HOLISTICA Vol 16, Issue 1, 2025, pp.135-164 DOI:10.2478/hjbpa-2025-0009

EXAMINING THE CHALLENGES HINDERING ICT PROJECT MANAGEMENT EFFECTIVENESS: A CASE STUDY OF THE STATE INFORMATION TECHNOLOGY AGENCY (SITA), SOUTH AFRICA

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Received: February 2025 | Accepted: May 2025 | Published: June 2025
Please cite this paper as: Mkhonza, S., Mpungose, S. (2025) Examining the challenges hindering ICT project management effectiveness: a case study of the State Information Technology Agency (SITA), South Africa, *Holistica Journal of Business and Public Administration*, Vol. 16, Iss. 1, pp.135-164

Abstract

Effective ICT project management is crucial for public sector organisations like South Africa's SITA, yet persistent challenges hinder its maturity and effectiveness. This study focused on SITA's Western Cape Province and identified key issues such as governance inefficiencies, insufficient project management skills, poor stakeholder engagement, and resource constraints. Using qualitative methods, including semi-structured interviews with project managers and stakeholders, the research highlights barriers to ICT project success and proposes strategies to improve project governance, standardise methodologies, enhance training, and strengthen executive support. While offering valuable insights, the study's scope is limited to SITA's Western Cape operations, reducing generalisability. Future research should expand to multiple provinces, include senior leadership, and explore the impact of emerging technologies on ICT project success. This study contributes practical insights for public sector institutions aiming to improve project execution and strategic impact.

Keywords: ICT Project Management; SITA, Project Effectiveness, Public Sector, Project Management Maturity

1. Introduction

The effective management of Information Communication Technology (ICT) projects is crucial for public institutions, particularly those like the State Information Technology Agency (SITA), which plays a pivotal role in supporting South Africa's public sector

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through technology solutions. Despite the strategic importance of ICT projects, SITA faces persistent challenges that hinder the effectiveness and maturity of its project management processes. These challenges include governance inefficiencies, a lack of skilled project managers, ineffective communication, and resource constraints.

The study aims to examine challenges that hinder the effectiveness of ICT project management at SITA in the Western Cape Province and provide recommendations for enhancing project management maturity.

This study identifies the barriers to effective ICT project management at SITA, specifically in the Western Cape Province, and explores strategies to enhance its project management maturity. Guided by qualitative research methods, including in-depth interviews, the study seeks to address two critical research questions: What are the challenges hindering ICT project management at SITA? and What recommendations can improve its maturity and effectiveness?

The expected findings highlight the need to enhance ICT project management maturity through improved project management capabilities, a standardised project management framework, dedicated support for the Enterprise Project Management Office (EPMO), and improved senior management support.

2. Literature review

2.1 Overview of ICT project management

ICT project management refers to planning, organising, directing, and controlling resources to achieve specific goals within Information and Communication Technology projects. These projects often involve developing, implementing, or enhancing technology systems, software, hardware, and networks. Effective ICT project management ensures that projects are completed on time, within budget, and meet the desired quality standards. ICT project management is critical in today's digital age, as organisations increasingly rely on technology to achieve their strategic goals. However, it also presents unique challenges, such as managing rapidly evolving technologies, ensuring data security, and aligning ICT projects with business objectives (PMI, 2021).

2.2 Definition and scope of ICT project management

A project is pursuing a specific objective, which involves completing tasks and utilising resources (Munns & Bjeirmi ,1996; PMI, 2017, as cited in Pereira, et al., 2022). Projects must adhere to set specifications and have a clearly defined start and finish. It is widely recognised that a project represents a unique undertaking, meaning it is a distinct effort that has not been attempted before (Dvir et al., 2003, as cited in Pereira, et al., 2022).

Key aspects of ICT project management include PMI (2021):

- Project planning entails defining project objectives, scope, timelines, and resource allocation. This phase involves creating a detailed project plan that outlines tasks, milestones, and deliverables.

- Risk management includes identifying potential risks and developing strategies to mitigate them. This is crucial in ICT projects due to the rapid pace of technological change and the complexity of systems.
- Stakeholder management enables organisations to engage with stakeholders, including clients, team members, and end-users, to ensure their needs and expectations are met.
- Resource management entails allocating and managing resources such as personnel, technology, and budget to ensure efficient project execution.
- Quality assurance ensures that the project deliverables meet the required standards and specifications. This often involves testing and validation processes.
- Monitoring and control include tracking project progress, managing changes, and ensuring that the project stays on track.
- Closure and evaluation are about formalising project completion, documenting lessons learned, and evaluating project outcomes.
- The importance of ICT project management in public sector organisations including SITA.

2.3 The importance of ICT project management in public sector organisations including SITA.

The SITA is responsible for many ICT projects with various levels of complexity within the South African public sector. There is currently considerable dissatisfaction among SITA customers due to the low success rate of SITA projects and frequent project delays (State Information Technology Agency, 2023). Customer satisfaction can be explained as the extent to which customers feel pleased or satisfied with a company's products and services (Khan et al., 2020). SITA, as a government entity in South Africa, was established to provide service delivery advantages to its various stakeholders (Mahajan et al., 2023). So, this current situation has resulted in a negative perception of the organisation and diminished customer trust and loyalty.

ICT Projects are key enablers for organisations to achieve their set strategic goals (Kerzner, 2011). The delivery and management of projects using a matured process has become even more crucial for the SITA and other public sector organisations. The attainment of a higher level of project management maturity has a positive effect on the organisation's ability to deliver projects effectively, according to Karim et al. (2023). This requires improved project management maturity and will address the challenges and issues currently hindering SITA in obtaining higher project management effectiveness. Enhancing the effectiveness and quality of project delivery by SITA will ultimately lead to increased stakeholder satisfaction and public service delivery (Sitorus & Yustisia, 2018).

2.4 Challenges in the ICT project management

Project management faces significant challenges as articulated below, stemming from governance and oversight issues, inefficient processes, and resource limitations, such as insufficient budgets and skilled personnel. Stakeholder management difficulties, unclear roles and responsibilities, and poor communication further complicate project execution. Additionally, ineffective risk management can leave projects vulnerable to unforeseen obstacles, jeopardising their success.

2.4.1 Governance and oversight issues

The challenge of governance and oversight can arise when a project fails to comply with the regulatory standards set by the industry framework. For instance, the healthcare and financial sectors face specific requirements regarding the management of patient medical records and customer financial data. Non-compliance with these regulations can result in projects failing to meet their objectives and may even lead to fines for the organisations implementing them.

The project manager must carefully navigate the complex regulatory framework surrounding the project to ensure its success while adhering to legal and ethical standards. Strong project management practices are essential to meet compliance requirements and minimise risks associated with failing to comply with industry-specific regulations (Akindote *et al*., 2024).

2.4.2 Process issues

Project management procedures are structured into coherent categories of inputs, tools and techniques, and outputs customised to align with the organisation's requirements, the project's specifics, and stakeholder expectations. These process groups are not synonymous with project phases but rather function collaboratively throughout every phase of the project's life cycle (Hashfi & Raharjo, 2023).

Projects that follow a process-based approach can be divided into five groups, each corresponding to distinct processes (Hashfi & Raharjo, 2023):

1) Initiating Phase: This phase focuses on defining and securing approval for a new project or phase. It involves developing a project charter and establishing a formalised initiation process to guide project management decisions and enhance the likelihood of project success. If an organisation fails to develop an effective and realistic project charter alongside a strong business case, it can have significant adverse effects on the organisation and reduce the likelihood of achieving project objectives (Menon, 2024).

2) Planning Phase: During this phase, the project's scope is defined, objectives are clarified, and the steps needed to achieve these objectives are determined. It involves outlining the course of action, making decisions, and formalising the project's direction. Planning is a critical step, occurring after business planning and before project execution, particularly in fields like construction. Accurate time and cost estimations are critical for project planning. However, many projects suffer from overly optimistic or unrealistic estimates. Flyvbjerg (2021) highlights that inaccurate estimations often stem

from cognitive biases, lack of historical data, or insufficient risk analysis, leading to budget overruns and schedule delays.

3) Execution Phase: This phase involves carrying out the tasks outlined in the project management plan to meet the project's requirements. It includes the actual implementation of project activities as specified in the plan to achieve the project's goals. During the implementation phase of a project, there may be quality control issues especially when a project is facing tight deadlines which will lead to poor quality outputs (ISO 21502, 2021).

4) Monitoring and Controlling Phase: This phase focuses on tracking progress, evaluating performance, and implementing adjustments to ensure the project stays on track. Effective monitoring and control rely on timely information and the ability to manage unexpected challenges. Scope creep refers to uncontrolled changes or continuous growth in a project's scope, often without adjustments to time, cost, or resources. This can make monitoring and controlling difficult, as the original project baseline becomes irrelevant (PMI, 2021). Effective change management processes are required to mitigate this challenge.

5) Closing Phase: It is crucial to establish a formalised project assessment during the project initiation phase and to implement project evaluation processes throughout the entire project lifecycle. Without such structured and well-defined processes, project evaluations and reported successes may become informal or subjective. This lack of formalisation can lead to projects failing to determine whether stakeholder needs were adequately addressed and can hinder stakeholder involvement in the evaluation process (Pereira *et al*., 2022).

2.4.3 Resource constraints

A lack of financial and human resources is a major obstacle to successful digital transformation in organisations. This challenge often appears as insufficient budgets to acquire and implement for example cybersecurity technologies within digital transformation programs. Furthermore, a lack of human resources can be identified by the shortage of skilled personnel to carry out these projects further complicates progress (Hendrawan *et al*., 2024).

To address these resource limitations, organisations can develop a strategic technology plan aligned with their long-term goals. This involves identifying specific technological needs, setting appropriate budgets, and ensuring technology adoption supports the achievement of business objectives. An essential next step is selecting and integrating suitable systems. Organisations should prioritise system compatibility, data security, scalability, and access to technical support, including routine maintenance and updates, to ensure seamless operations. Furthermore, the empowerment of employees with the skills needed to use new technologies effectively is critical. This can be achieved through internal training, digital skills development, and continuous learning initiatives to stay up to date with emerging technological trends (Hendrawan *et al*., 2024).

2.4.4 Stakeholder management and change management

Stakeholder resistance to changes brought by the implementation of the project can also pose a challenge to effective project execution. When project stakeholders are not fully supportive of the project this can lead to lengthy project delays or even project failure. According to Errida and Lofti (2021) the inability to address resistance represents a significant shortcoming for change management teams, while successfully managing resistance is crucial for achieving effective change management. Change initiatives demand active involvement and strong commitment from all key stakeholders, including employees, supervisors, and managers.

According to Menon (2024) implementing change management practices enables organisations to effectively manage and address customer needs and expectations. Furthermore, effective project change management is required to ensure that stakeholders' expectations and actions are aligned with the project plans and outcomes. A working change management process will improve the technological adoption by the respective organisation (Akindote *et al*., 2024)

2.4.5 Unclear roles and responsibilities

Ambiguity in roles and responsibilities can severely impede a project's success by fostering confusion, inefficiencies, and conflicts within the team. When team members are uncertain about their specific tasks or boundaries, it often results in duplicated work, missed deadlines, and a lack of accountability. Such uncertainty can also hinder effective communication, as individuals may not know who to contact for particular issues or decisions, ultimately delaying progress. Pinto (2020) argues that unclear responsibilities can lead to gaps in project execution, where essential tasks might be neglected or mismanaged. This can undermine the quality of the project's outcomes and heighten the likelihood of failure.

2.4.6 Ineffective risk management

The ISO 31000 Standard for Risk Management describes "risk" as the influence of uncertainty on achieving objectives, noting that this influence can result in either positive or negative deviations from expected outcomes (Mabelo, 2023). Project risks may emanate from human actions or natural events. While some project risks are anticipated, others are unexpected and beyond the foresight of project managers. If not addressed or mitigated, such risks can negatively impact the project and the effectiveness of the ICT project. It is the responsibility of the project team to work together and use suitable tools to effectively manage and reduce these risks which will lead to the attainment of project objectives. Project management plays a critical role in ensuring that risks associated with a project are either eliminated or minimised. (El Khatib *et al*., 2022).

An effective risk management process improves an organisation's ability to execute a project as planned by proactively identifying and addressing obstacles that could hinder the achievement of established objectives (Mabelo, 2023). The risk management

process aims to continuously identify, analyse, address, and monitor risks. This ongoing process is systematically applied throughout the entire lifecycle of a project. It can be utilised to manage risks associated with the lifecycle of a project (ISO/IEC 15288, 2015, as cited in Mabelo, 2023).

2.5 Definition of Project Management Maturity

The concept of project management maturity has evolved from focusing solely on an organisation's ability to complete tasks and achieve continuous improvement to emphasising its project management capabilities and readiness to execute projects effectively (Karim et al., 2023). It is a critical factor in ensuring that organisations can successfully deliver and implement ICT projects, which drive productivity and efficiency.

2.6 Overview of Project Management Maturity

I. Project Management Maturity Model (K-PMMM)

To advance project management maturity, Kerzner (2019) suggests that organisations should invest in employee recruitment and training, adjust staff roles, and secure management support. These efforts may also involve upgrading computer systems and software, engaging unions to revise job descriptions, and strengthening relationships with key stakeholders.

Martins et al. (2021) applied Kerzner's Project Management Maturity Model (K-PMMM) to the biotechnology industry, outlining five maturity levels:

1. Common Language
2. Common Processes
3. Singular Methodology
4. Benchmarking
5. Continuous Improvement

Fabbro and Tonchia (2021) highlighted that achieving project management maturity relies on skilled teams, adherence to robust frameworks, a well-established project management culture, updated processes, effective knowledge management, and a clearly defined role for the Project Management Office (PMO).

II. The Organizational Project Management Maturity Model (OPM3)

The Organizational Project Management Maturity Model (OPM3), developed by the Project Management Institute (PMI) between 1998 and 2013, is a framework designed to help organisations evaluate their maturity in organisational project management against global best practices. Its primary objective is to enable organisations to achieve success in managing projects, programs, and portfolios effectively.

Key benefits of OPM3 include aligning organisational strategies with individual projects through the application of project management principles, gaining a thorough

understanding of proven organisational project management methods, and identifying which best practices and capabilities to adopt or avoid. Additionally, OPM3 aids organisations in prioritising and planning improvements in critical areas of portfolio, program, or project management, ensuring a more strategic and efficient approach to achieving organisational goals. (PMI, 2013; Silva et al., 2014, as cited in Fabbro et al., 2021).

OPM3 incorporates five distinct levels of maturity:

- **Level 1:** Represents an initial or basic process.
- **Level 2:** Involves a structured process with established standards.
- **Level 3:** Reflects an organisational standard and an institutionalised process.
- **Level 4:** Signifies a fully managed process.
- **Level 5:** Represents an optimised process, achieving the highest level of maturity.

This model emphasises that advancing organisational maturity is achieved by the following (Fabbro *et al*., 2021) :

- Acquiring knowledge about best practices, capabilities, and effective methods for implementing the model.

- Conducting evaluations and assessments of existing best practices.

- Improving best practices through the integration and aggregation of capabilities.

The model identifies targeted outcomes, provides recommendations, and proposes Key Performance Indicators (KPIs) to help organisations enhance project management efficiency and optimise resource utilisation (Yerenskaya, 2017). Nenni *et al*. (2014) supported the findings of Khoshgoftar and Osman (2009), asserting that OPM3 stands out as the superior maturity model for improving organisational performance. They highlighted its consistent and systematic approach as a significant advantage.

III. IPMA Delta Model

In 2016, the International Project Management Association (IPMA) introduced a methodology known as "IPMA Delta" (Version 1.1) to certify an organisation's proficiency in utilising project management techniques (Fabbro et al., 2021).

The IPMA Delta Model is structured around three key modules (Fabbro et al., 2021):

- Module I (Individuals): This module assesses the competencies of individuals, including project, program, and portfolio managers, project staff, senior executives, and administrative or support personnel. The evaluation focuses on both the experience and knowledge of individuals within their respective roles.
- Module P (Projects): This module involves the evaluation of specific projects. It examines the outcomes and successes of completed projects, as well as the

implementation of agreed-upon project management methods and tools in those projects.

- Module O (Organisation): This module evaluates the organisation's overall competence in managing projects, primarily from the perspective of top management. It provides support to management and ensures that administrative members are appointed to facilitate the smooth and successful execution of projects. This assessment is primarily conducted through interviews with the organisation's top management and the coordinators overseeing the project management system.

IPMA Delta outlines five levels of competence, referred to as "Classes," which are as follows (Fabbro et al., 2021):

a) Initial: The organisation lacks formal Project Management (PM) standards, structures, and processes.

b) Defined: The organisation has partially adopted PM standards, structures, and processes.

c) Standardised: The organisation has well-defined PM standards, structures, and processes that are officially endorsed.

d) Managed: The organisation has fully established PM standards, structures, and processes that are consistently implemented and monitored across the enterprise.

e) Optimised: The organisation has fully developed PM standards, structures, and processes that are fully integrated, regularly reviewed, and continuously improved and optimised by its management.

This evaluation determines the competence class that applies to the organisation as a whole and identifies which modules (I, P, O) are relevant. The assessment results provide a detailed analysis of areas needing improvement, along with recommendations for refining specific aspects in the future (Fabbro et al*.,* 2021).

The key benefits of the assessment include: a thorough and transparent evaluation of the current maturity level in project and program management; a foundation for aligning the organisation's strategic direction in project and program management with the oversight of top leadership; a basis for organisational planning and growth; and enhanced understanding and communication among stakeholders, including top management, about the importance of project management in driving performance improvements (Fabbro *et al*., 2021).

IV. Portfolio, Program & Project Management Maturity Model (P3M3) and PRINCE2 Maturity Model (P2MM)

The Portfolio, Program, and Project Management Maturity Model (P3M3) was introduced in 2006 by the UK’s Office of Government Commerce (OGC), the same

organisation that developed and championed the PRINCE2 methodology ("Projects IN Controlled Environments"), which originated in 1989 (Fabbro *et al.,* 2021).

The P3M3 framework is structured around five maturity levels (Fabbro et al., 2021):

- Level 1: Initial awareness of processes.
- Level 2: Processes are repeatable.
- Level 3: Processes are clearly defined.
- Level 4: Processes are managed and controlled.
- Level 5: Processes are optimised for continuous improvement.

P3M3 includes three independent sub-models that can also be used separately (Fabbro et al., 2021):

- Portfolio Management (PfM3),

- Program Management (PgM3),

- Project Management (PjM3).

Each sub-model is structured around seven process perspectives: organisational governance, management control, benefits management, risk management, stakeholder management, finance management, and resource management. P3M3 assesses the processes of project management, the competencies of professionals, the tools utilised, and the management information provided to drive improvements (Fabbro et al., 2021).

The PRINCE2 Maturity Model (P2MM) is a standard derived from P3M3, designed for organisations that have adopted PRINCE2 instead of using the Project Management Maturity Model (PjMM), which is one of P3M3's sub-models. P2MM closely mirrors the structure of P3M3 and shares the same seven process perspectives, addressing key aspects of project management and specific characteristics for each maturity level within these perspectives (OCG, 2019, as cited in Fabbro et al., 2021).

In 2012, Lianying et al., as cited in Fabbro *et al*. (2021) introduced a new project management maturity model called P2CMM, based on P2MM, where "C" stands for "Capability." This model incorporates a quantitative evaluation index system, a web survey tool, and a cobweb graph to visualise and communicate final improvements.

2.7 The Benefits of a Maturity Assessment

Conducting a project management maturity assessment provides numerous advantages for an organisation (Fabbro & Tonchia, 2021). It fosters competitiveness by driving continuous improvement and offers a structured roadmap with clear objectives for enhancement. Additionally, regular assessments can serve as a promotional tool, showcasing the organisation’s dedication to progress and improvement. Advancing project management maturity can also position the organisation to secure more profitable business contracts.

2.8 ICT Project Success Factors

Success can have multiple interpretations, varying based on perspective and the stakeholder. Success is subjective and can hold different meanings for different individuals (Freeman & Beale,1992, as cited in Pereira, et al., 2022). Critical Success Factors (CSFs) are key areas whose satisfactory performance ensures competitive success (Rockart, 1979, as cited in Menon, 2024). Research by Pinto and Slevin (1987), Somers and Nelson (2001), and Menon (2016, 2019, 2020) has deepened the understanding of CSFs and their role in project performance (Menon, 2024).

To evaluate the success of a project, two distinct perspectives can be considered. The first view a project is successful if it achieves all relevant organisational objectives during its execution, placing less emphasis on adherence to a set schedule, budget, and quality. The second perspective defines success based on the project's compliance with a set schedule, budget, and quality standards, without prioritising the achievement of organisational objectives (Pereira, et al., 2022).

2.9 Best practices and standards in ICT project management

Project management has evolved significantly over 4,500 years, from ancient constructions like the Pyramids and Taj Mahal to modern practices. Its prominence grew during the Industrial Revolution and beyond, with Henry Gantt’s Gantt chart marking the birth of modern project management in the early 20th century. The field advanced further in the 1950s and 1960s with the development of the Critical Path Method (CPM) for scheduling and the Program Evaluation and Review Technique (PERT) for time estimation and risk management, solidifying its role as a critical discipline (Menon, 2024).

Delisle and Olson (2004) as cited in Menon, (2024) highlight that there is no universally agreed-upon definition for the term "best practices." PMI (2021) defines best practices as reliable and widely applicable good practices that can be consistently used across projects. However, Chapman (2006) as cited in Menon (2024) contends that the practices outlined in the PMBOK are more accurately described as common practices rather than best practices. Best practices typically refer to techniques, tools, methods, or approaches that have proven effective in achieving desired outcomes. To enhance performance and address challenges, organisations should combine the adoption of best practices with benchmarking (Besner & Hobbs, 2012; Alias et al., 2012, as cited in Menon, 2024).

Adopting project management best practices is essential for organisations to efficiently achieve their objectives and goals. Implementing suitable best practices can boost organisational effectiveness, promote consistency and uniformity across departments, and ensure smooth operations (Kerzner, 2023, as cited in Menon, 2024). However, identifying the right best practices that align with an organisation's goals and objectives can be a complex process. In this section, we will explore several best practices that can help organisations excel (Menon, 2024).

The followings are the guides and standards for project management, such as PMBOK (PMI, 2017,as cited in Pereira, *et al*., 2022), PRINCE2 (AXELOS, 2017, as cited in Pereira, *et al*., 2022), the RIBA Plan of Work (RIBA, 2020, as cited in Pereira, *et al*., 2022), ICB-IPMA Competence Baseline (IPMA, 2016, as cited in Pereira, et al*.,* 2022), PM2 (EU, 2018,as cited in Pereira, et al., 2022), and the APM Body of Knowledge (APM, 2019,as cited in Pereira, et al., 2022), are highly valuable in this context. Beyond project management standards, other resources like maturity models—such as the Capability Maturity Model Integration (CMMI, 2018 as, cited in Pereira, et al*.,* 2022) and the Organizational Project Management Maturity Model (OPM3) (PMI, 2013, as cited in Pereira, et al., 2022) are also available.

Furthermore, organisations often benchmark their processes and practices against top-tier global entities, as well as frameworks like PMI's Project Management Competency Development Framework (PMCDF) (Kerzner, 2023, as cited in Menon, 2024).

2.10 Benchmarking on project management best practices

The idea of benchmarking is closely tied to Total Quality Management (TQM), which focuses on continuous improvement and regularly evaluating an organisation's performance against that of leading competitors (Alias et al., 2012, as cited in Menon, 2024). Benchmarking helps organisations pinpoint weaknesses, identify gaps, and assess whether the implementation of best practices has led to meaningful improvements. It is considered one of the most effective methods for evaluating progress and performance.

2.11 Importance of the study ICT Project Management in the South African Context including SITA

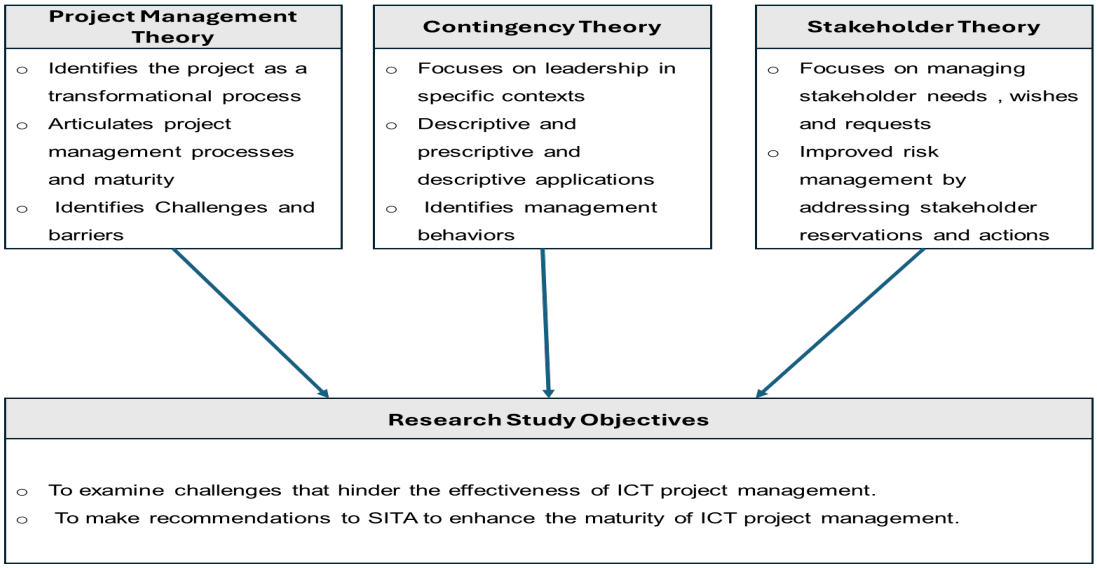
Efficient and mature project management functions will result in faster and more reliable ICT service delivery, enhancing service provision to citizens. The Department of Communications and Digital Technologies (DCDT) will be better positioned to improve overall citizen service delivery across the South African public service sector through enhanced ICT project management. All government departments and entities will also benefit from more effective service delivery driven by improved project management practices. However, without this study, the National and Provincial Parliament, along with Parliamentary Audit Committees, will miss the opportunity to oversee the implementation of recommendations aimed at advancing SITA's project management practices.

Through this study, SITA senior management will gain valuable recommendations to drive the maturity of project management within the organisation and achieve its strategic goals. Programme managers, project managers, and project leaders will receive enhanced support emanating from recommendations of this study, to perform more effectively in their roles. Citizens will benefit from improved service delivery enabled by reliable ICT services, supported by robust ICT project management. Additionally, the DCDT, national departments, state organs, and other Western Cape provincial

departments will have the opportunity to learn from and benchmark against the study's findings and recommendations.

2.12 Theoretical framework for the study

Figure 1: Theoretical framework of the study



Source: Authors' synthesis

According to Varpio et al. (2020) a theoretical framework outlines how a researcher applies a theory within a specific study, linking concepts and principles derived from one or more theories to form a cohesive foundation for the research. It is crucial since it supports the study's structure (Grant and Osanloo, 2014, as cited in Zawacki-Richter et al., 2020).

This research study adopted the theory of project management and contingency theory, which are explained below.

2.12.1 Project Management Theory

The project management theory views projects as transformation processes that convert inputs into outputs Shenhar and Dvir (2007). This theory was chosen as it best supported and enabled the study to define project management aspects such as process and maturity, articulating key challenges and barriers related to project management effectiveness. The project management theory has enabled this research study to gain insight into the variables adopted in the study, by providing an understanding of the sub-elements of the variables and the associations between the variables of the study. The recommendations for improving project management were also influenced by this theory.

2.12.2 Contingency management

Contingency theory addresses how leadership elements are relevant in specific contexts, distinguishing between descriptive and prescriptive applications. Descriptive contingency theory describes how a leader's behaviour varies in different situations, while prescriptive theory identifies effective leadership traits in particular organisational contexts (Yukl et al., 2020). This theory was selected as it is best suited to support the research study in exploring management behaviours essential for enhancing the project management function.

2.12.3 Stakeholder theory

The stakeholder theory is focused on how an organisation creates benefits for its different stakeholders. This theory was used to emphasise the importance of SITA properly and effectively managing stakeholder requirements, wishes and requests when managing projects (Mahajan et al., 2023). Furthermore, it was also chosen to further understand how SITA could improve risk management regarding risks that might delay or halt projects if stakeholder reservations and actions are not effectively managed. g

2.12.4 Integrating the theories

The Project Management Theory establishes the foundational framework for comprehending project processes and associated challenges. Contingency Management introduces the critical dimension of adaptive leadership and management practices, enabling project management strategies to be customised to the specific organisational context of SITA. Concurrently, Stakeholder Theory emphasises the integration of stakeholder needs and risk considerations into the project management process, thereby enhancing communication and fostering meaningful engagement. The synthesis of these theories results in a comprehensive framework that addresses SITA's project management challenges holistically, ensuring alignment between processes, leadership practices, and stakeholder engagement to achieve successful project outcomes.

2.12.5 Linking the theories to the research objectives

The table presented below aligns the research objectives with the above-established theoretical framework, ensuring a focused and structured methodology to thoroughly investigate the challenges that impede effective project management at SITA.

Table 1: Linking the theories to the research objectives

Research Objectives	Theoretical Frameworks	Link to Theory
To examine challenges that hinder the effectiveness of the ICT project management at the SITA in the Western Cape province.	Project Management Theory	This theory enabled the study to define project management aspects such as process and maturity, articulating key challenges and barriers related to project management effectiveness
	Contingency Management	The theory was used to explore management behaviours that contribute in ineffective project management.

	Stakeholder Theory	This theory enabled the research study to highlight the importance of properly managing stakeholder needs in relation to effectiveness of a project.
To make recommendations to SITA to enhance the maturity of ICT project management.	Project Management Theory	The theory was applied to identify and propose necessary improvements in project management capabilities and further enhancements, with the aim of improving the effectiveness and advancing the maturity of SITA's project management function.
	Contingency Management	This theory was employed to identify the essential management behaviours necessary to facilitate effective project management within SITA. The active participation and support of senior management in projects will enhance project management capacity and empower project management teams across the organisation.
	Stakeholder Theory	The theory was utilised to advocate for enhanced stakeholder management, aimed at increasing stakeholder engagement in projects. This approach will help mitigate risks associated with stakeholder apathy.

Source: Authors' synthesis

3. Problem statement

Research indicates that mature project management capabilities are essential for organisations to effectively deliver ICT projects (Karim et al., 2023; Pace, 2019). Improving government service delivery and ICT innovation relies on SITA's well-developed project management function.

The proposed study will address several challenges, including:

The lack of a standardised and institutionalised project management framework leads to inconsistent department practices (Kamaldien, 2012; Van der Waldt, 2020). Lack of stakeholder buy-in on the projects requires active support from SITA's top management. Improved project budget management is needed to prevent overspending and adversely affecting client departments' financial health (Ciric et al., 2022; Khoza and Marnewick, 2020; Sidlayiya, 2022). Insufficient support for project managers as there is a lack of adequate appointment and training for project managers, which can hinder project success (Mahote, 2022; Kerzner, 2019).

Inadequate project management software due to the absence of institutionalised project management software and tools, forces project managers to rely on manual processes, leading to delays and inaccuracies in reporting (Wen and Qiang, 2019; Isaacs,

2018). Communication challenges emanating from poor communication with project stakeholders contribute to project failures, as timely communication is critical for addressing challenges (Gusha, 2022).

The following are project management challenges and issues faced by SITA. Ineffective project management function that results in projects that are not completed on time and poor quality. The client departments are dissatisfied with the project performance of SITA also due to constant project delays, lack of effective communications and poor change management. SITA projects are also troubled by ineffective budget and contract management resulting in overspending of budgets and contracts expiring without proper succession. There is a high turnover of programme project managers which contributes to project management ineffectiveness.

4. Aim and objectives of the study

This study aims to explore the barriers affecting the effectiveness of ICT project management at SITA. The study aims to achieve the following objectives:

- To examine challenges that hinder the effectiveness of the ICT project management at the SITA in the Western Cape province.
- To provide strategic recommendations for SITA to enhance the maturity and effectiveness of ICT project management

5. Research design and methodology

The following are the research design and methodology adopted for this study.

5.1 Research Design

This study employed an exploratory research design to examine challenges hindering the effectiveness of ICT project management. It aimed to recommend practical steps SITA can consider to improve the effectiveness and maturity of its project management capability. The design facilitated the use of in-depth semi-structured interviews with participants, providing the flexibility needed to gain a comprehensive understanding of the topic. The insights gathered from these interviews resulted in significant findings, which led to practical recommendations for SITA and the development of an actionable roadmap to improve project management effectiveness.

5.2 Target Population

The target population represents the specific group of individuals selected for the research study, from which the sample was drawn (Saunders et al., 2023). The study focused on a finite group of 16 staff members within SITA. This group primarily included programme managers, senior project managers, project managers, and project support staff. The core project management responsibilities were undertaken by programme managers, senior project managers, and project managers, while support staff provided crucial administrative and logistical assistance.

5.3 Sampling Strategy

Purposive sampling was selected to directly identify participants who could effectively address the research questions and achieve the study's objectives. This method is particularly suitable for small participant groups, making it appropriate for this study. Additionally, purposive sampling facilitates the collection of rich, detailed information, offering greater depth than statistically representative methods (Saunders et al., 2023).

5.4 Data Collection Method

The pilot study findings were not included in the main research but were instrumental in refining the data collection tool. One key outcome was the adoption of Microsoft PowerPoint to facilitate smooth transitions between interview questions. Minor grammatical adjustments were made to the questions; however, the overall relevance of the questions was confirmed, and no significant changes were required. The allotted time for the interviews was also deemed appropriate.

The data collection process involved semi-structured interviews guided by a pre-determined list of themes and key questions related to those themes. These interviews provided structure while allowing flexibility for deeper exploration. A total of 10 one-on-one interviews were conducted via Microsoft Teams, with each session lasting approximately one hour. All interviews were recorded for analysis. The data collection instrument was designed to align with the study's objectives and key research questions. It included a section for collecting demographic information about participants. The questions were structured to address the research objectives. The semi-structured interview format supported the exploratory nature of the study, enabling a deeper understanding of the relationships between the variables under investigation (Saunders et al., 2023).

5.5 Data Analysis

Thematic analysis involves identifying patterns of meaning within data through a systematic coding process (Braun and Clarke, 2006, as cited in Saunders et al., 2023). This method is valuable for organising and interpreting extensive qualitative data, uncovering key themes, and developing explanations or conclusions based on those thematic patterns (Saunders et al., 2023).

The data analysis for this study followed these key steps (Saunders et al., 2023):

- **Familiarisation:** The initial step involved gathering and thoroughly reading the interview transcripts multiple times to fully understand the data.
- **Theme Identification:** Key themes and relevant associations were then identified within the data.
- **Theme Refinement:** The identified themes were further refined, clarified, and validated using Microsoft Word to ensure accuracy and coherence.

The collected data were analysed in alignment with the transcriptions, which were prepared using audio recordings to capture participants' responses (Saunders et al., 2023).

5.6 Trustworthiness

To ensure the trustworthiness of a research study, four key principles must be considered: credibility, transferability, dependability, and confirmability (Lincoln and Guba, 1985, as cited in Nassaji, 2020). Lincoln and Guba (1986) as cited in Amin et al. (2020) further argue that the criteria for trustworthiness are complete when authenticity is included. Incorporating authenticity enabled the researcher to address critical aspects such as power dynamics, pluralism, diverse values, representation, empowerment, and accountability.

6. Results and Discussion

The following section presents the research findings along with the corresponding discussion. Thematic analysis was employed to interpret the data collected, followed by a discussion that integrates the findings with relevant academic literature.

6.1 Table of results

The table below organises the key themes emerging from the research project in alignment with the research objectives of this study.

Table 2 : Thematic presentation of results

Objective	Main Theme
To examine challenges that hinder the effectiveness of the ICT project management at the SITA in the Western Cape province.	Theme 1: Governance for project management
	Theme 2: Need for a benchmarking exercise
	Theme 3: Project Management Skills
To provide strategic recommendations for SITA to enhance the maturity and effectiveness of ICT project management.	Theme 4: Stakeholder Management
	Theme 5: Project Capacity Management
	Theme 6: Project management advocacy
	Theme 7: Support to the project management team

Source: Authors' synthesis

The table below presents a structured summary of the research focus areas, aligning each objective with corresponding questions and highlighting key findings that address them.

Table 3: Linking of research objectives, questions and findings

Research Objectives	Research Questions	Findings / Themes
To examine challenges that hinder the effectiveness of	What are the challenges that hinder the effectiveness of	Governance for project management

ICT project management.	ICT project management at the SITA in the Western Cape?	Need for a benchmarking exercise
		Project Management Skills
To provide strategic recommendations for SITA to enhance the maturity and effectiveness of ICT project management.	What recommendations can be made to the SITA in the Western Cape to enhance the maturity of ICT project management?	Stakeholder Management
		Project Capacity Management
		Project management advocacy
		Support to the project management team

Source: Authors' synthesis

The table below quantifies the occurrence of each theme mentioned by respondents, offering insight into the critical issues and strategies impacting ICT project management effectiveness in SITA.

Table 4: Responses rate percentage on findings/themes

Respondents	Theme	Frequency	Percentage (%)
10	Governance for project management	7	70 %
	Need for a benchmarking exercise.	8	80%
	Project management skills	6	60%
10	Stakeholder management	5	50%
	Project capacity management	5	50%
	Project management advocacy	6	60%
	Support to the project management team	4	40%

Source: Authors' synthesis

The respondents indicated that benchmarking (80%) and governance for project management (70%) are the highest priority areas. These themes suggest improving standards, processes, and performance measurement. Project management skills (60%) and advocacy (60%) are also significant, pointing to a need for skill development and greater organisational recognition of project management's value. Stakeholder management (50%) and project capacity management (50%) highlight the importance of balancing external and internal project demands, while support to the project management team (40%) indicates room for improvement in providing the necessary resources and backing for teams. Overall, the data suggests that while strong foundations are in place, opportunities exist to enhance governance, skills, stakeholder

engagement, and organisational support to further improve project management effectiveness.

6.2 Discussion

6.2.1 Objective 1: To examine challenges that hinder the effectiveness of the ICT project management at the SITA in the Western Cape Province.

Theme 1: Governance for project management

The lack of effective governance for project management is a critical element that contributes to the challenges that hinder the effectiveness of ICT project management.

Participant 1: *"SITA Processes have too much bureaucracy with that process, especially the supply chain process."*

Participant 2: *"Need for effective project management governance."*

Participant 3: "*Risk management and also just making sure there is there's proper engagement of stakeholders."*

Participant 4: *"Lack of empowerment and support for project managers."*

Participant 7: *"Lack of clear project management policy and procedures."*

Participant 8: *"Need for senior management participation in projects."*

Participant 9: "Provide sufficient resources."

Seventy percent (70%) of the participants highlighted several challenges in project management, including excessive bureaucracy in SITA processes, particularly in the supply chain, and a lack of clear policies and procedures. They emphasised the need for effective governance, stakeholder engagement, risk management, and greater empowerment and support for project managers. Additionally, participants called for increased senior management involvement and the provision of sufficient resources to ensure project success. Developing a strong project management culture plays a key role in promoting effective enterprise project governance (Aslanova, 2018).

Theme 2: Need for a benchmarking exercise

A lack of proper benchmarking within the organisation limits its ability to access and learn from industry best practices, which are essential for enhancing the effectiveness of its project management.

Participant 3: *"A space for improved advocacy for project management project management practices by senior management."*

Participant 4: *"Need collaboration."*

Participant 5: *"Lack of an extensive Client or stakeholder engagement framework that is not in place."*

Participant 6: "*The world standard that we are operating on, it's improving and it is a global standard of project management of which if the PMO improves to that level then they will have to adhere to the global standards that is provided by Improves project governance."*

Participant 7: "*Standardised Project Management policy and procedures."*

Participant 8: *"The project management office must ensure implementation of project management governance, project management processes optimisation and project management standards."*

Participant 9: *"So, company ICT policies and technology as well must be up to standard."*

Participant 10: *"When senior managers are recruiting senior project managers, it becomes a challenge. One of the root causes for the difficulty is the nature of employment and short-term contract."*

Eighty percent (80%) of participants emphasised the need for stronger advocacy and support from senior management to improve project management practices, along with enhanced collaboration and stakeholder engagement frameworks. They highlighted the importance of aligning with global project management standards, optimising processes, and implementing standardised policies and governance to ensure effectiveness. Additionally, challenges such as outdated ICT policies, technology standards, and the recruitment of senior project managers on short-term contracts were identified as barriers to progress. Benchmarking enables organisations to uncover weaknesses, recognise gaps, and evaluate whether adopting best practices has driven significant enhancements. It is widely regarded as one of the most efficient approaches for measuring progress and performance (Menon, 2024).

Theme 3: Project Management Skills

The level of maturity and availability of project management skills within an organisation plays a critical role; if these skills are inadequate or underdeveloped, it will lead to ineffective ICT project management.

Participant 1: "*If you don't do proper change management and if you don't engage the clients and people are not aware of this product that you want to bring to them, they are likely not to use that and then."*

Participant 4: *"High turnover of Project managers."*

Participant 5: *"High project manager turnover can be caused by lack of sufficient capacitation, lack of competitive remuneration and lack of skills."*

Participant 6: *"Championing project management practices."*

Participant 7: *"Need for effective orientation for newly appointed project managers and continuous support, not left on their own to figure the SITA process for the next steps on projects. "*

Participant 9: "*Provide sufficient resources.*"

Sixty percent (60%) of the participants highlighted the importance of effective change management and client engagement to ensure product adoption, as well as addressing high project manager turnover caused by inadequate training, low pay, and skill gaps. They emphasised the need for championing project management practices, providing proper orientation and ongoing support for new project managers, and ensuring sufficient resources are available. These measures are crucial for improving project success and retention of skilled project managers.

Providing training for project managers and stakeholders is crucial for developing technical project management competencies within an organisation (Bezerra et al., 2021). Furthermore, Kamaldien (2012) emphasised the importance of enhancing the behavioural skills of project managers and advocated for ongoing training initiatives backed by management support.

6.2.2 Objective 2: To provide strategic recommendations for SITA to enhance the maturity and effectiveness of ICT project management.

Theme 4: Stakeholder Management

Adequate or sufficient stakeholder management in a project can positively contribute to the project's success in achieving its intended objectives or goals.

Participant 2: *"We cannot do projects without the inclusion and engagement of project stakeholders."*

Participant 3: *"Yes, I do. including of stakeholders and engagement in a project can enhance the maturity of the project."*

Participant 4: *"And we should look at better ways of improving that KPI and that will improve the client satisfaction because what the client want is they come to you, they give you money, they expect something in return, something in return on time."*

Participant 9: *"Yes. The client must have an idea as to what is project management, what is, what is it that is going to be done."*

Participant 10: *"Definitely. Sometimes you find yourselves at loggerheads, because of not understanding basic project management."*

50 percent (50%) of the participants emphasised that involving and engaging stakeholders in projects is vital for increasing project maturity and achieving successful results. Enhancing KPIs tied to stakeholder engagement can improve client satisfaction, as clients anticipate receiving clear and timely outcomes for their investment. Furthermore, establishing a mutual understanding of project management fundamentals between clients and teams is key to preventing disputes and ensuring alignment on project objectives and workflows.

Errida and Lofti (2021) highlight that failing to address stakeholder resistance to change is a major weakness for change management teams, whereas effectively managing

resistance is essential for successful change implementation. For change initiatives to succeed, active participation and strong commitment from all key stakeholders, including employees, supervisors, and managers, are necessary.

Theme 5: Project Capacity Management

Project management effectiveness is critical in ensuring the effectiveness of the organisation's project management.

Participant 2: *"The current framework that we have now it's old, so it does not speak to the 4IR.I feel that discussion, you know needs to reside in a document and we need to have those targets as well that in in three years, this is where we are going to be because the whole world is moving towards that direction."*

Participant 3: *"So looking at the SITA-way for now, I think it's fine."*

Participant 4: *"Need to update SITA Project management methodology and framework. It shouldn't be version 2005. But we should gradually, improve it and modernise it."*

Participant 5: "*SITA Project management framework should have the flexibility to be customised to the client's ICT requirement."*

Participant 6: *"Need for centralised project management repositories and knowledge reuse."*

Fifty percent (50%) of the participants highlighted that the current SITA project management framework is outdated and does not align with the Fourth Industrial Revolution (4IR), emphasising the need for modernisation and clear targets to keep pace with global advancements. They suggested updating the framework to a more flexible and customisable system that meets clients' ICT requirements, moving beyond the 2005 version. Additionally, the importance of centralised project management repositories and knowledge reuse was emphasised to improve efficiency and consistency in project execution.

Martins et al. (2021) highlight the significance of establishing a structured project management framework to improve project management effectiveness and maturity. Similarly, Filmalter and Steenkamp (2021) underscore the need for continuous senior management support to sustain and strengthen the project management methodology and framework.

Theme 6: Project management advocacy

Advocating for project management is essential to securing support and ensuring shared acknowledgement of its role as a key facilitator in successfully delivering projects and achieving organisational objectives.

Participant 4: *"Investment in training for both project managers and all relevant stakeholders in project management."*

Participant 5: *"Yes, I think continuous training is definitely mandatory to be able to deliver a successful ICT project, basic project management training for other stakeholders as well."*

Participant 6*: "There is a need for basic project management training also for stakeholders for them to understand".*

Participant 8: *"Implement strategies to retain critical skills, it's very important that we develop, entertain critical skills."*

Participant 9: *"All stakeholders, must be aware that they are part of ensuring that projects are delivered successfully."*

Participant 10: *"Definitely. Sometimes you find yourselves at loggerheads, because of not understanding basic project management."*

Sixty percent (60%) of the participants indicated that continuous training in project management is essential for both project managers and stakeholders to ensure successful project delivery. Basic project management knowledge for stakeholders helps improve understanding, collaboration and reduces conflicts. Additionally, organisations should implement strategies to retain critical skills and emphasise stakeholder responsibility in project success. Advocacy raises awareness about the value of project management within an organisation, encouraging senior leadership to invest in resources, training, and governance structures (Kerzner, 2019). Strong leadership commitment improves project success rates by ensuring adequate support and alignment with organisational goals (PMI, 2021).

Theme 7: Support to the project management team

In order to enhance the effectiveness of SITA project management, the support of the project management team must be improved. This support includes the senior management resolving issues and challenges that are faced by projects. The training provided to project teams will also propel them to higher productivity.

Participant 1: *"We need to train our project managers in those new ways of managing projects because some of them are still used to the traditional ways."*

Participant 2: *"Additionally project managers must be trained for the following: softer side, as you said in terms of trying to improve; Interpretation and coordination; Conflict management; how to improve harmony in terms of our projects"*

Participant 6: *"Tools and software for project management."*

Participant 9: *"Capacitation of projects with skilled resources."*

Forty percent (40%) of the participants emphasised the need for project managers to be trained in contemporary project management methods, as some still depend on traditional practices. This training should cover soft skills, conflict resolution, coordination, and proficiency in project management tools and software. Furthermore, having skilled resources is essential for the successful execution of projects. A lack of

proper support for project managers is evident in inadequate appointment processes and insufficient training, both of which can negatively impact project effectiveness and overall success (Mahote, 2022; Kerzner, 2019).

7. Conclusions

The discussion highlighted several key challenges affecting ICT project management effectiveness at SITA in the Western Cape province. Governance issues, including excessive bureaucracy, unclear policies, and inadequate stakeholder engagement, were identified as major obstacles. Participants emphasised the need for a benchmarking exercise to align SITA's project management with global standards, optimise processes, and enhance collaboration. Additionally, concerns regarding project management skills were raised, particularly the high turnover of project managers due to insufficient training, low remuneration, and lack of orientation for new hires. Strengthening change management, ensuring sufficient resources, and championing best practices were suggested as crucial measures for improving project outcomes.

To enhance project management maturity, stakeholders stressed the importance of stakeholder engagement, as it directly impacts project success and client satisfaction. Updating SITA's project management framework to align with technological advancements and ensuring flexibility for client-specific needs were also highlighted. Advocacy for project management was deemed essential, with calls for continuous training for both project managers and stakeholders to improve collaboration and reduce conflicts. Lastly, participants emphasised the need for senior management to actively support project teams by resolving challenges, investing in modern training, and providing skilled resources to drive successful project execution.

8. Implications

The following are the implications of this study articulated from theoretical, practical then managerial and policy perspectives.

8.1 Theoretical Implications

This research study contributes to the theory of project management and contingency theory by offering a framework to enhance the maturity of project management functions in similar organisations. The newly developed research instrument and accompanying recommendations can support future studies and assist in advancing the goal of improving government service delivery.

8.2 Practical Implications

The practical implications of the study are the importance of establishing and supporting the PMO in a project-based organisation. An effective PMO plays a pivotal role in advancing project management maturity. Furthermore, actively involving and consistently engaging key stakeholders in projects is a crucial success factor for achieving project effectiveness and enhancing maturity in the project management process.

8.3 Managerial and Policy Implications

This study also holds significant implications for SITA's human resources policy, particularly regarding recruitment, remuneration, and staff retention, with a focus on project managers. To remain competitive in the labour market and attract and retain high-calibre project and program managers, SITA should consider revising its human resources policy. SITA's procurement policy should be revised to facilitate agile procurement processes that promote faster service delivery while effectively mitigating risks of corruption and fraud.

9. Recommendations

The following recommendations were made based on the abovementioned literature review and the primary findings.

9.1 Implementation and support of the project management office

The research highlights the critical role of the EPMO within SITA, there is a need for enhanced support and authority. Key responsibilities for the EPMO include leading ongoing improvements in the project management framework to ensure global competitiveness, aligning processes with global best practices through benchmarking, enhancing project progress monitoring, recommending necessary interventions, and improving and standardising project governance processes.

9.2 Training for Project Managers and All Relevant Stakeholders

There should be ongoing, targeted training for project managers and stakeholders in areas like problem-solving, risk management, coordination, change management, stakeholder management, and communication. Skilled project managers lead to more effective projects and improved ICT management maturity. SITA should also implement coaching programs for continuous support. Basic training for stakeholders is advised to increase their knowledge, support, and participation, enhancing project effectiveness and overall project management maturity.

9.3 Implementation and Optimisation of the Project Methodology and Framework

SITA should adopt and implement a clear, agile, and versatile project management framework. The EPMO should lead this effort, ensuring the framework is easy to understand and applicable to various client contexts. SITA should benchmark against global industry standards to identify improvements and create a roadmap with clear objectives, milestones, and timelines. This roadmap aims to enhance SITA's competitiveness as an ICT service provider. Additionally, SITA should review and enhance its project management tools and software to improve project management maturity and effectiveness.

9.4 Improve Stakeholder Inclusion and Engagement

The research study recommends that SITA improve stakeholder inclusion and engagement processes. SITA should ensure transparent and effective communication in

all projects and maintain alignment of objectives with clients. Prioritising client participation and input is crucial for project success. Consistent alignment between CRMs, project managers, and client representatives is necessary to keep all stakeholders moving in the same direction. The study also highlights the need for SITA to enhance its stakeholder engagement process.

9.5 Improved Senior Management Support for ICT Project Management

SITA senior management should enhance their support for ICT project management. Project effectiveness and maturity depend on this support. Senior managers should ensure continuous project capacity, review remuneration packages and employment terms to attract and retain top project managers and advocate for project management practices. They should also support the continuous improvement of the project management framework and the benchmarking exercise. Additionally, senior management should streamline procurement processes to be less bureaucratic, faster, and more conducive to timely and budget-compliant project completion.

9.6 Limitations Areas of Further Study and Conclusion

As SITA works towards improving project effectiveness and ICT project management maturity, the insights from this study can be utilised. Future research directions are suggested to further explore enhancements, innovation, and continuous improvement in ICT project management. The study was limited to the SITA project management team in the Western Cape, making the findings non-generalisable to the broader South African public service. Minor disruptions and postponed interviews occurred due to participants' work commitments but did not significantly impact the study. Future research should include the entire SITA project management team and senior leadership for a more comprehensive analysis.

This study contributes to the existing knowledge base on ICT project management, particularly in public sector contexts within developing countries, and aims to serve as a roadmap for SITA and similar organisations seeking to enhance their ICT project management functions.

The study identified gaps such as the necessity to review and enhance the project management framework, optimise tools and software, and reassess the remuneration policy for project managers to attract and retain talent. Additionally, it noted that SITA's procurement processes are hindered by bureaucracy and long timelines that need optimisation.

In conclusion, this research study examined the challenges affecting ICT project management effectiveness at SITA in the Western Cape Province. It began by defining key concepts related to project management maturity challenges and critically discussing factors that can enhance this maturity, focusing on barriers, causes, and potential benefits for SITA. The findings highlighted the need to enhance ICT project management maturity through improved project management capabilities, a

standardised project management framework, dedicated support for the EPMO, and better senior management backing.

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