THE FACTORS ENHANCING THE MATURITY OF ICT PROJECT MANAGEMENT AT STATE INFORMATION TECHNOLOGY AGENCY (SITA), SOUTH AFRICA

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Abstract

This study investigates factors enhancing the maturity of ICT project management at SITA. It identifies key challenges affecting SITA's project management, such as inconsistent frameworks, limited stakeholder engagement, inadequate technology adoption, and insufficient senior management support. Using a qualitative methodology, data was collected through semi-structured interviews with 10 project management professionals. Thematic analysis revealed critical themes, including process standardisation, leadership improvement, technology integration, and enhanced stakeholder management. The findings emphasise the need for optimised project management frameworks, effective training programs, and agile procurement processes to improve SITA's project management maturity. Recommendations include strengthening the Enterprise Portfolio Management Office (EPMO), standardising governance practices, implementing modern project management tools, and fostering senior management advocacy. This research contributes to the theoretical understanding of project management maturity while offering actionable insights to improve ICT project management in public-sector organisations. It aims to advance efficient ICT service delivery and strategic capability within SITA and similar contexts.

Keywords: Project Management, Project Management Maturity, Maturity Assessment, Stakeholder Engagement, Project Management Office.

1. INTRODUCTION

The COVID-19 pandemic highlighted the critical need for responsive and accessible government services like telehealth and e-learning. Information and Communication Technology (ICT) was vital in enhancing service accessibility while adhering to social distancing guidelines. The importance of effective and mature ICT project management processes for delivering digital innovations was underscored. Key stakeholders — including patients, learners, government service managers, hospital boards, school governing bodies, and Members of the Executive Council (MECs) in the Western Cape — will benefit from improved service delivery through enhanced project management within the State Information Technology Agency (SITA).

2. LITERATURE REVIEW

2.1 Factors Enhancing the Maturity of ICT Project Management

2.1.1 The Need for Project Management Office

Several authors highlight the significance of a Project Management Office (PMO) in enhancing

project management maturity within an organisation (Karim *et al*., 2023). The PMO's functions vary based on its structure, mandate, and operating context, ranging from providing support to directly managing projects (Project Management Institute, 2013b). According to the Hill framework (2014) (cited in Arbabi *et al*., 2020), the PMO can also perform functions such as Practice Management, Infrastructure Management, Resource Integration, Technical Support, and Business Alignment.

2.1.2 Practice Management

The practice management is mainly driven using the project management methodology that would be adopted and institutionalised in the project management environment by that organisation from beginning to end of projects. The project management tools will be chosen, rolled out and used as per the direction of the project management office.

The project management office also leads the definition of performance management for projects, this includes clarifying the standards and criteria for project performance management (Arbabi et al., 2020). The role of the PMO in leading the provision of relevant methodology, standards and project management tools was also identified by Silviusa (2021).

2.1.3 Infrastructure Management

The PMO function for infrastructure management can be further broken down into governance, assessment, organisation, structure lastly facility support. The PMO needs a sufficient mandate and level of authority to drive the attainment of project management objectives in an organisation. A PMO must evaluate project management proficiency and expertise.

The level of authority for project managers concerning project teams and relevant stakeholders must be determined by the PMO as part of the organisation and structure sub-function. The PMO is also responsible for the acquisition, allocation and disposal of services and equipment (Arbabi *et al.*, 2020).

2.1.4 Resource Integration

The resource integration as the PMO function can be broken down into resource management, training and education, career development and team development. The PMO has the responsibility to influence the skills level and availability of project resources and to also supervise and track the use of resources. Training and education focus on ensuring the provision of project team members with the necessary expertise, skills and capabilities.

Career development entails all tasks related to obtaining growth for project management careers. Team development entails the creation of operational procedures to enable project team development and performance (Arbabi *et al.*, 2020). Training, human resource management and knowledge management are the functions of the PMO also identified by Silviusa (2021)

2.1.5 Technical Support

The technical support function of the PMO is made up of the following sub-functions, Mentoring, Project planning, project auditing and project recovery. Mentoring entails engagement with project managers and teams to provide guidance and sharing of project

management insights, skills and knowledge. The project planning sub-function entails creating a similar language framework for planning projects. A project auditing sub-function is about assessing project management skills, capability, and level of growth. The audit sub-function must assess project management outcomes. Project recovery is about identifying and executing a project recovery answer (Arbabi *et al.*, 2020) (Silviusa, 2021).

2.1.6 Business Alignment

This role includes managing project portfolios, customer and vendor relationships, and overall business performance to maximise project value (Arbabi *et al*., 2020; Silviusa, 2021). Furthermore Parviz (2000) (cited in Kamaldien, 2012) states that establishing and implementing a Project Management Office (PMO) is crucial for enhancing project management capability, which in turn improves effectiveness and risk management. Filmalter and Steenkamp (2021) emphasise that organisational management must support the creation and functioning of the PMO, a viewpoint also endorsed by Chauma (2017).

2.1.7 Appointment of Project Managers

The appointment of capable project managers is emphasised as a key factor for improving project management maturity. Kerzner (2019) highlights the need to employ qualified project managers and update job descriptions to include project management functions. Wen and Qiang (2016) (cited in Isaacs, 2018) stress the importance of a standardised process for appointing project managers. Besner and Hobbs (2013) confirm that a strong support structure is essential for successful project execution, while Filmalter and Steenkamp (2021) identify building an effective project team as critical for organisational success.

2.1.8 Adoption of Project Management Tools or Software

The availability of project management tools and software is crucial for enhancing project management maturity. Kerzner (2019) asserts that investing in relevant software is necessary for improving maturity levels, while Karim *et al.* (2023) also recognise the influence of such tools on maturity. Conversely, lacking suitable technological support can undermine project management maturity (da Silva Bezerra, 2021).

While, Wen and Qiang (2016) (cited in Isaacs, 2018) emphasise the need for an Agile reporting system for effective communication between project teams and managers. Chauma (2017) highlights the importance of adopting relevant tools, and Kamaldien (2012) notes that dashboards can facilitate informed decision-making in project management environments.

2.1.9 Adoption of a Project Management Methodology or Framework

Martins *et al.* (2021) emphasise the importance of implementing a project management framework to enhance project management maturity. Filmalter and Steenkamp (2021) stress the necessity of ongoing support from senior management for the project management methodology and framework.

A well-defined project management methodology outlines an organisation's structure, processes, and activities. The PMO is key in maintaining the project management function while addressing stakeholder needs and ensuring project effectiveness. A lack of a clear project management structure can lead to immature organisational practices (da Silva Bezerra, 2021). Chauma (2017) adds that the PMO should identify and adopt an appropriate project management methodology.

2.1.10 Importance of Senior Management Support

Kerzner (2019) highlights the importance of enhancing management support for project management as a crucial investment for improving project management maturity. Martins *et al.* (2021) stress that both senior and first-line management must support the implementation of a project management framework within the organization. Additionally, Wen and Qiang (2016) (cited in Isaacs, 2018) identify standard management methods, along with guidance from the steering committee, as key enablers for achieving project management maturity.

2.1.11 Theoretical Framework of the Study

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). A theory consists of logically related propositions that describe the relationships between different concepts. It can be validated by preliminary data or extensive research, with greater acceptance stemming from substantial supporting evidence (Varpio *et al*., 2020).

Various theories serve different functions (Varpio *et al*., 2020). Descriptive theories identify and describe phenomena. Explanatory theories clarify connections between phenomena. In comparison, emancipatory theories address social repression. Disruptive theories challenge and expand existing knowledge. While predictive theories forecast outcomes based on specific inputs.

Theories vary in scope: large conceptual theories address broad patterns, middle-range theories focus on human relations, and micro theories examine individual phenomena (Varpio *et al*., 2020). This research study adopted the theory of project management and contingency theory, which are explained below.

2.1.12 Theory of Project Management

The theory developed by Koskela and Howell (2002) integrates the theory of project and the theory of management, focusing on project control elements such as measuring performance, identifying variations, and learning opportunities for enhancing project management processes. This theory views projects as transformation processes that convert inputs into outputs (Akinyi and Purity, 2024).

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.

Key studies utilising this theory include Akinyi and Purity's research on urban housing projects in Kenya, which assessed the relationship between project design and performance (Akinyi and Purity, 2024). Thobejane and Marnewick's framework for implementing cloud computing projects successfully identified essential project management knowledge areas (Thobejane and Marnewick, 2020).

Limitations of the traditional project management approach include its rigidity in managing projects that require innovation and agility (Lalic *et al*., 2022). The contingency theory addresses these limitations by promoting adaptability and responsiveness to the project context, encouraging tailored management strategies for varying project scopes and complexities (Söderlund, 2011) (As cited in Boonstra and Reezigt, 2023).

2.1.13 Contingency Theory

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, William, and Gardner, 2020). Martinsuo and Geraldi (2020) applied this theory to explore the relationship between project portfolios and their contexts, benefiting from understanding context impacts.

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. The contingency theory has contributed to the deeper understanding of variables included in the study, by providing deeper insights into management practices and their impact on project outcomes. It was also the best theory to articulate the link between inappropriate management behaviours and ineffective project management, ultimately contributing to recommendations for suitable practices.

However, the theory has limitations, including reductionism, which oversimplifies challenges by focusing solely on context and structure; determinism, which overlooks variability in outcomes across similar contexts; temporality, which ignores the lag between management actions and contingency factors; and issues with measuring success, as it assumes similar outcomes regardless of a project's phase (Martinsuo and Geraldi, 2020).

2.1.14 Linking Theories to the Study

The figure below illustrates the link between the project management and contingency theories in the study.
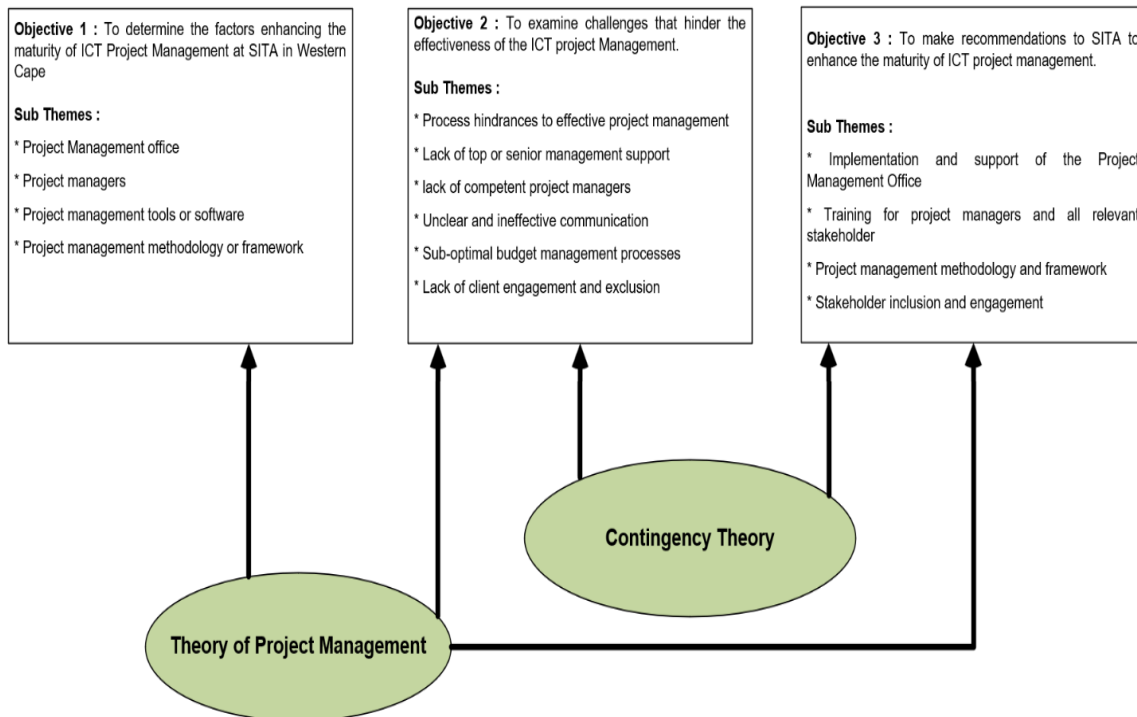
Figure 1: Adopted Theories Link to the Study

Source: Author (2024)

The study employed Project Management Theory to define project management processes and maturity, discussing key elements, challenges, and barriers affecting project management effectiveness. Recommendations for improving maturity were based on this theory.

Contingency Theory was utilised to explore management behaviours that enhance project management. It highlighted how inappropriate management behaviours can hinder effectiveness, leading to recommendations for suitable practices.

2.1.15 The Legislative Requirements Relating to the Study

The chapter discusses various frameworks and guidelines provided by different organisations and governments to enhance the implementation and effectiveness of e-learning and ICT projects. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) offers principles to ensure inclusivity and innovation in e-learning across countries, focusing on stakeholder satisfaction when evaluating project impact (UNESCO, 2022). These principles align with the problem statement of the study as the lack of sufficient buy-in was highlighted. The objective of this study is to recommend how SITA can improve stakeholder engagement to improve the maturity of ICT project management.

In the UK, the Treasury has issued guidance for public entities' assessment of policies, programs, and projects, including essential information for business cases (HM Treasury,

2022). Tanzania's President's Office has developed a guide for public service project managers, covering project management objectives, methodologies, and roles to standardise ICT project implementation (President's Office Public Service Management, 2010). The above interventions by the government entities are relevant to the problem statement of this research study, the recommendations which will emanate from the third objective will focus on the standardisation and optimisation of SITA project management methodology and framework to enable the maturity of ICT project management.

In South Africa, the Public Service Act of 2007 establishes a regulatory foundation for the public sector, emphasising ICT's role in service delivery (The Public Service Act, 2007). The SITA Act of 1998 created the State Information Technology Agency to provide essential ICT services to government departments (The State Information Technology Agency Act 88 of 1998. Pretoria.) This legislation outlines mandatory ICT services and their procurement through SITA, further detailed in the SITA Amendment Act of 2002 (The State Information Technology Agency Amendment Act 38 of 2002. Pretoria). The above legislative framework articulates the scope of the role SITA is expected to fulfil within the South African public service context. From this context in the research study research problem and objectives, there is a strong link and focus on the need for effective project management and enhanced maturity which will be part of the recommendations.

2.1.16 Conceptual Framework of the Study

A conceptual framework is the reasoning for completing a research study. A conceptual framework articulates the accepted knowledge, usually through a literature review. It also highlights inadequate knowledge of a phenomenon or problem. The conceptual framework also indicates the methodological foundations of the study (Varpio, *et al.*, 2020).

The conceptual framework below results from reviewing the literature related to the study's topic. The literature was identified after the topic was broken into smaller pieces and the independent and dependent variables were selected.

Figure 2: Conceptual Framework of the Study

An independent variable can be explained as a variable that creates changes independently. In the conceptual framework above, the factors that enhance project management maturity are identified as independent variables (Saunders *et al.*, 2023).

A dependent variable alters in reaction to changes due to changes in other variables; the level of maturity is the dependent variable in the above conceptual framework (Saunders *et al.*, 2023).

According to the conceptual framework above, there is a causal relationship between the independent variable and the dependent variable. As the organisation improves on the independent variable, there is a positive effect. That positive effect will directly and positively impact the level of project management maturity within the organisation, which is a dependent variable.

Through conducting this study, the research problem identified the need for a matured project management function was addressed through the recommendations provided to SITA as part of the research objectives that will enable SITA to implement a practical solution to enhance the maturity of the ICT project management function. The study also provides practical contributions, while academically and methodically making further contributions

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). The improvement of government service delivery and ICT innovation relies on a well-developed project management function within SITA. The proposed study will address several challenges, including:

The lack of a standardised and institutionalised project management framework leads to inconsistent practices across departments (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, 2016; 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 OF THE STUDY

The study aims to investigate factors enhancing ICT Project Management Maturity at SITA in Western Cape Province. A qualitative research method was adopted to make recommendations to SITA on how to improve ICT project management maturity.

5. RESEARCH OBJECTIVES

The objectives of this research study are the following:

❖ To determine the factors enhancing the maturity of ICT Project Management at SITA.

❖ To examine challenges that hinder the effectiveness of the ICT project management at the SITA in the Western Cape province.

❖ To make recommendations to SITA to enhance the maturity of ICT project management.

6. RESEARCH METHODOLOGY

6.1 Research Design

This research study utilised an exploratory research design, aiming to identify the factors that contribute to enhancing the maturity of ICT project management. It sought to address the question of how SITA, can progressively improve its project management maturity. This research design allowed the researcher to conduct in-depth semi-structured interviews with participants, providing flexibility and a deeper understanding of the phenomenon under investigation. This understanding resulted in the research study making key findings that led to practical recommendations to SITA and an actionable roadmap to enhance the project management maturity.

6.2 Target Population

The target population is the exact number of participants that will be the focus of the research study and from which the sample will be identified (Saunders *et al*., 2023). The study population is finite and made up of 16 staff within the SITA. This staff, which includes 15 staff, includes programme managers, senior project managers, project managers, and project support staff. The project management role is mainly fulfilled by programme managers, senior project managers, and project manager staff.

6.3 Sampling Strategy

The target population is the exact number of participants that will be the focus of the research study and from which the sample will be identified (Saunders *et al*., 2023).

The study population is finite and made up of 16 staff within the SITA. This staff, which includes 15 staff, includes programme managers, senior project managers, project managers, and project support staff. The project management role is mainly fulfilled by programme managers, senior project managers, and project manager staff.

6.4 Data Collection Method

The study adopted a qualitative approach. The pilot study was conducted with one expert in the project management and information system (Saunders *et al*., 2023). The results of the pilot study were not included nor used in the main study. The pilot study's findings were used to fine-tune the data collection tool. A key finding was the use of Microsoft PowerPoint for ease of transitions between interview questions, which was adopted. A few grammatical corrections were made to the questions. However, overall, the questions were determined to be relevant, so no changes were made, and the amount of time allocated to the interviews was determined to be sufficient.

The data collection procedure used was semi-structured interviews initiated with an already identified list of themes and potentially significant questions related to those themes that acted as a guide for each interview. The 10 interviews were conducted one-on-one using Microsoft Teams, and they were recorded. The average duration for each interview was one hour. The data collection instrument was constructed to cover the objectives and key questions of the research study. There was a section covering the demographic information of the participants. There were five questions covering research objective 1. Six questions covered objective 2. Four questions covered objective 3. The semi-structured interview supported the exploratory nature of this study to also understand the relationship between the variables being studied (Saunders *et al*., 2023).

6.5 Data Analysis

Thematic analysis develops patterns of meaning through coding (Braun and Clarke, 2006) (Cited in Saunders *et al*., 2023). It helps in organising and understanding large amounts of qualitative data, recognising key themes, and generating explanations or conclusions based on thematic patterns (Saunders *et al*., 2023).

The following key steps were completed to finalise the data analysis for this study (Saunders *et al*., 2023).

❖ Familiarisation with data through the collation and reading of interview transcripts as a first step. This step involved reading and reading again the interview transcripts.

❖ Then themes were identified, and relevant associations were identified.

❖ Another step was to define, enhance the themes identified and validate propositions using Microsoft Word to finalise themes.

The research data collated was analysed as it was transcribed using an audio recording to capture the sound of the participants (Saunders *et al*., 2023).

6.6 Trustworthiness

To attain trustworthiness for a research study, four principles must be considered the first one is credibility, secondly is transferability, thirdly dependability and last is confirmability (Lincoln and Guba, 1985) (Cited in Nassaji, 2020). Lincoln and Guba (1986) (Cited in Amin *et al.*, 2020) argue that the above criterion for trustworthiness is complete when authenticity is also added. This addition assisted the researcher in managing issues such as power, pluralism, multiple values, representation, empowerment, and accountability.

7. DISCUSSION AND INTERPRETATION OF FINDINGS

The following subsection articulates the primary data for this research study and focuses on its presentation, discussion, and interpretation in alignment with its objectives.

7.1 Word Cloud Analysis

"A picture is worth a thousand words," is a saying that depicts the power of pictures when describing or explaining concepts. This analysis technique was used to organise the data collected from the interviews with the research participants to make it easy to read and understand (DePaolo and Wilkinson, 2014).

Below is the word cloud analysis generated using the MAXQDA tool after reviewing the data collated from the semi-structured interviews with the 10 participants.

Figure 3: Participants' Feedback from Interviews

The above word cloud was used to highlight key concepts that were identified more frequently by the participants. It was also adopted to map keywords for further analysis in this research study. This analysis technique was not used to replace or avoid methical and detailed analysis of the data collected from participant interviews (DePaolo and Wilkinson, 2014).

7.2 Presentation of Results

This study has used thematic analysis to interrogate and analyse the findings in alignment with the research objectives, also considering the questions that were directed to and answered by

the participants during the interviews. The real identities of the participants were protected through the use of pseudo names, namely, Participant 1 (P1) to Participant 10 (P10). The table below lists the themes that emanated from the analysis of the responses by the research participants during the interviews.

Table 1: Themes Emanating from the Study

Theme	
1.	Process standardisation and optimisation
2.	Use of technology to improve project management
3.	Leadership to improve project management
4.	Governance for project management
5.	Need for a benchmarking exercise
6.	Project management skills
7.	Stakeholder management
8.	Project capacity management
9.	Project management advocacy
10.	Support to the project management team

7.2.1 Objective No 1: To determine the factors enhancing the maturity of ICT project management at the SITA in the Western Cape Province.

The first objective was to investigate and identify the elements that contribute to the maturity of ICT project management at SITA in the Western Cape Province. All ten participants responded and provided different opinions. The responses below were selected where the themes were formulated.

7.2.1.1 Theme 1: Process Standardisation and Optimisation

Standardising the project management process for SITA is critical to ensuring that all stakeholders are aligned on the process to be followed for managing projects. Then, the optimisation element is focused on improving the SITA project management process.

This theme highlights the need for SITA to ensure that the project management process is standardised throughout the organisation and progressively enhance the project management process. The research study sought to understand whether the project management processes contributed to improving the maturity of the overall project management function. The participants were asked to identify factors that enhance the maturity of ICT project management. Process standardisation and optimisation emerged as a key theme. The following verbatims were made.

P4 added that: *"No consistent and continuous improvement in the project manage processes."*

P7 confirmed that: *"Standardised Project Management policy and procedures."*

P9 agreed: *"So, company ICT policies and technology as well must be up to standard."*

The verbatims above by the participants confirm a need to ensure that project management processes are standardised and optimised throughout SITA. To ensure predictable project results and quality. Martins *et al*. (2021) identified the need to onboard a project management framework to improve project management maturity. The framework aims to ensure consistent

and predictable project management processes. The project management framework also ensures that project managers use an organisation's known, defined, standard methodology.

7.2.1.2 Theme 2: Use of Technology to Improve Project Management

Adopting and integrating project management tools and software can modernise SITA's project management function while potentially reducing the administrative workload associated with project management.

Theme two emphasises the criticality of SITA in adopting modern and relevant project management tools and software to enhance the effectiveness of the project management function. The theme of technology adoption to improve project management emerged when participants were asked if project management tools or software usage could improve the maturity of ICT project management. The following direct statements were made.

P3 Argued that: *"If there is an introduction of project management tools and project management software, there will be less dependency on paper processes."*

P9 Argued that: *"The organisation as well must also understand what tools we can use to be able to get to the maturity levels that we are supposed to achieve."*

The above direct statements from the participants highlighted the importance of project management tools and software in reducing paper reliance by SITA. The participants also emphasised the benefits of technology in enhancing the transparency of projects. Project management maturity will be enhanced by SITA's use of project management tools. The project management maturity of SITA will be compromised if suitable technological support is not provided to enhance project management in the organisation (da Silva Bezerra, 2021).

7.2.1.3 Theme 3: Leadership to Improve Project Management.

Leadership plays a crucial role in fostering continuous improvements in the project management process. Project leadership in this context begins at the project management level but also includes executive leadership. It determines the pace, intensity, and direction of these enhancements.

Theme three highlights the key role that project leadership fulfils in ensuring that projects are executed effectively and efficiently leading to progressive enhancement of project management maturity. The theme of leadership to improve project management was identified when the participants were asked about the importance of appointing capable project managers to improve the maturity of the project management function. The following direct responses were made.

P3 Reflected that: *"Strong project managers like to lead and motivate the teams because as a project manager you need to lead and motivate the other stakeholders that you are working with."*

P8 Argued that: *"Because you need someone that is going to coordinate efforts and check the quality of the ICT projects and give direction and give the plan, you know in the approach."*

The above direct responses from the participants have a common theme on the importance of leadership on effectiveness of projects. Project managers should play a critical first-line role in project leadership to ensure that the project teams perform as expected. When project managers are not performing as per the leadership expectations that may be caused by a lack of training and coaching, this may lead to ineffective projects (Gusha ,2022).

8. CONCLUSIONS

8.1 Optimising the Project management processes and the framework

The findings of this research study highlighted the need for SITA to focus on optimising the project management processes and the framework to eliminate confusion and lead to a more agile project management function. The support of the EPMO within SITA to drive this process to optimise the project management function will eventually lead to improved maturity of the project management function.

9. CONTRIBUTIONS OF THE STUDY

This research study aims to enhance project management for ICT projects at SITA, providing project managers and leaders with a clear roadmap for improving maturity. The recommendations of this study will enable SITA's senior management to implement an improvement plan, leading to faster and more reliable ICT service delivery to citizens. Academically, the study will contribute valuable insights to the project management field. Contribution to the knowledge gap and methodical contribution through the framework of the study, new research instrument and recommendations may be used to further project management research and better understand how improved project management can enhance government service delivery.

The following practical contributions of the study are explained:

❖ The Minister of Communications and Digital Technologies will receive recommendations **to improve service delivery**.

❖ Government Departments and Entities will gain **opportunities for enhanced service delivery**.

❖ National and Provincial Parliament will **oversee SITA's project management improvements**.

❖ SITA Senior Management to **gain insights to advocate** for enhanced project management maturity.

❖ Project managers and leaders need to **gain a roadmap for maturity improvement**.

❖ Citizens to benefit from **improved and reliable ICT service delivery**.

❖ Various departments will **learn from the study** and its recommendations to improve service delivery through matured project management.

9.1.1 Theoretical Contributions

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.

9.1.2 Practical Contributions

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.

9.1.3 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.

10. RECOMMENDATIONS

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

10.1 Implementation and Support of the Project Management Office

The research confirmed the importance of the Enterprise Portfolio Management Office (EPMO) within SITA. The EPMO's role should be supported, and its authority must be strengthened. The study has identified several roles the EPMO must fulfil to enable effective project management and improved ICT project management maturity. The EPMO must drive the continuous enhancements of the SITA project management framework to ensure it enables SITA to compete in the global ICT markets. The project management processes must be continuously aligned to global best practices through a benchmarking exercise led and conducted through the EPMO.

Deliberate effort must be made to improve project progress monitoring and recommendation of required interventions if necessary. The EPMO must also drive the improvement and standardisation of project governance processes.

10.2 Training for Project Managers and All Relevant Stakeholders

Continuous and purposeful training for the project managers and the relevant stakeholders is recommended. The research has identified key project management areas that must be

prioritised when training interventions are designed and planned. Problem solving, risk management, coordination of project activities, change management, stakeholder management and communications. The research confirmed that when competent project managers are leading projects, the effectiveness of those projects improves, and the maturity of the ICT management function is enhanced. It is recommended that SITA further implements coaching programmes for the project managers as part of the continuous support interventions.

Basic training for the project management stakeholders is also recommended. The research identified the benefits for projects when the stakeholders are more knowledgeable about project management. They will be more supportive and participative to projects, which will eventually positively impact the effectiveness of projects and the maturity of the project management function.

10.3 Implementation and Optimisation of the Project Methodology and Framework

The wide adoption and implementation of a project management methodology and framework is recommended. SITA, led by the EPMO, must ensure that the project management framework is clear and easy for project managers to understand and implement. The framework must be agile, applicable to different client contexts, and valuable for different types of projects. SITA should embark on a benchmarking exercise with global project management industry players to identify areas of improvement and produce an improvement roadmap for the framework. That roadmap must have clear objectives, milestones and timelines. The purpose of the roadmap should be to make SITA more competitive and desirable as an ICT service provider to clients.

Enhancing the SITA project management framework through the benchmark exercise should also include investigating and identifying suitable project management tools and software. SITA must also review its current tools and software for project management to determine new and additional technological enhancements required to enhance SITA's project management maturity and project effectiveness.

10.4 Improve Stakeholder Inclusion and Engagement

The research study recommends improving the SITA processes on stakeholder inclusion and engagement. SITA should implement transparent and effective communication in all projects. The alignment of objectives between SITA and the respective clients must always be maintained. Client participation in projects and their inputs must be prioritised to ensure project success.

The alignment between CRMs, project managers, and client representatives must be maintained throughout the project to ensure all stakeholders move in the same direction. The need for SITA to improve the stakeholder engagement process was also identified.

10.5 Improved Senior Management Support for ICT Project Management

The research study recommends that SITA senior management improve its support of ICT project management. Project effectiveness and the enhancement of ICT project management maturity depend on senior management support.

The research study has determined that senior managers can support projects in the following manner: Senior management can ensure continuous project capacity. There was a further recommendation that the current remuneration packages and the term of employment offered to project managers be reviewed to enable SITA to attract and retain the best available project managers.

Another critical role for senior managers is to advocate for project management approaches and practices. Senior management should fully support the continuous improvement of the SITA project management framework and the required benchmark exercise. The senior management should also review and enhance the procurement processes to be less bureaucratic, finalised in shorter timeframes, and positively contribute towards projects completed on time and within planned budgets.

11. LIMITATIONS, AREAS OF FURTHER STUDY AND CONCLUSION

The following were limitations experienced in the study. The study was conducted with the SITA project management team, so the findings cannot be generalised for the rest of the South African public service. Geographically the study was focused on the Western Cape region, so there might be a limiting factor in generalising to other geographic regions. Due to work commitments of some participants, some scheduled interviews had to be postponed. Some sessions experienced minor disturbances because of work interference. The postponements and minor disturbances did not severely negatively affect the study and its recommendations.

The study's results could be extrapolated to related research projects that were completed previously. Future research projects should explore the possibility of conducting a study with the entire SITA project management team, including relevant Heads Of Departments, programme managers, senior project managers, project managers, and support staff.

There is a need to explore and understand the weight each project maturity factor carries in influencing the overall effectiveness of the SITA project management function. The main aim will be to further understand in detail the causes or context that results in the negative influence of these success factors on the project management function. Another area of future research will be understanding ICT portfolio management regarding current maturity within SITA and factors that enhance portfolio management for improved competitiveness.

In conclusion, this research study has explored the factors enhancing the maturity of ICT project management at SITA in Western Cape Province. The investigation was initiated by explaining the key concepts of project management maturity. Then, the key factors that enhance the maturity of ICT management were discussed critically, focusing on barriers, possible causes, and benefits for SITA's enhancement of ICT project maturity.

The research findings emphasised the importance of enhancing the maturity of ICT project management at SITA through improving project management capability, optimised and standardised project management framework, support and empowerment of the EPMO, and improved senior management support for project management.

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