the project's relationship to other programs and initiative's alignment to strategy.

At business unit level:

The business units use the strategic programme and business plans to develop and prioritize projects and make proposal submissions to EPMO. These are again evaluated and prioritized and presented to the sponsor by EPMO. The output of this process comprises: companywide investment plans, individual business unit's business plans and project route map.

FEL2 as shown in figure 12 is the project initiation phase, where the business units develop business requirement specifications, user requirement specification, design high level project charter for projects that were approved at EPMO. The approval of the project charter sets off other project processes. These include initiating strategic sourcing and contracting through supply chain partners, appointment of external project manager and constituting a project steering committee. FEL 2 marks the point where the project’s scope is fixed.

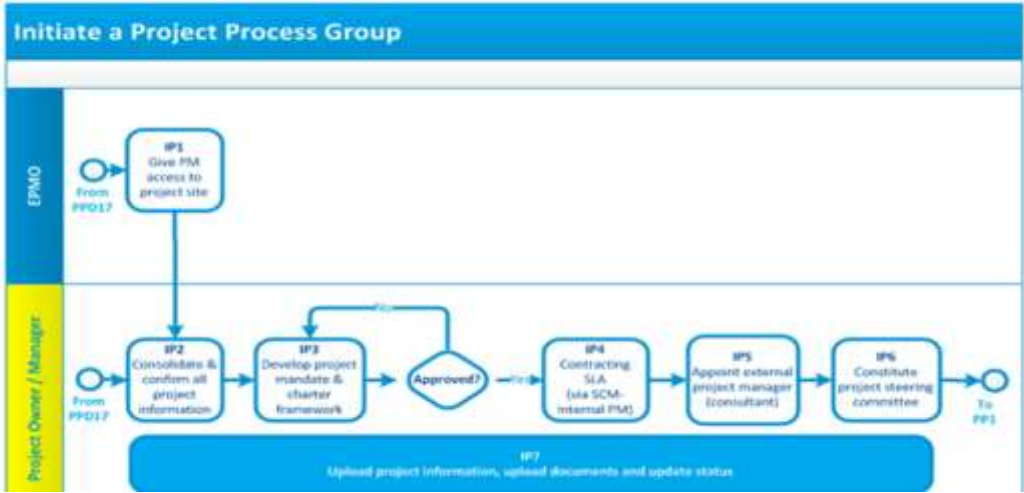


Figure 12: PRASA's capital budgeting process: FEL2 (adapted from PRASA enterprise architecture document management system)

FEL3 expands the detailing of the alternative selected in Phase 2, develops the implementation plan, functional specifications, scope and prepares the final estimates of cost and schedule. In this phase, engineers carry out the development of basic engineering, equipment specification, and a plan for supplies. This stage is aimed at ensuring better risk management and increase predictability of project cost and schedule.

While PRASA entrenches a front end planning mechanism as part of its governance mechanism, the strength of the governance mechanism lies in being able to extend governance and control during the construction phase of the project. PRASA delegates most of the responsibility of oversight to the project’s main contractor, who has to collect performance metrics and report on the health of the project. Generally PRASA as the project owner and the contractor have divergent goals. PRASA wants to complete the project on time and cost; the contractor is motivated by profits. PRASA needs to

entrench reasonable oversight on the project and not largely rely on the reports of the main contractor.

- **Decision making**

Project construction decisions are made at three levels, namely: at project level by the steering committee, at operational level by regional PMO with the senior manager responsible for projects and at executive level via the EPMO. It was found that the steering committee has a very limited mandate to make decisions on behalf of the organization. Minor decisions for instance to grant extension on project works are granted by steering committee after considering the reasons provided for such extension requests. Scope changes and project revisions that lead to cost escalations are first considered and discussed at steering committee level with the help of expert advice. When these are deemed to be necessary, they are escalated to EPMO level for financial decision making.

- **Stakeholder engagement**

External stakeholders such as the municipality and the public affected by the project are engaged very early on during project initiation and during project implementation. Project stakeholders include the main contractor, a project management company, 2-3 architecture companies depending on the size of the project, quantity surveyors, structural & civils, plumbing and drain, lifts, electrical engineer, health & safety are appointed to execute the project. A programme manager represents PRASA as well as the end user of the new facility. Another senior manager responsible for project integration and coordination within the PRASA group of companies also forms part of the project stakeholders. PRASA uses a communication plan consisting of communication responsibility matrix, linear responsibility chart and responsibility assignment matrix to manage stakeholder engagement process.

- **THEME 2- Enablers of project governance**

This theme looks at organizational processes and mechanisms that exist and help facilitate the application of a governance mechanism.

Various enablers that is; conditions and variables that are thought to directly contribute to the efficiency of the governance mechanisms within PRASA project space were identified. These factors are responsible for providing an enabling environment to entrench the project governance arrangements.

- PRASA had adopted a project management standard the PMBOK framework of standards and best practices. Having a defined framework of standards and best practices along with policies provides a mechanism for standardization of governance across projects. PRASA applies a standard approach to project planning with consistent project documentation and electronic project records. Making a strong case for the need for a project management standard in an organization, Ozmen (2013) puts forward that a using a standardized approach does not only assist the organization to entrench the necessary project management fundamentals such as common language and processes but also provides benchmarking studies that may produce continuous feedback for the organisation.
- The project management company is the first contractor to be appointed and advises PRASA from the inception of the project. The project management contractor manages the project on behalf of PRASA with duties such as evaluating the tender documentation and checking that the project is within budget. This contractor will for instance advise on the bill of quantities and endorse that the project be put out to tender.

The hiring of experienced project management contractor enables the company to deliver clearly written specifications of scope of work with accurate and detailed work breakdown structure for the delivery of the project.

- A strong reporting culture enables PRASA to extract and document project information via the project management company. Project reporting is an important of a project monitoring and evaluation system. Reports enable decision makers to

track project progress against objectives and note any deviations from budgets and schedules.

- The project management offices (PMO and EPMO) set the direction and ought to ensure best practices and standards together with policies are maintained in all projects during project implementation. Further the PMO and EPMO ensure the integration of data from various projects and allow the status view of the state of the organization's projects which in turn enables informed decision making regarding projects that are in progress and promotes informed capital allocations decisions.
- Top managers of the organization do not have the time to follow the projects close enough. To overcome this PRASA uses media and technological infrastructure for data visualization of project performance such as an IT system called EPIC (the PRASA enterprise architecture document management system), while also relying on information from managers further down close to the project.
- Experienced and skilled project management personnel enable PRASA to implement the project governance framework.

THEME 3: Application of the governance framework; structures and processes

This theme looked at the structures used to enact project governance as well as the governance processes. Various limitations in the nature of the governance framework are discussed.

- **Structures**

In analysing the research data, it was found that governance framework comprises different structures and decision making bodies which are used to effect project governance at various levels of the organization. The executive committee and EPMO, the operational level and PMO as well as the steering committee are structures which were identified as responsible for decision making, problem solving and corrective action for deviations as shown in the Nicholas and Steyn (2012) framework. The governance framework was applied similarly in all projects in the case.

Several deficiencies were identified in the application of the governance mechanism and are thought to have an impact on project delivery. Having the correct governance structures and documented processes alone cannot guarantee success and resolve challenges faced by projects. It is the artful application of the processes and governance mechanisms that increases the prospects of success

- **Limited business case**

Klakegg et al. (2008) identified two very important functions of the governance system as being provision of a decision making process as well as controlling the quality of documents used as the basis for making decisions. A business case is a document that is aimed at assisting decision makers of the organization to fund a project based on the investment costs and risks, as well as the benefits of such an investment PMI (2013). Of the projects studied, it was found that the business cases were generally scanty. Very minimal analysis of project benefits, costs and risks and comparison to alternatives in order to make a recommendation to the decision makers regarding the best course of action regarding the implementation of the project was done. According to Franken et al. (2009), a detailed business case can assist performance monitoring during the implementation of the investment, and to evaluate the outcome of the investment against the predefined that characterize the investment such as objectives, cost and benefits.

- **Project appraisal process**

Jackson (2014) describes project appraisal as a process which assesses the proposed project in terms of its financial, economic, technical and governance viability by generating solutions options and selecting the most feasible option. Pinto (2014) asserted that projects are embedded in organizational strategy; project appraisal aims to ask the questions such as is there a demand for the project? Is the project consistent with the organization's current plans and future strategy and can it be operated in a reasonably efficient manner? PMI (2009) regards the business case with the technical and financial project appraisal as component of the project initiation phase. The project business cases of the case revealed the company engages a generally limited project appraisal process that addresses alternatives for meeting the stated business requirements in very limited terms. While this process was found not to be exhaustive, it

was aimed at supporting decision making. The level and detail required for each project being appraised should be proportionate to expenditure required for the project according to PMI (2009). The business cases showed that the alternatives that got considered were different technical solutions to the problem rather than mutually exclusive and unique solutions. The alternatives were assessed mainly for cost and effect on business requirements.

- **Project performance monitoring**

Heldman (2018) cites that the monitoring process involves measuring performance at different intervals to identify and quantify performance variances and effect corrective actions. The effectiveness of project monitoring is dependent on the technique used. PRASA assigns the performance monitoring function to the project management contractor. The project management contractor has to collect; measure and distribute performance information such as cost performance, schedule performance. According to Heldman, the lack of a definitive monitoring framework may lead to under monitoring and might affect the success of a project. The principal contractor is also the overseer of the PRASA health and safety audits monitoring and reporting function of the project. While PRASA has an obligation to carry out monthly safety audits; PRASA however relies on the contractor report. Financial performance of the project is also delegated to the principal contractor. The contractor prepares monthly financial reports which include expenditure comparisons of actual budget linked to project progress. These reports are presented at the stakeholder meetings and submitted to EPMO as attachments to monthly project report which summarizes the progress and health of the project.

- **Appointment of construction sub-contractors**

One of the explanations offered by Cantarelli (2010) for failure of projects is technical reasons related to the lack of experience in carrying out the project. The appointment of the construction contractor is based on the CIDB 7 contractor grading designation which means that the contractor is considered capable of undertaking a contract up to the value of R60 000000 according to the South African Department of Employment and Labour (2019). The grade also means that the contractor has works capability determined by the largest contract undertaken and completed during the 5 year period preceding the application for grade 7 to be R9000 000. While the grading requirement is sufficient to ensure the experience and work capability of the main contractor, it does

not deter less experienced contractors from tendering for these contracts and for sub contracts of the main contract. Choma (2008) warned that the risk of lack of experience by construction contractor may result in poor workmanship leading to a need for repairs and high maintenance of the project. This minimum requirement by PRASA may have qualified the main contractor to take on the project however does not exclude PRASA from political manipulation and contractor nepotism with respect to subcontractors involved in the project. Failure to have a mechanism in place or having a weak mechanism to vet subcontractors may pose risk for PRASA. PRASA has had contracts cancelled for non-performance because the sub-contractor who had been appointed for the project lacked experience. PRASA needs to engage contractors and subcontractors that have a proven record, expertise and capabilities in delivering similar projects.

Another weakness in the nature of the framework is related to company policy. There is no clarity in the policy that regulates a cooling period a former PRASA employee to do business with PRASA. Contractor nepotism may result from this practice as former colleagues may receive contracts which they are not qualified or experienced to implement.

- **Quality control**

PMI (2013) states that stronger process controls lead to better organizational results. Similarly Bekker and Steyn (2009) allude poor project monitoring and control to poor project governance. PRASA did not define quality standards for the reviewed projects. The consultants and contractors used their own quality plans and standards. Quality control was wholly made a responsibility of the contracted architects. The quality of the projects could be considered a fulfilment of what the contracted architect thought would be the acceptable standard for PRASA. Monitoring and ensuring accountability of project performance is a common project governance function that PRASA apportions to the contractor.

- **Delays in the procurement processes and late approval of capital funds**

Project procurement is a very critical stage of any project, where decisions are made regarding make or buy decisions, decisions relating to the kind of contractors best suited for the project and the review of the value for money to be spent by the organization. OECD (2004) puts forward that a public sector procurement spending accounts for 15% of the world's GDP. If the procurement is not properly managed, it

can lead to wasteful and poor development. Inconsistent processes, long negotiation and approval cycles times which result in long time lapses between conception of the project, award of the tender and the actual construction of the project were identified as the biggest deficiencies of the PRASA project governance framework. The framework does not stipulate the time frames between the various phases which means that the projects may carry on for years, with PRASA unilaterally cancelling the contracts or projects because of time lapsed after appointment of contractor which is often a result of the failure to keep planned project timelines. This potentially opens PRASA to litigation. Further the value system of PRASA that believes in procuring at the right cost and time is lost as the price escalates due to lack of implementation of the project.

The approval process for funds at PRASA follows a vertical chain of command. Majerowicz and Shinn (2016) argue that the longer the projects wait, the more costly they become. Financial market instability related to cost of material prices, labour wages and transportation are all the costs of delayed project start-ups. Delaying cost related decisions has resulted in expensive projects for PRASA. These unintended consequences result from many reasons such as limited financial resources, internal bureaucratic mechanisms for allocating finances such as single year capital budgeting process and tough competition between project portfolios within the enterprise. These delays result in loss in economic benefit or non-financial benefits such as the potential to enhance organizational performance. This can only be solved through a clear capital allocation strategy and company-wide digital tools that manage capital expenditure and facilitate collaboration, transparency and stage gate reviews.

- **THEME 4- Challenges to the application of governance framework**

This theme focuses on the factors that are limit the effective application of the governance framework.

- **Large project steering committee with limited decision making powers**

Too, et al. (2017) define the project governance framework as hierarchical the same way corporate governance is. The top project governance structure such as the project board and EPMO is accountable for the project delivery system but delegate responsibility and authority to lower levels such as the steering committee. Steering

committees form an essential governance mechanism which is instrumental in implementing procedures, policies, standards and monitor project performance according to Bekker and Steyn (2009) and Lechler and Dvir (2010). Various stakeholders form part of the project steering committees in PRASA projects. Murphy (2014) argues that while there is no right number of the number of individuals to sit in the steering committee, a smaller number of skilled individuals will perform better. To a larger extent, decision making is centralized at corporate office and thus the local project office has to escalate requests and issues to higher office. Most steering committee meetings were not used as a decision mechanism but as an information gathering and sharing sessions for routine updates project progress. The project steering meetings are in fact called client interface meetings. Inability to make decisions creates frustration with no sense of leadership by the project steering committee.

- **Heavy dependence on outside agencies for project management expertise**

PRASA relies heavily on contractors and sub-contractors for project management expertise. While PRASA may have procured successful projects using contractors the company loses lessons learned from one project which could be applied to subsequent projects. Further the company misses the opportunity to build internal capacity through internal people development and an opportunity to institutionalize project management.

- **Mechanisms for holding contractor to account**

The research revealed that the penalty issued to defaulting contractors is not a strong deterrent for poor and late performance. Contractors were found to cause project delays and could not be forced to accelerate even after being issued with penalties. PRASA needs to implement better strategies to immunize the organization from unexcused delays and slow delivery by contractors.

- **Internal bureaucracy, stifling procurement policies and long procurement process cycle**

The cumbersome yet necessary procurement processes affects the delivery of projects. PRASA procurement policy has its roots in the public procurement law of the Republic of South Africa. It is aimed at stimulating economic activity, improving competitiveness in industry and protecting local industries from foreign competition. The need to comply with public procurement procedures e.g. compilation of requests for proposals, tender advertisement, time taken to evaluate the bids results in long procurement cycles which

translate into delays of PRASA projects. There is no clear policy that delineates the time frames within the procurement process which ends up taking a long time.

- **Management involvement**

The findings from the interview show that respondents emphasized that top managers only want to hear that project implementation is successful with no real involvement. This may be alluded to the dilemma articulated by Crawford and Cooke-Davies (2006) who said that the sponsor should in one hand have an external focus by way of representing organization and client's interest while on the other hand should have an internal focus by providing support to project manager. The findings show that top management has a stronger external focus.

THEME 5- Project governance and project success

This theme deals with the role of a governance framework in delivering successful projects that projects support business strategy.

- **Definition of project success**

Based on the fundamental principles identified by Crawford and Cooke-Davies (2006) there should be clearly defined criteria for project success and for escalations of risks and issues. If the governance mechanism is a tool for monitoring project performance and direct action to address rising problems as discussed by Abednego and Ogunlana (2006); then certain elements have to be identified that will be used for the purposes of measuring project success and the extent of the effectiveness of the governance mechanism. The business case of each project ought to outline key success criteria for a project to be considered successful.

PRASA's definition and criteria used to measure project success in the business cases is limited and is based mostly on cost and time. The criteria and dimensions used while important, fail to capture some other factors related to supplier/ contractor issues, long term sustainability of the project, safety aspects, risk management, contract administration, project reporting.

Varying views as to what constitutes projects success were offered by the interview respondents. Most respondents considered the project success rate to be low based on

the criteria stipulated in the business cases; namely cost and time. Radujkovića and Sjekavicab (2017) argued that it is possible for a project to succeed, despite having flawed project management process, fouled on the predetermined criteria of cost, time and quality, it would be accepted by the client based on the overall ability to deliver the goal as the project would have achieved higher and long-term goals.

Similarly, Allport, et al. (2008) argued that project success should be measured by how projects reach the financial objectives forecasted, policy success of the project; that is how well the project solves the policy issues and lastly durability which addresses the project outcome's ability to deliver in the long term so that the intended policy issues are resolved. It is argued that delivering a project that meets the triple constraint criteria but fails to create value and sustainable positive impact for the organization is a wasted project in line with the views expressed by both Allport, et al. (2008) and Radujkovića and Sjekavicab (2017).

This research argues that project success should be viewed by the impact the projects have on the organization rather than the triple constraint of time, cost and quality only; a view well-articulated by Bourne (2007). Of the projects in the case and based on her own observations, the author believes that although some of the projects were late and over budget, the projects have had a positive impact on the organization. The projects support the strategic objectives of meeting the growth in rail passenger demand, improving reliability and reduce congestion while at the same time improving the organization's capability to generate revenue so that it can be self-sustainable. None of these projects are white elephants. The research uses a project product lens to view success of the projects in the case. The research attributes the success to the governance mechanism that currently exists in the organization. The research recognizes the challenges and does not discount the realities of projects that are late and over budget. Delivering projects that could be viewed as successful when viewed through both the project management lens and through the project product lens is a function of a well-entrenched project governance framework.

4.5 Chapter conclusion

The finding of the research showed that PRASA entrenches a project governance mechanism in its projects even though it is not without limitations. The governance mechanism needs to be strengthened. The organization's efforts of governing projects show that the main crucial roles that are needed to establish, direct, implement and validate project governance according to Alie (2015) are fulfilled. The roles according to Alie include the sponsor, steering committee, project management office, and a project manager. It was however found that the organization minimally applied the project organization's governance framework; this is a direct consequence of some of the events experienced during project implementation. Delayed project start, the inability to hold the subcontractor to account, problems with procurement; are some of the problems that are related to governance deficiencies. By strengthening the governance mechanism and improving its application, the organization can mitigate delayed completion, deliver agreed scope and solve project procurement issues.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Review of research objectives and conclusions

The objectives of the research were to establish organizational understanding and definition of project governance in the delivery of projects. Further, the study aimed to identify conditions that enable the organization to entrench project governance framework. The study also sought to analyse how governance is enacted as well factors limiting effective application of the framework. Lastly the study sought to establish the organization's definition of project success and make recommendations on how the organization can improve the implementation of the project governance mechanism to improve the prospects of success of the organization's projects.

A key finding of the study was that the governance mechanism of PRASA satisfies some of the fundamental principles outlined by Crawford and Cooke-Davies, (2006), O'Leary (2012), Klakegg et al. (2008). PRASA's governance framework comprises decision-making bodies at different levels of the organization as well as demarcated roles and responsibilities of decision making bodies. Further; stage gate approval processes, documented agreements relating to contracts and sign-off as well as various detailed governance elements that would be responsible for managing project costs, time planning, and communication were found to be present. PRASA governance framework was found to not satisfy the principle of a quality assurance system as this role is made responsibility of the contractor.

From this study it was revealed that project governance mechanism is in enacted in different degrees at various levels of the organization such as at executive level, operational level and at project level. The format of the PRASA project governance framework to high degree adheres to the recommendations made by the project governance literature such as the Bekker and Steyn (2009) framework.

While conditions and variables such as having a defined framework of standards and best practices along with policies provides a mechanism for standardization of governance and a strong reporting culture exist to facilitate the application of the framework, several limitations were identified in the project governance framework. The steering committee for instance has limited decision making powers as decision making is centralized at corporate office. Further, various factors were identified as challenges that hinder effective application of the project governance framework. Long procurement

cycles, delays in approval of project funds are some of the factors identified that hinder effective application of the governance framework.

The existence of the project governance framework does not mean that the governance of projects is predictable and that PRASA projects are well governed. The limitations in the existing framework as well as the challenges to effective application of the framework are thought to hinder the projects from successfully meeting the project business case criteria although the projects were found to be successful when viewed through the project product lens. Late delivery of projects, projects that are over budget, slow pace of decision making all show that a documented yet poorly applied mechanism limits the prospects of successful project delivery.

The research ends with tangible recommendations that can be used by the organization to improve the implementation of the project governance mechanism and increase the prospects of success of projects. The strengthening of the EPMO to effect a project governance culture, policy relating to timeframes for project funding approvals, and expansion of criteria used to define project success are some of the recommendations made to improve governance practices of the organization.

5.2 Recommendations

Implications of poor project governance are not academic but have far reaching consequences on the future of the organization and its capital investments. Joslin and Muller (2016) believe that good project governance contributes to project success while bad governance is a factor that leads to project failures. Written policies and documented processes and various committees with paper trail alone cannot guarantee sustainable project success. Numerous tangible changes have to be effected to improve the implementation of the project governance mechanism. The next section provides recommendations of how PRASA can improve the project governance mechanism and its application in order to improve the prospects of project success.

- **Dealing with governance deficiencies**

PRASA would benefit from establishing a dedicated resource that would work to highlight governance deficiencies in each project, make recommendations and promote organizational governance practices.

- **Timeframes for fund approvals**

PRASA needs to solicit external financial support to execute critical projects such as applying for funding from Development Bank of South Africa instead of relying from government grants. This will reduce time to execution once the project has been approved.

- **Quality management**

For each project, PRASA must develop project quality criteria, and performance measures. These must incorporate corporate quality standards and used as basis for measuring the extent to which quality has been achieved by the project.

- **Appointment of subcontractors**

It was found that some of the projects that did not work well were a result of lack of experience from contractor appointed to execute the project. PRASA needs to document a policy that defines a cooling off period which clarifies the period of time for former employees to tender for work and do business with PRASA after resigning from the organization. One of the projects analysed above which was cancelled before time due to non-performance; in fact a subcontract was awarded to a company the interview respondents reliably informed that it belonged to a former PRASA employee.

- **Performance monitoring**

The ability to measure performance of the contractor relies on being supplied with reliable data and employing effective monitoring techniques. PRASA may benefit from a method suggested by the World Bank (2012) known as participatory monitoring. The method comprises involvement of project stakeholders who will identify the objective and goals of the project, identify the indicators that will be used for monitoring, as well as involvement in the collection and analysis of data rather than heavily relying on contractor reports.

- **Expand governance framework to include definition and criteria for measuring project success**

PRASA needs to develop a comprehensive WBS like chart of factors and issues document that can be used to identify criteria and performance metrics which would be consistently applied across projects. The measurable parameters or desired output

such as Koelman (2004)'s framework of project success factors in figure 13 can be used to guide the process of formulation of this document.

Koelman suggests that the model can help organizations evaluate project performance by evaluating the processes efficiency, effectiveness and compliance rather than just time, cost and quality. The model allows the user to attach weight to each component being measured to arrive at a more objective weighted perception of project performance. Clearly defined success criteria in the business case may assist the organization to objectively evaluate the investment outcome.

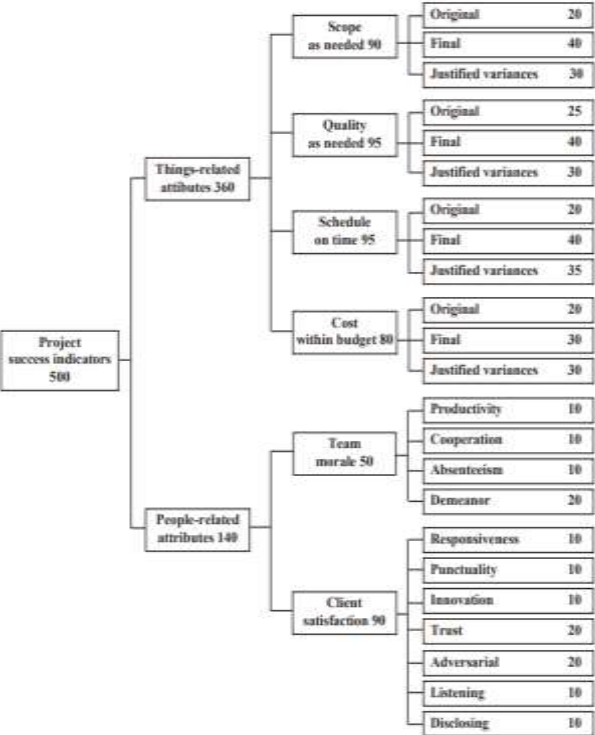


Figure 13: Project success factors; (Koelman, 2004)

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