

Towards project management maturity: The case of the South African government

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Background: The continuous improvement of project maturity generally enhances the capacity of the state to render services within budget, performance parameters and time. The lack of organisational readiness to adopt project management praxis seriously jeopardises government departments' ability to successfully execute public policy by means of programmes and projects.

Aim: The aim of this article was to reflect on findings from, firstly, a survey based on content analysis of strategic government documents and, secondly, focus-group interviews with senior managers in the South African Public Service, to determine the organisational readiness and overall project maturity of national government departments.

Setting: The study focused on project maturity assessments in government settings and, in this case, national departments of the South African government.

Methods: A qualitative design was followed utilising content analysis and focus-group interviews as two methods for data collection.

Results: The findings revealed that the South African government is characterised by pockets of excellence as far as project maturity is concerned. An overarching model and uniform methodology for project management are largely absent.

Conclusion: International standards and best practices should be adopted and adapted for the unique nature of governance and service delivery dynamics within South Africa. The findings accentuated the need for a far more coordinated and integrated project-based approach in government because departments are generally found to operate in silos. Various strategies are proposed to improve the project management maturity of these institutions.

Keywords: projects; project management maturity; project maturity models; government; national departments; South African government; organisational readiness.

Introduction

Project management maturity is commonly regarded as a critical indicator of the readiness of government departments and agencies to execute national development plans (NDPs), policies, strategies and programmes successfully. The level of organisational project readiness within government departments also generally determines the capability and capacity of the state to provide essential services and goods to society (Crawford et al. 2003; Jordan 2017; Van der Waldt 2011).

Scholarly literature on organisational project maturity in private sector settings abounds. Several scholars contribute in this regard (e.g. Gasik 2018, 2019; Grant & Pennypacker 2006; Jordan 2017; Kwak & Anbari 2010). Nevertheless, a significant corpus of knowledge is yet to emerge on the overall project maturity of governments. Potential reasons for this deficiency are the complexities associated with measuring the intricacies of government institutions' maturity, the diversity of functions and operational activities, as well as the relative recency of project applications in the public sector (Crawford et al. 2003). As a result of such difficulties, it is understandable that the Project Management Institute (PMI) only since 2002 expanded the Project Management Body of Knowledge (PMBOK[®]) with its Government Extension. Government projects have a unique nature such as particular legal constraints, accountability and expectations of transparency, aspirations towards the public good instead of return of investment and the judicious use of tax payers' money (Van der Waldt 2011). The mentioned unique features further complicate the use of established maturity models such as Organizational Project Management Maturity Model (OPM3), Portfolio, Programme and Project Management Maturity Mode (P3M3), Capability

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Maturity Model Integration (CMMI) and Project Management Maturity Model (PMMM) in government settings.

The purpose of this article is to reflect on findings of a survey based on content analysis of strategic government documents and focus-group interviews with senior managers in the South African Public Service. The survey sought to determine the organisational readiness and overall project maturity of national government departments. The focus is first on the nature, scope and complexities linked to the measuring of government maturity, after which the article attempts to assess the general maturity of the Government of South Africa. Finally, recommendations are made to improve the current levels of government maturity. Whereas the South African government constitutes three autonomous but interdependent spheres, namely national, provincial and local, the survey focused only on the national sphere. An assessment of all three spheres would be extremely complex and thus falls outside the scope of this article.

Conceptual framework

According to PM Solutions (2012), project management maturity refers to:

... progressive development of an enterprise-wide project management approach, methodology, strategy, and decision-making process ... The appropriate level of maturity will vary for each organisation based on its specific goals, strategies, resource capabilities, scope, and needs. (p. 2)

Assessments of project management maturity generally function as 'improvement maps' to facilitate the effectiveness and efficiency of organisations' project management practices (Rwelamila 2007:58). Furthermore, such assessments provide organisations with a decision framework and a path to guide advancements in operating projects. In this way, organisations achieve dramatic improvements leading to project success (Pennypacker & Grant 2003:6). Furthermore, organisations are enabled to identify gaps in current project management capabilities (Bush & Dunaway 2005; Levin & Skulmoski 2000:2). In this regard, authors such as Ajmal and Koskinen (2008), Chronéer and Backlund (2015) and Pollack (2007) emphasise soft skills and organisational learning as instruments to enhance organisations' project capabilities. The instruments can be used as elements in maturity models for project management applications in organisations.

According to the PM Forum (2008), approximately 30 different maturity models have been developed, each addressing a specific business model or industry context. Wendler (2012) identified as many as 237 such models and pointed out that his study in this regard is not complete or exhaustive. None of these models, however, intend to make provision for the complex composition and combination of institutions, such as in the case of an entire government. According to Gasik (2018), the most prominent project management maturity models are CMMI[®] (Software Engineering Institute [SEI] 2010), P3M3[®] (Office of

Government Commerce [OGC] 2010) and OPM3[®] (PMI 2017). These models generally fall into three categories:

- Technical delivery process models
- Project management process models
- Total organisation models.

Regarding the latter mentioned category, the PMMMSM is a formal instrument designed by PM Solutions and used to measure an organisation's project management maturity. Once the initial level of maturity and areas for improvement are identified, PMMM provides a roadmap that outlines the necessary steps to advance project management maturity and improve the organisation's performance (<https://www.pmsolutions.com>). The proliferation of model variants and inclusion in both the APM and PMI Bodies of Knowledge (Association for Project Management [APM] 2006; Project Management Institute [PMI] 2004) demonstrates that PMMM has become an established part of documented practice (Mullaly 2006:65).

Anderson and Jessen (2003:457) and Antilla, Arto and Wallén (1998:41) confirmed that the field of project management has extended its focus from the study of single projects to the way organisations are utilising projects to realise strategic goals. This broader field of study usually resorts under the banners of 'project-oriented', 'project-driven' or 'project-based' organisations (Gareis 1989:243; McCauley 1993:27; Thiry & Deguire 2007:649; Van der Walddt 2009:37). Such broader studies help align and integrate projects, programmes and portfolios with business processes (Gareis & Hueman 2000).

For purposes of this article, a synopsis was drawn of core principles and levels of three organisational project maturity models:

- PMI's Organizational Project Management Maturity Model (OPM3[®])
- PM Solutions' Project Management Maturity Model (PMMMSM)
- Capability Maturity Model (SEI 1980).

The synopsis of the models reveals four levels of maturity commonalities, as illustrated in Table 1.

The measurement or assessment of the maturity levels for project management of a country's government is a highly complex undertaking. Such an assessment will be influenced by multitude factors and variables:

- The socio-economic development trajectory and geopolitical realities of the country
- The system of government – federal, unitary, degree of centralisation, etc.
- The structures of government on different spheres, tiers and levels
- The nature and scope of government operations as mandated by the country's constitution
- The number of delivery agencies involved in projects and arrangements associated with public-private partnerships (PPPs)

TABLE 1: Organisational project maturity levels.

Maturity level	Category	Description
1	Initial, <i>ad hoc</i>	Level 1 implies no organisation-wide implementation of project management practices and processes. Instead, the ad hoc processes that are followed and its successes are mainly the result of the expertise and experience of individual project managers and teams
2	Some established management practices	Level 2 suggests that certain practices and capabilities were defined and utilised at organisational level, but these are not formal, complete or consistently adhered to throughout the organisation
3	Defined, consistent practices	Level 3 represents a consistent and formalised adoption of project management practices. Organisations have defined processes, tools and methods tailored to the needs of the particular industry and type of projects
4	Integrated and optimised practices	A Level 4 maturity stage implies that formalised project management methodologies are integrated fully into the functional processes of the organisation. Organisations set measurable project performance goals aligned with its strategic objectives.
5	Continually improving practices	The final level of maturity would follow a holistic, fully integrated approach to managing projects within an on-going cycle where processes are improved continuously. Projects are the main product or service delivery mechanism and the host organisation optimises processes of project design and implementation

Source: Adapted from Project Management Institute (PMI), 2017, *Organizational project management maturity model (OPM3TM)*, 4th edn., Project Management Institute, Newtown Square, PA; PM Solutions, 2012, *The project management maturity model (PMMMSM)*, viewed 27 March 2020, from <https://www.pmsolutions.com/resources/view/what-is-the-project-management-maturity-model>; and Software Engineering Institute (SEI), 2010, *CMMI® for development, version 1.3, CMU/SEI-2010-TR-033*, Software Engineering Institute, Pittsburgh, PA

- Political commitment to prioritise and execute certain strategies and programmes
- Interdepartmental organisational arrangements such as establishing separate business units or cost centres that can run projects independently
- The capacity of government departments and the skills, competency and knowledge of public officials
- Access to infrastructure, resources and project-related statistics.

An assessment of project maturity will be compounded further by the fact that certain government departments and agencies will have higher levels of project capacity than others. By focusing only on pockets of excellence may thus skew the assessment of the overall project maturity of a government.

Notwithstanding the complexities of such a maturity measurement, certain authors attempted to determine the organisational project readiness of governments. Examples are Mullaly (1998) in the case of Canada, Ofori and Deffor (2013) for Ghana, Prado and Andrade (2015) for Brazil, Simangunsong and Da Silva (2013) for Indonesia, Young, Young and Zapata (2014) for Australia and Wen and Qiang (2016) for China. These authors used a particular model to assess the maturity of selected departments or agencies, after which they extrapolated the results to the entire government. These attempts helped to improve perspectives on the measuring of government's project maturity. Nevertheless, researchers are yet to introduce an overarching approach or model for a comprehensive, holistic assessment.

In the light of these realities, it is necessary to examine the case study for purposes of this article, namely the system and structure of the Government of South Africa. Such a brief exposition is essential for an improved understanding of the way government policies, strategies and programmes are executed through projects in various government departments and agencies.

Project applications in the South African government

According to the Constitution of the Republic of South Africa, 1996, certain functions are reserved only for national

government. Other functions can be delegated for implementation on provincial or even local spheres. However, national government remains responsible for the function as a whole. In the national government sphere, there are executive public institutions, called government departments, which are responsible for the provision of services. Currently (as of 14 June 2019), there are 38 national government departments. These departments comprise the South African Public Service, which follows the strategy, character and structure of the state. The Public Service Act 103 of 1994 provides for the administration of personnel, which includes the public services of the nine provincial governments.

Increasingly, national government departments are exploring innovative ways to deliver services. Methods are being investigated and piloted such as shared services, outsourcing, improved use of agencies, commercialisation and PPPs. Especially, since democratisation in 1994, the system of the South African government was re-engineered to address political and socio-economic imbalances. In the process, national programmes and projects were initiated. Probably the most significant initiative in this regard was the Reconstruction and Development Programme, which particularly focused on development of infrastructure projects. These projects, however, encountered various difficulties because of insufficient and, often less-developed, state capacity to implement them.

The first real evidence of project applications in the South African government, according to PMBOK guidelines, came in 1997. The Department of Public Works approached Project Management South Africa to assist the government with the design of effective project practices. Some outcomes flowing from this endeavour were the establishing of the Project Management Standard Generating Body, the developing of Project Management standards and designing of national qualifications and educational programmes, as well as contributions to the Construction Professions Act 48 of 2000. Further evidence came in the launching of the Project Management Interest Group in 2001 as joint venture between National Treasury, the Department of Public Service and Administration and the Government Communication and Informational Services to help improve applications for project management in government.

The application of formal project management praxis in government is, thus, relatively new and emanates from various initiatives. These are the annual President's State of the National Address (highlighting so-called 'apex' priorities), the annual Government's Programme of Action (GPoA), Cabinet *Lekgotla* (strategic planning sessions), deliberations of Government Clusters and Portfolio Committees, Presidential *Izimbizo* (public engagement initiatives) and policy priorities. Such government projects have various permutations, as explicated here:

- Projects are limited to a single host organisation (i.e. national department), thus limited in scope, one-dimensional and focused on operationalising strategic objectives identified by the particular institution.
- Certain projects stem from sectoral clusters of government and are implemented across government spheres.
- Projects are initiated by a national department but outsourced in its entirety to specialist contractors; the department only provides oversight through performance contracting, compliance assessments and quality assurance.
- Often projects are championed by a national department but are outsourced partially through PPP arrangements.
- Certain projects result from programmes designed by national departments but executed by provincial and local government. In such projects, the national department is responsible for defining the procedures, preparing the managerial infrastructure, acquiring managers and allocating resources.

In cases where national departments show higher levels of maturity, the relative maturity of provincial departments is also enhanced by various project management applications. These entail clear delegation, methodology, reporting arrangements, quality assurance, project governance and political oversight mechanisms, steering committee competencies and the capacity of staff involved. One may thus refer to inter-project, intra-project and extra-project applications and execution. The intergovernmental relations and interfaces, across the three levels, influence the success of commonly implemented projects.

Furthermore, significant impetus for project applications came as a result of the country hosting the 2010 Soccer World Cup. This major project accentuated the need for a far more coordinated and integrated project-based approach in government, whereas departments are generally found to operate in silos. Project post-mortem sessions and feedback from various subproject steering committees highlighted the following challenges:

- Limited coordination of interdepartmental and intercluster projects
- Inadequate delegation of responsibility, authority to subproject management teams
- Excessive political interference in the decision-making processes of the steering committee
- Shortage in project management skills, including managerial capacity

- Government's annual and multi-year planning cycles frustrating project design and phase execution
- Lack of reliable and real-time project information and statistics
- Limited subproject progress monitoring and evaluation
- Complex decision-making layers in the public service that made timely sign-off of deliverables difficult (Allen 2013:408; Molloy & Chetty 2015:103; Pillay 2011:120).

It should be noted further that government projects are subject to extraordinary conditions such as political oversight, legal constraints, as well as significant public scrutiny and media attention. Such conditions place additional strain on national departments when hosting projects.

Government departments increasingly utilise principles and practices of project management to operationalise strategic portfolios and policy programmes. To varying degrees, departments thus become more project-based and manage operational functions within temporary project settings. There is, however, currently no official national directive that guides departments in pursuing a certain project methodology or system. As was confirmed by the empirical survey (explained here), certain directorates in national departments may apply PRINCE2 methodology and others are more PMBOK-based. Certain directorates also have their own proprietary, in-house methodology that applies to their particular functions and operations. Thus, in departments, no universal methodology is followed such as the PMI standard (e.g. PMBOK Government Extension 2002), International Organisation for Standardisation (ISO) and American National Standards Institute (ANSI)'s ISO 21500 (2012), or a system similar to the British Government's Functional Standard GovS 002. The South African government did, however, establish a comprehensive overarching national framework that directs the country's entire policy as well as its strategic and development direction and priorities. An analysis of this framework would also show the extent to which the country adopted project management through its implementation. The framework consists of the following primary official documents:

- National Development Plan: Vision 2030, and specifically Chapter 13 dealing with building a capable state (National Planning Commission [NPC] 2011)
- Government's Programme of Action (revised based on the President's annual State of the Nation Address)
- The Medium-Term Strategic Framework (MTSF) 2019–2024, including a 5-year NDP Implementation Plan
- The Medium-Term Expenditure Framework (MTEF) (2019) that sets out 3-year spending plans of Government ensuring budgets reflect the country's social and economic priorities
- Project and Construction Management Professions Act 48 of 2000.

Over and above, the above-mentioned documents, the respective clusters of government have established supporting guidelines to direct the implementation of this

strategic framework. These guidelines, referred to as secondary documents for purposes of the survey, include the following:

- National Treasury's Framework for Strategic Plans and Annual Performance Plans (2010)
- The Integrated Planning Framework Bill (2018) to coordinate the planning of programmes and projects across spheres of government
- National Treasury's Standard for Infrastructure Procurement and Delivery Management (2015)
- Government Information Technology Officer's Council of South Africa's Government-wide Enterprise Architecture (GWEA) Framework Implementation Guide (2010)
- Government-wide Monitoring and Evaluation System (GWM & ES) (2007) making provision for multisectoral project performance monitoring and evaluation
- Department of Public Service and Administration's Project of Transformation (POT), which serves as Management Information System (known as the POT Repository) to coordinate projects across national and provincial departments
- Integrated Financial Management Information System (IFMIS) (2009) – Master Systems Plan consisting of three phases comprised various projects, National Treasury IFMIS Project Office informed by PMBOK and PRINCE2 methodology
- Department of Rural Development and Land Reform's Draft National Spatial Development Framework (2018).

It should be noted further that the respective departments, for their particular functional domains, have established strategic documents, which also direct project management applications. The above-mentioned list is thus not exhaustive but does represent overarching governance domains, thereby providing a general perspective on the relative project maturity of the South African government. Examples of these department-specific documents are:

- Department of Minerals and Energy's System Development Life Cycle Guidelines (2006)
- Department of Cooperative Governance and Traditional Affairs' Municipal Infrastructure Grant Guide for the establishment of Project Management Units in participating municipalities (2007)
- Department of Human Settlements' Housing Project Process Guide (2009) as framework for national housing programmes and projects

- Department of Public Works' Infrastructure Delivery Management System (IDMS) (2010)
- Department of Environmental Affairs' Strategic Framework and Overarching Implementation Plan for Ecosystem-based Adaptation (EbA) in South Africa (2016–2021)
- The Presidency's Strategic Plan 2020–2025: Grow South Africa.

As a result of the particular application domains these documents represent, the extent to which it refers to project applications (i.e. maturity) is generally much higher than the official strategic documents for the entire public service. This confirms the view that the project maturity of certain departments is much higher than that of others.

Research methods and design

The research followed a qualitative, case-study design informed by an interpretivist paradigm. The data were collected for the survey by utilising two methods, namely content analysis and focus-group interviews.

Content analysis as a qualitative method is typically used to determine the presence of certain words, themes or concepts in qualitative data (Kolbe & Burnett 1991:244; Riffe et al. 2019:156). For the content analysis, the five national framework documents listed above and the eight supporting documents ($n = 13$) were scrutinised. The research investigated the extent (frequency) to which the documents allude to any form of project application or organisational arrangement that support the design and execution of government projects. A more extensive analysis would be appropriate that covers the content of all policy and strategic documents, as well as those of functional departments. Such an analysis may provide a more holistic perspective; however, this fell outside the scope of the present survey. The results of the conducted frequency analysis are summarised in Tables 2 and 3.

As second data-collection method, focus-group interviews were held with members of the Senior Management Service (SMS) in the Public Service. The National School of Government (NSG) is a national department mandated to develop and capacitate the South African Public Service by providing education, training and development programmes that empower public servants. In this regard, the NSG

TABLE 2: Content analysis of primary national documents.

Document	Nature of project applications	Frequency
National Development Plan: Vision 2030 (2011), p. 489	Aimed at moving the state towards modernisation through various types of projects such as infrastructure development, expanded public works, development and self-help, land reform and renewable energy	50
Government's Programme of Action (GPOA), 2020–2025	Measures the implementation of the National Development Plan (NDP) through the Medium-Term Strategic Framework (MTSF), annually revised based on the President's State of the Nation Address	4
The Medium-Term Strategic Framework (MTSF), 2019–2024	Is structured into 14 strategic priority outcomes for the country with key actions (i.e. projects), performance indicators and targets for each	28
The Medium-Term Expenditure Framework (MTEF), 2020	Sets out 3-years spending plans of government, ensuring budgets reflect the country's social and economic priorities and are part of the Medium-Term Budget Policy Statements (MTBPS) of National treasury	34†
Project and Construction Management Professions Act 48 of 2000	Prescribes the standardisation of project management practices and the official registration of project managers with specific reference to the construction industry	66

TABLE 3: Content analysis of secondary national strategic documents.

Document	Nature of project applications	Frequency
Policy Framework for the Government-wide Monitoring and Evaluation System (GWM & ES) (2007), p. 22	Providing for multisectoral projects to improve monitoring and evaluation of institutional performance, as well as the alignment between policy, strategy, programmes and projects	5
Department of Public Service and Administration's Project of Transformation (POT)	The database of Projects of Transformation (POT) is meant to make accessible service delivery and best practice projects within government. Thus, serving as management information system of projects, categorised into 15 clusters	75†
Integrated Financial Management Information System (2009)	It contains a Master Systems Plan in terms of three phases comprising various projects for National Treasury's IFMIS Project Office, as informed by the project methodology of PMBOK and PRINCE2.	14
Government Information Technology Officer's Council of South Africa's Government-wide Enterprise Architecture (GWEA) Framework Implementation Guide (2010), p. 62	Guidelines for implementation and support of departments' strategic and information infrastructure plans through operational planning that schedules the application of ICT projects	15
National Treasury's Framework for Strategic Plans and Annual Performance Plans (2010), p. 51	Guides the effective implementation of departments' strategic and performance plans with regard to policies, programmes, projects and budgets. As such, it facilitates the formulation and design of project proposals and the sequencing of departmental projects.	19
National Treasury's Standard for Infrastructure Procurement and Delivery Management (2015), p. 65	Establishes a comprehensive Infrastructure Delivery Management System (IDMS) for planning, budgeting, procurement, delivery, maintenance, operation, monitoring and evaluation of infrastructure projects. The IDMS provides for a programme and project management system as delivery instrument.	116
Department of Rural Development and Land Reform's Draft National Spatial Development Framework (2018), p. 195	Directs the implementation of the provisions of the Spatial Planning and Land Use Management Act 16 of 2013. Part 6 deals specifically with project design and the 'imbedding' of project management praxis in departments.	20
The Integrated Planning Framework Bill (2018), p. 28	Guides the coordination of government planning and the alignment of programmes and projects, as instruments to implement planning across the spheres of government	3

Note: Please see the full reference list of the article, Van der Waldt, G., 2020, 'Towards project management maturity: The case of the South African government', *Africa's Public Service Delivery and Performance Review* 8(1), a407. <https://doi.org/10.4102/apsdpr.v8i1.407>, for more information.

†, Estimates since detailed information is not available to the public.

IFMIS, Integrated financial management information system; PMBOK, Project management body of knowledge; PRINCE2, Projects in Controlled Environments Version 2; ICT, Information and Communication Technology.

designed an Integrated Management Development Programme (IMDP). Four component programmes form part of the IMDP model:

- Foundational Management Development Programme (FMDP)
- Emerging Management Development Programme (EMDP)
- Advanced Management Development Programme (AMDP)
- Executive Development Programme (EDP).

As flagship programme, the EDP is aligned fully to the SMS Competency Framework of the Public Service and equips senior public managers with the required knowledge and skills to manage government departments and agencies effectively. These managers typically fill the positions from Director to Directors General.

The delivery of the EDP to approximately 10 000 SMS members in nine provinces is done in conjunction with higher education institutions (i.e. universities). Based on their formative assessments, participants had to conduct a diagnostic audit of the project readiness and overall maturity of their respective government departments. As senior managers of these departments, their input is extremely valuable and reliable to assess the levels of project maturity within the South African government. Focus-group interviews were held during training sessions that were supplemented with content analysis of the members' formative reports. Delegates of 15 EDP groups representing 22 of the 38 national government departments in the South African Public Service were purposively sampled for the survey. In total, 227 senior managers participated in the sessions. The sample can be regarded as representative of the South African National government (target population: 10 000; confidence level: 99%; confidence interval: 8).

Results

Executive development programme participants were also asked to elaborate on the status of their respective departments regarding the overall project management maturity. Participants had to pinpoint organisational driving forces (both 'hard' and 'soft' issues) that currently make the department project-based, as well as the constraining factors that hamper the department in this regard. Participants were involved in focus-group discussions (cohorts) and also submitted their written responses on an e-learning platform as part of their formative assessments of competency. The relative significance of the responses was determined based on the frequency participants raised the particular issue. Issues with a frequency response rate of less than five were considered insignificant and thus excluded from the analysis. The responses were categorised in themes captured from participants' input, as presented in Table 4.

During focus-group interviews, participants were exposed further to a synopsis of core principles and levels of three organisational project maturity models, as outlined in Table 1 previously. In the focus groups, participants were asked to rate their respective departments' project maturity levels. Table 5 reflects their responses.

Discussion

The overwhelming majority of participants (84.5%) indicated that their departments are on Maturity Level 1, implying that the overall organisational readiness for project applications is relatively low. Twenty-six participants (11.4%) were of the opinion that their departments are between Levels 1 and 2; and 3.9% indicated that they are on Level 2. The single most significant reason, cited for their rating of Level 1, is the absence of a uniformly

TABLE 4: Assessment of organisational project readiness.

Themes	Constraining factors
'Hard' issues	
Organisational structure	<ul style="list-style-type: none"> • Departments function in uncoordinated silos, which lack a 'whole-of-government' approach • Organisational structures are based on functional operations and not geared for projects (e.g. matrix and flexible); thus, unfit for purpose. Structures are too rigid and do not accommodate more matrix-based project arrangements; bureaucratic, hierarchical departmental structure is not flexible enough to accommodate project teams • Projects are not always aligned with programmes and strategic portfolios • Departments do not have organisational breakdown structures that link organisational units with related project work items
Organisational support systems	<ul style="list-style-type: none"> • Limited alignment of projects with existing departmental operations and processes – organisational alignment and integration • Non-integration of organisational systems resulting in duplication and over-utilisation of resources – time, funds, employees, etc. • Limited alignment between various official management systems – PERSAL, BAS, SAMRAD, FMS, LOGIS, GIS, etc. • Limited project governance and oversight arrangements (e.g. PMU, PSO, project management office [PMO]); lack of a proper governance structure for coordination, strategic linkages and reporting • Lack of dedicated project IT support (e.g. PIMS) impacts quality of statistics, availability and reliability of management data • Departmental policies and strategies do not provide adequately for projects • Lack of a strategic mechanism such as a PMO that could function as a pool of experts to guide, assist, monitor and facilitate development and implementation of projects • Lack of administrative arrangements – templates, format of reporting, etc. • Project procurement processes are extremely time-consuming • Limited project guidelines and operating procedures • Insufficient project monitoring and evaluation • Poorly documented and structured initiation and prioritising of deliverables • Inadequate or no planning of activities that lead to the achievement of intended deliverables • Weak monitoring and controlling mechanisms • Late completion of projects and little or no formal sign-off • No uniform methodology to guide project management
Design (workflow)	<ul style="list-style-type: none"> • Workflow in the department is not based on life-cycle phases of projects • No clear responsibilities and terms of reference for certain activities and functions • Bottlenecks in system regarding approval of project phases • Implementing agents find it difficult to complete projects on time and within budget, during a specific financial year because of late submission of project plans
Resource allocation and management controls	<ul style="list-style-type: none"> • Budget allocations not performed according to project milestones • Grants are conditional to strict treasury and departmental regulations • ICT networks and equipment are not always available • Sourcing strategies and supply-chain procedures not always conducive to project planning. • Limited cost and quality controls
Outsourcing	<ul style="list-style-type: none"> • Major components of projects are usually outsourced; it does not contribute to capacity building and project maturity in government • Cumbersome contract management systems and procedures • No skills transfer from consultancy agencies or contractors back to government departments
'Soft' issues	
Organisational culture	<ul style="list-style-type: none"> • Vastly different value sets within and between departments • Cross-collaboration on projects limited • Limited interdepartmental cooperation and coordination
Management issues	<ul style="list-style-type: none"> • Limited and insufficient delegation of authority to project managers – rather depending on rank or position • Project managers must have more decision-making authority and not be overloaded with other functional responsibilities • Terms of reference: formal project-charter outlining roles and responsibilities including reporting lines should be adopted for each project and used as a guideline
Performance and productivity	<ul style="list-style-type: none"> • Process and performance reviews not done according to clear performance indicators and standards • Low productivity and morale of public officials • Process reviews insufficient • Performance agreements and Personal Development Plans should be designed to measure and reward excellence in implementing the new project-based approach • No sense of urgency to meet project targets and deadlines • Low commitment levels – mainly because of limited or lack of incentives • Insufficient consequence management if officials do not meet targets
Stakeholders	<ul style="list-style-type: none"> • Multitude of stakeholders with different expectations, priorities and concerns, as well as diverse cultures • Lack of stakeholder management – participation mechanisms and incorporating conflicting perspectives • Cooperation and trust are limited
Politics (party and organisational)	<ul style="list-style-type: none"> • Projects are not financially viable yet implemented because of political considerations, with serious ramifications for public officials if projects are not successful – demoralising staff • Project feasibility and value-for-money propositions are not adhered to because of political pressures • Shifting political priorities lead to in-year changes to a project's scope and deliverables
Human resources	<ul style="list-style-type: none"> • Team members recruited without the required project skills and experience rather than based on being 'politically connected' • Poor project planning because of lack of skills, no holistic and detailed thinking • Team members often serve on various projects simultaneously and have to balance these responsibilities with those of their 'normal' job • Project management training and development not regarded as priority area in official Training and Development Plan; frustrates a department-wide project management approach • Departments compete for the same professionals, sourcing scarce skills are compromised • High vacancy rate of professionals such as engineers, quantity surveyors (as high as 70% in the Department of Public Works). (According to ECSA's Annual Report 2017, there are only 28 195 professionally registered Engineers in South Africa. This signifies the 'small pond from which all departments are competing for scarce skills')
Project managers (personal issues)	<ul style="list-style-type: none"> • Difficult to manage project and functional responsibilities simultaneously • Lack of skills in project management, especially technical expertise such as impact assessments, feasibility studies, risk analysis, procurement, contract management, legal ramifications and stakeholder analysis • Conflict between project managers and functional managers – mainly over resource and staff allocations • No clear role and responsibility clarification of project managers, steering committees, functional managers, stakeholders, etc. • Lack of resources, including time to complete projects successfully • Lack of a project culture because of narrow bureaucratic perspectives of senior managers who take central control; do not delegate adequate authority and responsibility to project managers. Project managers do not have sufficient authority to make key decisions

PERSAL, Personnel and Salary System; BAS, Basic Accounting System; SAMRAD, South African Mineral; Resources Administration System; FMS, Financial Management System; LOGIS, Logistical Information System; GIS, Government Information Services; PMU, Project Management Unit; PSO, Project Support Office; PIMS, Partnership Information Management System; ICT, Information and Communication Technology; ECSA, Engineering Council of South Africa.

agreed project methodology that will assist the department in its design and implementation of projects. Participants generally concurred that such a methodology should

accommodate typical functional projects by providing for all 10 PMBOK knowledge areas. The fact that a standardised project management methodology is not applied across

TABLE 5: Departments' project maturity levels.

Response: Maturity level	Number of participants	%
On Level 1	192	84.58
Between Levels 1 and 2	26	11.45
On Level 2	9	3.96
Total	227	100

government departments, according to participants, complicates the following managerial functions:

- Joint planning between departments, each following its own methodology and protocols
- Interoperability and standardised knowledge-sharing platforms
- Standardisation of project life-cycle processes
- Compliance standards and quality assurance
- Performance monitoring, auditing and reporting
- Legislative compliance.

Especially three aspects became clear from the findings. Firstly, the absence of a standardised platform to foster interoperability of project information management systems across government spheres and tiers. Such a deficiency makes a holistic perspective on project status virtually impossible. Secondly, a more detailed analysis of the responses revealed that the nine participants who indicated 'Level 2' maturity are working in specialised directorates such as planning or information technology, which often have more mature project environments. For example, one of the participants of the Department of Mineral Resources indicated that they adopted PRINCE2 methodology, but only in the Directorate: Informational Technology. It may thus be that their assessments were based on experiences in individual directorates and not the entire department. Thirdly, the findings showed that departments are not yet project-based and projects rather take place on an *ad hoc* basis. Associated institutional arrangements and organisational processes are executed inconsistently. This implies that maturity may differ in the various organisational arrangements, governance structures, and number of implementation agencies and stakeholders involved. The levels of maturity thus differ in terms of inter-project, intra-project and extra-project arrangements.

Regarding the survey methodology, especially two potential limitations should be noted. Firstly, the findings are time sensitive. A newly appointed senior manager may dramatically enhance the project maturity of individual departments by introducing new systems, strategies and methodology. Regular studies of this nature should thus be undertaken to monitor the potential progression of organisational readiness for each department whilst investigating project management maturity. Secondly, the survey did not differentiate between the various departments and also did not consider provincial and local government institutions. A more comprehensive analysis of government project maturity should consider all spheres and tiers of government. The survey did, however, contribute by illuminating the complexities involved in such an assessment and introducing two appropriate methods, namely content analysis and focus-group interviews.

Recommendations towards improving project maturity in government

Based on the triangulation of the three data sets (i.e. theory, content analysis and focus-group interviews), the following recommendations are made to enhance the project capacity and competency of government departments. These recommendations suggest interventions for organisational readiness to improve the design, execution and contribution of projects as instruments used to implement policies and strategic programmes:

- Adopt a government-wide generic project management methodology to improve existing deficiencies in the following functions: interoperability, project prioritisation, interdepartmental coordination, the use of uniform tools and techniques, and reporting, control and accountability arrangements.
- Adjust organisational arrangements to support project management by adopting more flexible hierarchical structures by establishing project management offices (PMOs) in ministries to serve as departmental project hubs. In addition, adopt information systems and databases, as well as decentralised decision-making for budget and resource allocation. It may require extensive re-engineering of business processes to adjust all systems, functional processes, methods and procedures, rules and regulations, and related processes to make these more project friendly.
- Revise the statutory and regulatory framework that governs the public service by streamlining the roles and responsibilities of departments in managing, controlling and monitoring projects. The legal framework should also enhance the project maturity of departments by eliminating bureaucratic practices such as cumbersome budget approvals, resource allocation and authorisation procedures. Furthermore, such a framework should decentralise the decision-making authority by devolving it to project managers.
- Embrace processes of change management to ensure organisational cultures are adjusted. The commitment of political heads and senior officials is vital for a successful implementation of a government-wide project management methodology. Such change management should be supported further by cabinet resolutions. Change management is a prerequisite for government to compete internationally in the Information Society and Knowledge Economy, as well as to embrace the Fourth Industrial Revolution. As a result of the worldwide coronavirus disease 2019 (COVID-19) crisis, departments would have to reassess, reshape and reinvent such change management to include remote access and virtual socialisation by utilising the Internet of things.
- Design and implement capacity building and training sessions to capacitate senior and middle-level managers in the design, implementation and control of departmental projects. The South African government faces significant

challenges in the development of human capital. Thus, the focus should be on building the capacity required to implement a uniform project management methodology.

The uniform project management methodology for all departments should be rolled out in phases to cover immediate, medium-term and long-term objectives and tasks. A national steering committee should monitor implementation through the following tasks: manage departmental maturity processes, uncover challenges and stakeholder concerns and expectations, and disseminate best practice to other departments. For the mentioned best practice, a more robust analysis is recommended to cover project information contained in the Department of Public Service and Administration's POT Repository of national and provincial projects. Such an analysis will provide a more in-depth and detailed perspective of government's overall maturity (see <http://www.dpsa.gov.za/dpsa2g/pot.asp>).

Best practice inferred from these projects can significantly enhance government's organisational project readiness and its overall project maturity.

Conclusion

The assessment and improvement of a government's project management maturity is a complex task because of various factors. However, continuous efforts should be made to adopt and adapt internationally accepted standards and maturity models for project management to inform government settings. An extensive corpus of knowledge indicates that project maturity in government generally leads to more effective implementation of policy, more successful socio-economic development imperatives and more efficient service delivery.

The findings accentuate the need for a far more coordinated and integrated project-based approach in the South African government. This implies the adoption of a generic, uniform department-wide project management methodology. Such a methodology could significantly improve interdepartmental coordination, co-operation, interoperability and encourage the sharing of best practices. Government's organisational readiness and overall project maturity should be assessed continuously to monitor and build the capacity of the state, in order to realise the strategic outcomes outlined in the NDP.

To conclude, project management maturity in governments is under serious scrutiny because of the changed socio-economic environment brought about by the COVID-19 crisis. The readiness of institutions on all spheres and tiers of government to adopt project management praxis is vital to translate national policies and strategies into rapid-response projects.

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Author's contributions

G.v.d.W. is the sole author of this research article.

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